IN-DEPTH ANALYSIS

Requested by the ECON committee

Monetary Dialogue Papers, September 2020

European Parliament

# COVID-19 and the Future of Quantitative Easing in the Euro Area: Three Scenarios with a Trilemma


Policy Department for Economic, Scientific and Quality of Life Policies
Directorate-General for Internal Policies
Authors: Luigi BONATTI, Andrea FRACASSO, Roberto TAMBORINI
PE 652.740 - September 2020

EN

# COVID-19 and the Future of Quantitative Easing in the Euro Area: Three Scenarios with a Trilemma

Monetary Dialogue Papers
September 2020

**Abstract**

We present the set of measures that the ECB has undertaken to fight the pandemic crisis by outlining the deep impact that COVID-19 is having on economic structures, and by highlighting the differences between the current policy package and previous ECB's programmes. Moreover, we discuss what are the challenges that await the ECB in the medium to long run, contingent on different post-COVID scenarios concerning economic growth and inflation, considering its peculiar multinational jurisdiction.

This document was provided by Policy Department A at the request of the Committee on Economic and Monetary Affairs (ECON).

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


**AUTHORS**

Luigi BONATTI, University of Trento
Andrea FRACASSO, University of Trento
Roberto TAMBORINI, University of Trento



**ADMINISTRATOR RESPONSIBLE**

Drazen RAKIC

**EDITORIAL ASSISTANT**

Janetta CUJKOVA

**LINGUISTIC VERSIONS**

Original: EN

**ABOUT THE EDITOR**

Policy departments provide in-house and external expertise to support EP committees and other parliamentary bodies in shaping legislation and exercising democratic scrutiny over EU internal policies.

To contact the Policy Department or to subscribe for updates, please write to:
Policy Department for Economic, Scientific and Quality of Life Policies
European Parliament
L-2929 - Luxembourg
Email: Poldep-Economy-Science@ep.europa.eu

Manuscript completed: September 2020
Date of publication: September 2020



This document is available on the internet at:
https://www.europarl.europa.eu/committees/en/econ/econ-policies/monetary-dialogue



For citation purposes, the study should be referenced as: Bonatti, L., Fracasso, A. and Tamborini, R., *COVID-19 and the Future of Quantitative Easing in the Euro Area: Three Scenarios with a Trilemma*, Study for the Committee on Economic and Monetary Affairs, Policy Department for Economic, Scientific and Quality of Life Policies, European Parliament, Luxembourg, 2020.

# CONTENTS

# LIST OF ABBREVIATIONS

| | |
|---|---|
| **APP** | Asset Purchases Programme |
| **CSPP** | Corporate Sector Purchase Programme |
| **ECB** | European Central Bank |
| **ESM** | European Stability Mechanism |
| **EU** | European Union |
| **IOU** | I Owe You |
| **LTRO** | Long Term Refinancing Operations |
| **NGEU** | Next Generation EU |
| **PEPP** | Pandemic Emergency Purchase Programme |
| **QE** | Quantitative easing |
| **SURE** | Support to mitigate Unemployment Risks in an Emergency |
| **TFEU** | Treaty on the Functioning of the European Union |
| **TLTRO** | Targeted Long Term Refinancing Operations |
| **UMP** | Unconventional monetary policies |

# LIST OF FIGURES

# EXECUTIVE SUMMARY


- **The COVID-19 pandemic modified profoundly the economic structures, the economic processes, and the transmission mechanisms of policy actions in the euro area.** Because of its depressing effects on both the supply side and demand side, large parts of the conventional wisdom in economic policymaking appear as unfit.
- **The pandemic has dragged the ECB into a trilemma**, among **preserving the integrity of the euro area** against massive flight-to-safety phenomena and self-fulfilling prophecies, on the one side, and "**monetary orthodoxy**" (the central bank with a single mandate of price stability and no debt financing over the long term) and "**fiscal orthodoxy**" (fully national fiscal sovereignty under budget and debt constraints plus "market discipline") on the others.
- **Both the PEPP**, that is the extraordinary QE programme established to address the crisis and preserve the integrity of the euro area and the smooth functioning of monetary policy, **and the agreement on a "Next Generation EU" package** connected to the EU budget **open a timely and necessary relaxation of these orthodoxies**. Yet, these solutions have been presented and justified as **exceptional and temporary**, aiming to prevent economic collapse and buying time until the recovery.
- In this paper we argue that what will happen to this consensus and what unconventional tools will become part of the ECB's new toolbox in the future rests much on the **economic and political scenarios that will materialise once the pandemic will end**, especially if it will be evident that in some countries the political conditions for fiscal consolidation and effective growth-enhancing reforms are missing.
- If the economy will **recover immediately**, or after a little while, the rationale for expansive asset purchases will be weaker. In the case of a **prolonged stagnation**, the ECB would be economically justified to continue its unconventional interventions, but prolonged and large QE purchases will be accepted only if a consensus will be reached on a revised review of the ECB' strategy and, possibly, on the reform of the euro area economic governance. The ECB would eventually face a difficult choice between supporting the debt of the countries in trouble or exposing the euro area to a crisis that might lead to its implosion. This is, ultimately, a threat to the very existence of the ECB.
- **The ECB cannot be left to deal with this dilemma alone.** This is the right time for euro area countries to check whether guidelines and strategies shaping the ECB's policies are still appropriate for the post-COVID-19 world and eventually try to modify it. The PEPP and other extraordinary measures are buying time, also to accomplish this profound rethinking.

# 1. INTRODUCTION

The ECB, not unlike other central banks, but with its own peculiarities, is addressing the unprecedented challenges posed by the *specific, "extraordinary and acute economic crisis"* due to the COVID-19 pandemic by adopting a set of emergency measures: "*Extraordinary times require extraordinary action*" (Lagarde, 2020a). This package of measures mainly consists of extensions or further easing of previous programmes launched after the financial and economic crisis of the early 2010s (e.g. LTROs, TLTROs, CSPP), a new enhanced arrangement of the APP (including the newly-established PEPP), and the relaxation of macroprudential regulations for the banking sector.[1]

The pandemic hit still convalescent economies. This was particularly the case in the euro area, where the crisis had been deeper and longer than in other advanced regions, with growth still remaining anaemic in 2018-19. The ECB's stance, at the outbreak of the pandemic, was in substantial continuity with the very accommodative mode of the previous years, whereas monetary policy in the US and UK was heading towards normalisation (see EEAG, 2020).[2] Indeed, the pre-shock macroeconomic trends of the euro area, according to the ECB's judgement, did not allow for a quick exit from its strongly accommodative stance (Lagarde, 2019). The assessment of the previous experience has been matter of extensive research and debate, also in the series of Monetary Dialogues, and the past is not our main focus here.[3] Hence, in this paper we wish to present the set of measures that the ECB has undertaken to fight the pandemic crisis by outlining the deep impact that the COVID-19 shock is having on economic structures, by highlighting what differs between the current policy package and previous ECB's programmes, and by discussing what are the scenarios that the ECB is likely to face in the future.

In more detail, Chapter 2 depicts the profound modifications that the pandemic brings about in the functioning of the economy, by focusing on the channels whereby the pandemic is affecting it, the uneven effects that it is bringing in different sectors, the disruptions that is causing in the supply chains and monetary-financial networks.

Chapter 3 points out differences and analogies between previous ECB's quantitative easing (QE) programmes and the measures that it is currently undertaking, in particular stressing the peculiar features of the Pandemic Emergency Purchase Programme (PEPP) *vis-à-vis* the Asset Purchase Programme (APP) and the reasons why the monetary authority emphasises the extraordinary and temporary nature of the former.

Chapter 4 seeks to figure out what are the challenges that await the ECB in the medium to long run, depending on different hypotheses in the post-COVID-19 scenario concerning economic growth and inflation, with special reference to the delicate choices that the ECB may have to make because of its multinational jurisdiction.

Chapter 5 concludes by calling for a rethinking of monetary policy in the post-pandemic world.

[1] The complete timeline of ECB measures is provided by Claeys (2020). The author also provides a detailed argumentation about the statutory legitimacy of the measures, that we do not address here.

[2] However, as of late 2019, normalisation of monetary policy was still regarded as largely incomplete, and reversible, worldwide (Borio, 2019).

[3] Lane (2020a) provides an up-to-date and detailed account of the ECB's monetary policy tools in the eve of the pandemic. Earlier Monetary Dialogue assessments of UMP are collected in European Parliament (2015, 2016, 2017).

# 2. THE ECONOMIC POLICY CHALLENGES OF COVID-19

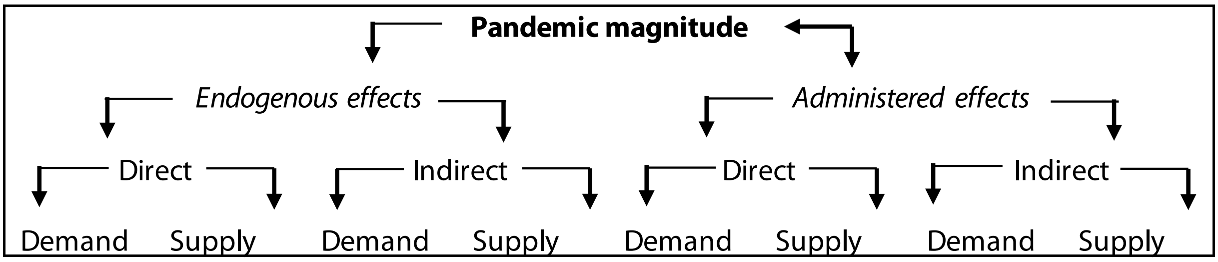
Any assessment of present and future economic policy choices in the euro area should be aware of the profound modifications that the COVID-19 pandemic is creating in economic structures, economic processes, and transmission mechanisms of policy actions. Large parts of the conventional wisdom built along the past several decades are all of a sudden becoming unfit. A similar effect was widely felt in the face of the global financial crisis and great recession of 2008-09, and, indeed, the pandemic has caught the major economies, and the economic profession, in still convalescent state. Furthermore, as we shall see, the implications of the pandemic are of a different, largely unusual, nature.

Researchers in academia and official institutions are frantically seeking to understand how post-COVID-19 economies may look like and to organise new knowledge in a systematic and workable framework.[4] In just a few months, a remarkable amount of research has been produced and much more is in the pipeline. We deem therefore important that the "state of art", though still quite incomplete and in evolution, is brought to institutional actors in the best possible way. This is a necessary step to identify the challenges facing the ECB in the future and influencing the future use of QE.

## 2.1. The transmission channels from the pandemic to the economy

To understand the pandemic's transmission channel, a general orientation scheme is provided in Figure 1. The fundamental input variable is the pandemic magnitude, which consists of four dimensions: **speed, extension, infectivity** (how many people fall ill), **lethality** (how many people die).[5] The two variables with the highest relevance are infectivity and lethality, which are the outcome of the speed and extension of the pandemic in connection with the capacity of the health-care system to cope with mounting pressure. Hence, the limitation of speed and extension is key to the strategy of containment of the pandemic, with two main tools: social distancing and the so-called lockdown (e.g. limitations to individuals' mobility and/or the suspension of economic activities).

Figure 1: The transmission channels of the pandemic




Source: Authors' own elaboration.

The outcomes of the transmission channels of the pandemic are the effects on (aggregate) demand and supply as vehicles of repercussions on wages, employment and prices. What the scheme in Figure 1 highlights is that, first, **both demand and supply** are bound to be affected by the pandemics, and, second, that the final changes in demand and supply are the combined results of a variety of effects with possibly different and conflicting signs.

[4] See for instance, among many, Vaitilingham (2020), and the two CEPR e-books edited by Baldwin and Weder di Mauro (2020a, 2020b).

[5] For an economist's view of epidemic models see e.g. Baldwin (2020)

The transmission channels from the pandemic to the economy can first be distinguished between **endogenous** and **administered**, each affecting demand and supply in a direct and indirect manner. Moreover, the pandemic has a global dimension, so that each channel in the scheme should be thought of as exposed to imported spillovers as well as a vehicle of exported spillovers.

Endogenous are the effects that would occur with no administrative measures of the authorities or independently of them. This is an important channel to keep into consideration, as witnessed by the lively debate on the trade-off between "health and wealth". It would be a serious mistake, made by some governments at the earlier stages of the pandemic, to think that the pandemic hurts the economy only as a consequence of the restrictions imposed to prevent the diffusion of the virus. Zero restrictions do not mean zero economic losses because the unfettered pandemic does hurt (seriously) the economy by itself, possibly delivering *both* high fatalities *and* large economic losses (e.g. Bodenstein et al., 2020).

As said, the main government containment measures are **social distancing** and the **lockdown** of types of economic activities and/or sectors; these are also the main drivers of the economic effects of the pandemic via the administered channel (through their own branches in the scheme). At the same time, however, these measures are expected to have also a positive feedback on the reduction of the pandemic magnitude. Hence, even within the strict economic domain, quite apart from the intrinsic value assigned by the government to human lives and health, if administered restrictions have a cost, they also have a benefit to the extent that the endogenous effects of the pandemic on the economy will be mitigated.

All in all, this general picture highlights that economic policy in the time of the pandemic should pursue a **twin-arm strategy**: one aims at finding the optimal balance between the costs and benefits of administered restrictions, the other aims at sustaining the economy in order to minimise the overall impact (endogenous and administered) of the pandemic. The two arms are complementary: the first reduces the need for the second and vice versa.

In order to calibrate the measures necessary to sustain the economy, the best possible diagnosis of the various channels of the pandemic represented in Figure 1 is crucial. Research in this field is evolving in real time, so to speak, and we cannot present a full-blown analysis here. However, it is worth examining a few channels on which a substantial clarity has already been achieved, so as to inform the role that monetary policy and the ECB may play.

## 2.2. Demand and supply shocks

Let us first consider the endogenous channels. As the pandemic unfolds, the first-order economic effect is due to infections and fatalities. The infected and the deceased interrupt their economic activities, in the first place at work. This amounts to a sudden drop in the labour force, i.e. a **supply-side shock**. Households with working members forced to stay at home, or passed away, lose part of their income, which also creates a **demand-side shock.** In normal times, firms facing a fall in their labour force may go to the labour market in order to replace the lost workers, and newly hired workers may, in the aggregate, compensate for the demand cuts of the inactive ones. Yet the speed and extension of the pandemic may well freeze labour supply, too, thus making worker replacement extremely hard.[6]

[6] Examining an economy with mild and scattered lockdown like the US as of March 2020, Coibion et al. (2020) have found a fall in the participation in the labour force of 7%, more than double of the cumulative decline 2008-16. Considering Korea, which has not implemented lockdown, Aum et al. (2020) have estimated an endogenous drop in employment between 2% and 3%, while lockdown accounts at most for half of the job losses in the US and the UK.

The administered lockdown of firms and sectors has basically the same effects, with the difference that it can be engineered paying careful attention to intersectoral relationships and the continuity of supply of basic goods and services in order to avoid uncontrolled cascades of spillovers upstream and downstream across firms and sectors, which can in fact magnify the overall collapse of production and employment (Barba Navaretti et al 2020).

A round of indirect effects on demand and supply may involve the other production factor, namely capital. It is well established by theory and evidence that in face of higher uncertainty on cash flows firms delay investment projects (Dixit, 1992; Dixit and Pyndick, 1994; Saltari and Ticchi, 2007). If the upsurge of uncertainty is particularly strong, interest rate cuts might fail to stimulate capital expenditures to a sufficient degree, even with the interest rate at its zero lower bound (Miyazaki et al., 2004; Belke and Göcke, 2019). Moreover, even firms that decide to carry on their plans may be unable to purchase new equipment if suppliers are unable to deliver it. The consequence is that also investment, in addition to consumption, falls amplifying the demand-side effect. But, delay, or cutting, of investments is also a supply-side shock since production capacity is curtailed or will not grow as much as it would in normal times.

The double-sided effect of the pandemic, epitomised by the elementary segment of the whole process described above, gathers almost general agreement among analysts. Then conventional macroeconomic policies encounter a first problem, since they are based on theories, and models, where aggregate demand and supply are independent. Consider a central bank, such as the ECB, with the single mandate of price stability. The change in the price level brought about by supply and demand falling together may be of any sign. And if the price index goes up because supply falls more than demand, is a monetary restriction the right response? Moreover, monetary and fiscal (budgetary) policies are regarded as means of managing aggregate demand with negligible supply-side effects, whereas, as we shall see, they affect both.

## 2.3. Sectoral effects and supply chains

A second challenge for conventional macro-policy is that the **sectoral composition of the shocks** is crucial, which may be ill-managed by means of standard aggregative models. As said above, in this respect, administered lockdowns are preferable since they enable the government to control for the intersectoral effects. As a result, several different situations may arise: (i) firms (sectors) that stop production because they are locked down, (ii) firms (sectors) that stop production because of bottlenecks in the intermediate supply chain, (iii) firms (sectors) that can produce but face a fall in demand, (iv) firms (sectors) that can produce and face a rise in demand.

Case (i) is emblematic of an administered supply-side shock that creates a parallel demand-side shock as previously described. In the portion of the economy under administered lockdown the market mechanisms are out of order, and also demand stimuli are pointless. **Quantity adjustments** (production and employment are cut in parallel) become predominant and pervasive.[7] The key policy issue is the **survival of the involved firms and workers,** knowing that the more of them fall apart, the more the shock is transmitted to the rest of the economy. These considerations explain why "buying

[7] The general picture is more akin to the *rationing schemes* (i.e. firms are constrained in the supply of goods and in the demand for labour, households are constrained in the supply of labour and in the demand for goods) studied as microfoundations of Keynesian economics (e.g. Barro and Grossman, 1970; Malinvaud, 1977). When demand and supply in goods and labour markets fall together, prices and wages change little, if any, not because they are not free to move but because rationing (dis)equilibria cannot be resolved by decentralised price changes. Deep mechanisms of decentralised inter-sectoral or inter-personal adjustments becomes critical. Modern "non conventional" tools apt to study these processes of *self-organisation of complex systems*, imported from physical and biological sciences, have been developed, such as network analysis and agent-based systems (see e.g. Brock and Colander, 2000; Colander et al., 2008; Delli Gatti et al., 2013; Elliot et al., 2019). These tools have already gained some ground in support of policymaking after the crises of the last decade, and they will probably receive a new impulse.

time" (Hassler and Storesletten, 2020) is indeed an essential element of policymaking at the time of a pandemic (more on this in paragraph 3.2).[8] The problem here has a prominent financial content that will be discussed later in paragraph 2.4.

Case (ii) has attracted a lot of attention, especially in the global perspective of imported/exported effects (Baldwin and Tomiura, 2020). Supply chains are an eminent example of self-organisation of a complex system of production relationships based on free mobility of goods and persons, a net of international investment, and an efficient web of long-distance transports. It is clear that the breakdown of supply chains is playing a crucial role in determining the economic impact of the pandemic.[9] Indeed, it is well-known that **international trade is a magnifier of economic shocks**. There is a general feeling that the organisation of supply chains has revealed unsuspected fragilities. Where does the breakdown begin and how does it spread? Are these effects temporary or permanent? How will the system look like after the pandemic? What will be the impact on price and wage inflation dynamics? What the role of the exchange rate? Understanding these phenomena, and figuring out appropriate interventions, will require large use of sophisticated tools.[10]

Cases (iii) and (iv) represent the portion of the economy where markets are still in function, but are also conditioned by the spillovers from the portion under lockdown. The main spillover channel is households under income constraints. But, **consumers also relocate their demand** across goods and services in response to the pandemic; these choices, beside authorities' dispositions, matter but they are hardly predictable. Main drivers are new pandemic-related needs (health-care products and services are the obvious example) and subjective perception of risk (conditional on available official, or unofficial, information). High risk perception, and self-imposed social distancing, may penalise consumption with high social interaction (public entertainment, tourism, collective transports, sports). Preferences also shift towards individual and at-home consumption and activities in general, the most tangible case being the boom of personal ICT devices supporting distance work, education, entertainment, shopping. Another important distinction is between durable and non-durable goods. The purchase of a new washing machine may be put off and resumed as the economic situation improves; skipping the Saturday night's family pizza is a non-recoverable loss for the restaurant.

Two are the main messages that follow for policy modelling and implementation. First, demand-supply effects across sectors are the main drivers of changes in prices, whose aggregate sign, however, remains largely undefined *a priori* (Baqaee and Fahri, 2020). Second, the width and depth of the pandemic economic crisis is largely conditioned by the sectoral structure of the economy, its location in international supply chains, the behaviour of consumers, and how information is provided and received. The **heterogeneous impact of the pandemic** is an aspect of particular importance in the multi-country setup of the euro area. As we shall see in the subsequent chapters, not only do the direct and indirect shocks hit countries in very different conditions, but they also set in motion highly differentiated reactions in the public and private sectors. While the governments in the EU took their time to negotiate a common, extraordinary and one-off response, the ECB was since the beginning, and will remain, the only "central" institution able to act with a view to preserving the integrity of a

[8] The President of the ECB , Ms Lagarde, used the expression 'put the economy on hold' in the ECB blog "How the ECB is helping firms and households". 9 April 2020.

[9] Bonadio et al. (2020), examining 64 countries in a multi-sector framework, argue that the contribution of supply chain breakdown to the world GDP loss may reach one third. *The Economist* in March reported analyses predicting that the lockdown of Hubei alone (a relatively *small* region in China), could freeze 10% worldwide shipments of smartphones).

[10] Granular inter-sector analysis, in the first place (e.g. Bonadio et al., 2020), and network self-organisation analysis in the second (Schiavo and Sartori, 2015; Fracasso et al., 2018 are examples).

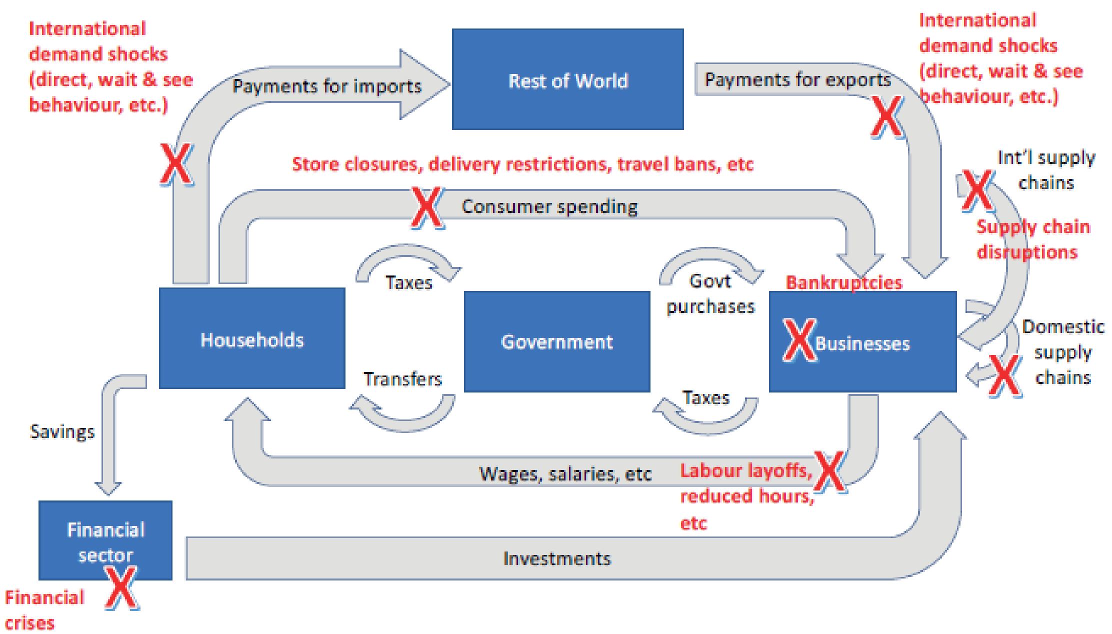
differentiated area. The issue is likely to re-emerge in the near future, but it will differ in accordance with the health and economic scenario that will materialise (see chapter 4).

## 2.4. The monetary-financial network

The orderly functioning of the economy rests on the **orderly functioning of the underlying financial network.** In fact, developed economies live on myriads of transactions of goods and services that are not settled in nature (barter) but by means of IOUs. The basic one is fiat money (legal coins and notes), which is an IOU of the central bank. Though cash need not be used, this kind of economy stands on its own feet as long as IOUs are in fact, and people believe they are, *payable in money*. The web of IOUs should be understood as a complex evolving structure whose fragility or resilience depend on the topological characteristics of the connections between the various nodes (banks, financial intermediaries, borrowers), and the rules of the game (regulatory institutions). This view has far-reaching implications for monetary policy in the pandemic (Leijonhufvud, 2007; Borio, 2012, 2019; Haldane, 2009; Stiglitz, 2011).

A first glance at the way the pandemic may disrupt the financial network that underpins the economy is given by the circular monetary flow reproduced in Figure 2 from Baldwin and Weder di Mauro (2020b). It shows the interrelations among the economic sectors (households, non-financial firms, financial intermediaries, government, and rest of the world) in terms of the reciprocal flows of payments generated by transactions in goods and services. Payments of one sector are revenues for another. The monetary equilibrium of the economy obtains if each sector is in balance (payments = revenues).

Figure 2: The monetary flow network




Source: Baldwin and Weder di Mauro (2020b).

The red crosses in the flow chart indicate where the effects of the pandemic break down the circuit, i.e. they create an imbalance between payments and revenues. As an example, consider the simple circuit between households and business. Locked-down businesses interrupt payments to households; the consequent interruption of consumer spending makes businesses illiquid, i.e. unable to meet their own payment obligations. The "bug" is then transmitted downstream because those who fail to receive payments from illiquid businesses become illiquid themselves. This is the typical domino effect, or "cascade" in network parlance, that spreads the initial shock throughout the economy and that actually triggers the Keynesian multiplier effects.

As said above, payments need not, and typilcally do not, take place by means of cash, they are replaced by IOUs. Thus the key role of the banking system (central bank + chartered banks) is twofold: first, guarantee the **viability of IOUs**, second, stand ready to **provide liquidity**. In fact, IOUs are to be payable in money on call. Knowing that businesses' IOUs that promise payments are not matched by IOUs that promise revenues, all claimants do want to be paid cash. The only alternative to bankruptcy cascades is a swap of businesses' IOUs to banks against the equivalent provision of cash.

Now it is banks that hold businesses' promises of payments unmatched by equivalent promises of revenues. But, it may be argued, taking risk is the banks' own business. As noted by Beck (2020) and Borio (2020), today banks in the euro area are in better health than a decade ago, with the important difference that the crisis of the 2010s originated in the financial sector, whereas the pandemic has hit the real economy first. True, but with a caveat. Banks' good health has been gained at the cost of heavy regulatory and prudential burdens. Sustainable risk has to be diversifiable, but if the business sector's illiquidity is pervasive, risks cannot be diversified away and the systemic illiquidity would simply be shifted from businesses to banks. There is only one backstop to this shifting process: the **central bank**.

## 2.5. Monetary policy, fiscal policy, and the euro area

Scholars of different persuasions today converge on the following recommendations (e.g. Baldwin and Weder di Mauro 2020a, 2020b): 1) preventing the economy from complete collapse requires **prompt, large and unconditional support**, both on the demand-side and on the supply-side, of the kinds presented so far, 2) monetary and fiscal policies are **strategic complements** (using both allows lesser use of each) and should be coordinated, 3) each instrument should be **targeted appropriately**, and 4) coordination should take place **internationally** too. Each of these recommendations, however, should also be considered against the background of the specificities of the euro area, and of the ECB therein, which will also be discussed in greater detail in the next chapters.

In consideration of the features of the pandemic crisis outlined so far, the role, tools and mission of monetary policy are quite remote from the received wisdom of the Great Moderation era – management of short-term interest rates to control inflation and smooth out the business cycle (Borio, 2020). They are not entirely novel, though. The departure from the conventional policies of the 1990s begun with the earlier wave of "exceptional times" brought by the Global Financial Crisis (Pill and Reichlin, 2014; Borio, 2019). As the euro area economy was already living through a period of low inflation and low interest rates, what is certain is that the normal mechanisms to induce the banking systems to support the economy will remain out of order. An extension of **unconventional monetary policies** (UMP) is under way.

As we shall see in the next chapter, this can be done in various forms and techniques, and it depends on the specific needs to be addressed and on the institutional/political constraints on the ECB' room for manoeuvre. Yet, basically, the first pillar is liquidity supply – the time-honoured role of "**lender of last resort**". The canonical one is liquidity supply to banks (normally by repurchasing IOUs issued by the private sector). This can be complemented by direct purchases of corporate bonds bypassing banks. The third sector that can receive liquidity by way of purchases of bonds is the public sector. Eventually, and hypothetically, even the non-business private sector might receive liquidity directly –

an operation dubbed "helicopter money" after Friedman (1969).[11] The second pillar, again targeted to banks, is relaxation of macroprudential regulations and constraints with a view to spurring more risk appetite and credit supply, even at the expense of risk taking in the medium term. Overall, the common aim of these operations is to remove bottlenecks (Wyplosz, 2020), i.e. the red crosses in Figure 2 that interrupt the financial network that gives life to the economy. To the extent that they succeed in preserving or resetting firms' capacity, they also have supply-side effects.[12]

Also, in this case, the euro area is characterised by several national banking and financial sectors, not entirely integrated and prone to segmentation along national borders. This adds an additional layer of complexity for the ECB, especially in case of panic and self-enforcing "**flight to safety**" phenomena not entirely justified by fundamentals (De Grauwe, 2012; De Grauwe and Ji, 2013). UMP in the euro area must also aim at reducing the likelihood and the impact of capital flights, in order to preserve the integrity of those credit and financial markets in the euro area that are still functioning.

These supports, one way or another, imply huge liquidity injections *vis-à-vis* greater debts (or debt swaps). Either liquidity is channelled to the private sector through banks (and the central bank absorbs private debt) or it is intermediated by the public sector (and the central bank absorbs public debt). Which channel is better (or what mix) is open to discussion, provided that all the necessary liquidity is injected into the economy.

Lending of last resort, however, raises the long-lived objection (among others that will be discussed subsequently) that keeping economic units (either private or public) alive by means of liquidity injections interferes with market mechanisms and creates **moral hazard** (undisciplined behaviour on the expectation of being rescued), unless the operation is based on the clear diagnosis that the unit suffers from a temporary liquidity shortage with the exclusion of a permanent insolvency disease. The question is notorious in the euro area where it constitutes a major stumbling block in the way of reforming the governance of the Monetary Union (CEPR, 2018).

In the specific circumstances created by the pandemic, other considerations, beyond moral hazard, take centre stage (Wyplosz, 2020). The goals of safeguarding market mechanisms and inhibiting moral hazard should be balanced against the scale and ramifications of the negative externalities of bankruptcies, which would be extremely large (again, an aspect where the network topology of the system becomes critical: Delli Gatti et al., 2009), and probably accompanied by widespread sense of injustice across society. Again, also in this context, the strategy of "buying time" is essential, but not without risks. On the other hand, it is likely that almost unconditional and ubiquitous lending of last resort will leave a legacy that will have to be dealt with. As we shall discuss in Chapter 3, the ECB managed to find a temporary balance to tackle the pandemic, yet the problem will re-emerge in certain scenarios illustrated in Chapter 4. Moreover, it is unclear how much time will have to be bought, at risk that the longer the duration of the unconventional policies, the more difficult it will be to revert them.

It would also be a mistake to think of policy domains separately: monetary policy concerns money and finance, and fiscal policy concerns the "real economy" only. They are **complements** because both may concur to the task of restoring the functionality of the financial network, by supporting banks' task of liquidity provision and reducing their risk-taking, which in turn lightens the burden of central bank's lending of last resort to financial intermediaries and non-financial firms. This is the case with three

11 Recently "helicopter money" has been used with more elastic and extended coverage of liquidity operations, though the original meaning in Friedman's parable was that of money falling from sky into ordinary people's pockets. Helicopter money has recently received support from authors like Cochrane (2020) and Galì (2020).

12 Supply-side effects of monetary policy are not entirely novel either. They were part of the strand of New Keynesian macroeconomics with capital market imperfections that went astray in the making of the macroeconomics of the Great Moderation (Greenwald and Stiglitz, 1988, 1993; Stiglitz, 2011). Evidence of these effects in the euro area can be found in Passamani and Tamborini (2013).

typical fiscal measures (EEAG, 2020): cancellation, reduction or deferral of **taxes**, **unemployment benefits** and other targeted transfers to households and firms, **public guarantees** for loans to households and firms.

As of July 2020, the overall amount of these measures was above 40% of GDP in Italy and Germany, and almost 30% in France and Belgium (EEAG, 2020, pp. 9-10). About half or more of the packages was accounted for by public guarantees, which will become outlays only to the extent that loans will be nonperforming. So far, public consumption and investment represent a minor share of the overall fiscal stimuli, but growing is the share of resources devoted to finance employee furlough schemes.

As usual, there are no free meals. The other side of these benefits for the real economy and its (private) financial health is a huge increase in **public debt**.[13] Available data (Eurostat) foresee that the debt-to-GDP ratio in the euro area as a whole will rise from 86% in 2019 to 102.7% in 2020. Seven countries (Belgium, Greece, Spain, France, Italy, Portugal and Cyprus) will be above 100%. A similar upsurge of public debt is under way in the rest of the world. The heterogeneous ability of financing and re-financing national sovereign debts across countries affects both the discourse on the economic governance in the euro area and the range of tools the ECB will be able to adopt in the future (we shall expand on this in the next chapters).

Closely related is the problem of safeguarding the **central bank's independence** (Borio, 2020). In the long term, whether public debt is held by the central bank or by market investors, what really represents a threat is the co-called **fiscal dominance**, namely that monetary policy will be dictated by the government's financial needs (e.g. pressures to inflate debt away or to keep interest rates unduly low) to the detriment of price stability, which for the ECB is the primary objective. For example, in the euro area, compliance with the no-bailout clause or an increase in interest rates if necessary to curb inflation could lead some Member States to default on their sovereign debt.

In this connection, a further message to the euro area is that the simple relaxation of budget and debt rules, leaving each country's destiny to its own fiscal capacity, would not be enough. Even in case governments presuming to enjoy enough fiscal space were right (and it is still too early to say), pushing more borderline countries towards their limits of borrowing capacity, or beyond, would disrupt European financial markets, and hence put an excessive burden on the ECB: a remake of the 2010-12 sovereign debt crises on an immeasurable scale.

This concern has contributed to the deployment of resources by the EU to its Member States of an unprecedented scale (European Council, 2020). They are still in the process of being operationally defined or only partly activated, but they will play a role in the near future. Among these, the Support to mitigate Unemployment Risks in an Emergency (SURE) plan is targeted to unemployment benefits, whereas the two most significant instruments, the European Stability Mechanism (ESM)'s COVID credit line (for euro area members) and the EUR 750 billion Next Generation EU (NGEU) package are targeted to specific plans of public expenditure.

The overall monetary-fiscal pandemic scenario raises indeed a number of questions, from the pressure on central banks to monetise public debt, to the demarcation line between monetary-fiscal cooperation and preservation of monetary independence, to the moral hazard question, which are especially thorny for the euro area. Notably, all the measures deployed at the EU-euro area level have been presented as exceptional and temporary programmes to prevent economic collapse and to foster the recovery: yet, they will leave a legacy that questions the possibility to suspend the ongoing

[13] As to private debt, it was already at historical heights in advanced economies before the pandemic, and it will certainly not decline (Borio 2020, Becker et al. 2020).

cooperation and coordination between fiscal and monetary policy. We shall probe into these issues in the next chapters.

In a wider perspective, the pandemic seems to be dragging the euro area into a **trilemma**, already emerged with the crisis of the 2010s, among preserving **euro area integrity**, on one side, and "**monetary orthodoxy**" (the central bank has the single mandate of price stability and cannot finance sovereign debt over the long term) and "**fiscal orthodoxy**" (full national fiscal sovereignty under budget and debt constraints *plus* "market discipline") on the other. When member countries fall under severe economic or financial distress, it is no longer possible to preserve both the twin orthodoxies and the integrity of the euro area because of the activation of self-fulfilling prophecies of risks of breaking up. Either monetary and fiscal orthodoxy, or perhaps both to some extent, should be relaxed.[14] The final agreement on the Commission's proposal of the NGEU package opens to a relaxation of fiscal orthodoxy in order to share some of the burden of the euro area integrity placed on the shoulders of the ECB. Whether these will be extraordinary exceptions to the rule remains to be seen, notwithstanding current official positions, and what growth scenario will materialise once the pandemic will be over, as discussed in Chapter 4, is particularly important.

[14] In this perspective, the move of the ECB into the territory of unconventional monetary policies since 2012 can be viewed as relaxation of monetary orthodoxy *vis-à-vis* the preservation of fiscal orthodoxy by means of "austerity" and the Fiscal Compact.

# 3. NOT ALL QE PROGRAMMES ARE THE SAME: THE PECULIAR FEATURES OF THE PEPP

As pointed out on various occasions by the President of the ECB, Ms Christine Lagarde, and by other Members of the Executive Board of the ECB, the Governing Council's decision to launch a temporary, flexible and intense asset purchase programme of private and public sector securities (i.e., the PEPP) was motivated by economic considerations regarding the "*risks to the monetary policy transmission mechanism and to the outlook for the euro area posed by the outbreak and diffusion of the coronavirus*".[15] The Decision (EU) 2020/440 of the ECB of 24 March 2020 states that:

> "*The PEPP is established in response to a specific, extraordinary and acute economic crisis, which could jeopardise the objective of price stability and the proper functioning of the monetary policy transmission mechanism. Due to these exceptional, fast-evolving and uncertain circumstances, the PEPP requires a high degree of flexibility in its design and implementation compared with the APP and its monetary policy objectives are not identical to that of the APP.*"

As during the Great Recession, the co-movement between falling economic activity and a deflationary drift has removed the dilemma between the commitment to price stability and the support to economic activity: this permits the ECB to pursue its *secondary* statutory objectives, mentioned in Article 3.3 of the TFEU, of "sustainable growth", "full employment" (together with "smooth operation of the payments system" and "financial stability"), without any conflict with its *primary* commitment to maintaining the inflation rate close to, but below, 2% (Claeys, 2020).

Understanding the economic considerations behind this decision, and others to follow, is necessary in order to appreciate the rationale for the Governing Council's decisions as well as the details differentiating the design of the PEPP from that of the expanded APP.

## 3.1. Restoring the monetary and financial network

In the context of the prompt, large and unconditional supports to the economy presented in the previous chapter, we have seen that restoring the functionality of the monetary and financial circuits is of the utmost importance. As a matter of fact, the negative implications of the pandemic in the euro area have been further amplified by a pro-cyclical tightening in financial conditions, with a decline in stock prices, liquidity shortages in the credit system, and an increase in the bond yields.

To fulfil its mandate, the Governing Council decided to adopt new measures to counter the emergence of **liquidity shortages**, to ease the funding conditions of firms and consumers, and to avoid a **segmentation of euro area markets** along the national borders (more on this below). Traditional measures to ease the monetary stance, such as the reduction of short-term policy rates, would have not worked well in such a context, even more considering that policy and market rates were already close to the effective lower level. Not only the crisis hit an area already struggling with subdued inflation pressures and very low interest rates, but also the temporary nature of the pandemic was reducing the effectiveness of changes in short-term policy rates through the expectation channel. Changes in the banks' portfolios towards activities with a higher risk-adjusted return in a deleveraging/contractionary period required significant changes at the very end of the yield curve, as these could have set in motion a broader portfolio rebalancing covering all sectors and jurisdictions. TLTROs and targeted asset purchases under the PEPP were chosen to exert a strong and direct

[15] ECB (2020) "ECB announces €750 billion Pandemic Emergency Purchase Programme (PEPP)", Press release, 18 March 2020.

influence on credit supply and on the entire structure of the yield curve, thereby supporting financial stability and, ultimately, the smooth functioning of the transmission mechanism.

As a complement to the above-mentioned measures, the ECB has also relaxed **bank capital requirements** and the rules on non-performing loans, and collateral requirements on TLTRO in order to increase the commercial banks' lending capacity and to expand the reach of its measures. This move has been motivated by the ECB's willingness not to exacerbate negative loops between banks and financial markets, favouring the adoption of solutions to help temporarily distressed debtors.

Albeit sensible in the heart of the crisis, this choice raises some concerns on the regulatory side of monetary policy. As the latter is tightly connected with conventional and unconventional measures, how the ECB will exit the temporarily relaxed prudential rules will encroach on its attempt to exit temporary and extraordinary asset purchases. This will add up to the regulatory treatment of excessive banks' exposures to domestic sovereign bonds, a particular aspect of the sovereign-bank nexus, to encourage cross-border diversification while limiting risk sharing the euro area level.[16] Unless the ECB is willing to keep most of the assets purchased during the PEPP for a very long time, it will be necessary to ensure that the euro area banking system will contribute to reabsorb part of the public debt without aggravating the forces that are conducive to market segmentation.

## 3.2. Supporting fiscal policy

As said, it is unchallenged that the shock requires a combined reaction by the fiscal and monetary authorities. The Governing Council of the ECB acknowledged explicitly the fact that governments and central banks around the world must take complementary and coordinated actions.

The interpretation of such complementarity is reflected clearly into the feature of the PEPP, whose design, timing and size **match the actual and prospective scale of public (and corporate) debt** issuances, expected in several countries to be so large to create an upward pressure on sovereign yields, worsening even more also the funding conditions for the private sector.[17] The monetary accommodation of such additional and extraordinary issuances of public debt, thus, was deemed necessary to counter the risks of increasing borrowing costs and of crowding out of private investors and consumers.

To ensure that the ECB will not be dragged into direct and indirect budgetary financing in normal times, the Governing Council repeatedly stressed the extraordinary nature of such purchases and its goal of addressing the extraordinary issuances connected with the cost to counter the costs of the pandemic. As mentioned also by the President of the ECB, the new instrument was explicitly "*tailored to manage the staggered progression of the virus*". This relates well with the idea, explained above, that direct purchases of assets were the most effective tools to provide the overall stimulus necessary to support all areas and all sectors of the euro area in a period when normal transmission channels are not available.

Also, it is for this very reason that the Governing Council also established that the consolidated holdings under Article 5 of Decision (EU) 2020/188 of the European Central Bank (ECB/2020/9) should not apply to PEPP holdings, thereby removing issuer and issue limits imposed on the purchases under the APP. It should be noted that the announcement and the deployment of the first tranches of purchases under the PEPP were only partially effective in containing divergence across sovereign spreads; the Franco-

[16] To be considered are, also, the changes in the banking business in response to the pandemic (e.g. greater competition from non-banking intermediaries, digitalisation, home-working) and the limitations to cross-border mergers that may remain in a political environment characterised by renewed nationalistic tensions.

[17] The total gross issuance of sovereign bonds in the euro area between January and mid-July 2020 was close to EUR 1 trillion.

German proposal for a Recovery Fund (18 May 2020) and the expansion of the size of the PEPP by an envelope of EUR 600bn (4 June 2020) were important to lower the yields on the 10-year sovereign bonds. This is a sign that markets were expecting such cooperation between monetary and fiscal authorities and, accordingly, a relaxation of monetary and fiscal orthodoxies, as suggested in the conclusion of Chapter 2.

## 3.3. Keeping the euro area together

Although financial conditions worsened everywhere in the euro area, problems became particularly acute in those sectors and in those jurisdictions that were most exposed to the shock, or whose ability to implement adequate countercyclical policy responses was jeopardised by pre-existing vulnerabilities (in particular, the countries with higher outstanding public debt, with lower expected growth and with weaker banking systems).

If unaddressed, the situation would have led to abrupt and significant portfolio rebalancing and to a self-enforcing "flight to safety" phenomenon, with capital flows moving towards "safer" sectors/countries within the euro area, favoured by substitutability across sovereign bonds, the adoption of the same currency and the absence of capital controls. Such capital flights, in turn, would have worsened the economic outlook (through their negative impact on the productive sectors, the financial markets and the credit institutions), and would have impeded the smooth transmission of monetary policy across jurisdictions. Moreover, the Governing Council subscribes to the view, emerged in the course of the sovereign debt crisis of 2010-12, that there exists a non-fundamental and volatile component of sovereign bond yields, possibly associated with self-fulfilling vicious dynamics, that impairs the smooth transmission of monetary policy, and that needs to be tackled by the authorities.[18] **Stabilizing the financial markets** and implementing the monetary policy stance by means of larger liquidity provision could be interpreted as two sides of the same task, rather than two different objectives, whereas ordinary measures would not have been capable to undo the highly skewed effects of the crisis across sectors and jurisdictions.

This interpretation of the economic and financial situation in the euro area has important consequences for the design of the PEPP. Indeed, it is essential to **guarantee an ample flexibility** in the purchases of securities over time, across asset classes and among jurisdictions, as the ECB aims to ensure that all sectors of the economy and all jurisdictions benefit from the supportive financing conditions necessary to absorb the shock and restart, and to magnify the impact of fiscal policy measures. Accordingly, the asset purchases under the PEPP must cover the entire yield curve and address specifically all those areas, sectors, and jurisdictions that need it the most.[19]

However, fundamentals-driven crisis and expectations-driven turmoils are difficult to distinguish, both *ex ante* and *ex post*. Divergent assessments of the extent to which asset prices or interest-rate spreads reflect fundamentals are normal and legitimate.[20] The Dutch central bank Governor Klaas Knot has

[18] "*Liquidity provision and asset purchases by central banks can limit self-fulfilling overshooting dynamics and the associated risks to financial stability… In the absence of active market stabilisation by the central bank, the intrinsic self-validating nature of flight-to-safety dynamics creates the risk of asset price movements and cross-border financial flows that, in terms of their magnitude, are unwarranted by fundamentals, but that also reflect a switch across multiple self-fulfilling beliefs-driven equilibria*" (Lane 2020b). Examples of the relevant literature are De Grauwe (2012), De Grauwe and Ji (2013).

[19] The Decision (EU) 2020/440 of the European Central Bank of 24 March 2020 states: "*A flexible approach to the composition of purchases under the PEPP is nonetheless essential to prevent current dislocations in the aggregate euro area sovereign yield curve from being translated into further distortions in the euro area risk-free yield curve, while also ensuring that the overall orientation of the programme covers all jurisdictions of the euro area.*"

[20] Many analysts, for instance, are convinced since long ago that the ECB's bond buying programmes and 'buyer of last resort' status keep Italian bond spreads tighter than they should be based on debt and growth fundamentals. In the special circumstances created by the pandemic, however, it is hard to deny that the ECB could not but act as a market stabiliser, also in the attempt to crowd-in private investors and limit the escalation of vicious self-feeding circles.

repeatedly warned against the creation of a "**central bank put**", for the potential distorting effects it may have in financial markets. This issue is bound to re-emerge in the future, especially in the case of a promising economic recovery in the majority of euro area countries. Moreover, as the APP will be continued for a while in parallel with the PEPP and until the inflation outlook improves considerably, a prolongation and expansion of the PEPP over time would risk jeopardising the very difference between the two programmes, namely the temporary, targeted and exceptional nature of the PEPP.

Finally, as pointed out in passing by Lilley and Rogoff (2019), due to the fact that the ECB has no unique fiscal counterpart in the euro area, its QE is effectively a means to issuing a short-term synthetic Eurobond and to purchasing national debts. The ECB does not only transform long-term government debt into short-term ECB's liabilities, as all central banks do, but it also transforms the "national identity" of the liabilities. This has greatly contributed to the effectiveness of the ECB's QE during the PEPP (and before), but it is also the very aspect that concerns most those who believe that moral hazard issues should remain high in the policy agenda. This also represents a crucial problem in the definition of the ECB strategy and in the continuation of QE in the future.

## 3.4. Putting moral hazard on hold

It is undeniable that the PEEP raises a problem of moral hazard, that is obviously accentuated by the concomitant announcement of a programme of fiscal transfers in favour of the more vulnerable countries (the NGEU).[21] ECB officials regard moral hazard less of a concern by stressing that the pandemic shock is "*exogenous, detached from economic fundamentals and affecting all countries in the euro area*." (Lagarde, 2020b).

Actually, although the origin of the current crisis is truly due to an event beyond the control of governments, its heterogeneous effects and implications depend also on how national and local authorities react to the pandemic. Furthermore, the capacity of the different governments to respond to the crisis is heavily conditioned by the fiscal space they have, which is in its turn negatively correlated with their outstanding public debt-to-GDP ratio, whose pre-pandemic level was the result of previous national policies. In this respect, the current crisis confirms that keeping public debt at high levels is a source of vulnerability, since when events with low probability but high impact do strike, the tension between the necessity of a large fiscal stimulus and debt sustainability is exacerbated (Borio; 2020).

Hence, in the presence of huge differences in terms of fiscal buffers among euro area countries, a programme of massive purchases of government bonds by the ECB does not have the same relevance and urgency for all countries, even when the adverse shock is common to the entire currency union and the purchases are allocated in accordance to the capital key, since they provide relief particularly to the more vulnerable countries such as the Southern European ones (financial markets promptly registered this asymmetry by reducing interest differentials among euro area government bonds after the PEPP announcement).

The European institutions have righty judged that in the present circumstances the moral hazard concern is strictly dominated by the risk that, without a strong policy response at the European level, the pandemic could even lead to an implosion of the euro area (see also paragraph 2.5). Consistently, one can interpret the insistence whereby the European authorities emphasised the extraordinary and temporary nature of such programmes as a way to minimise their moral hazard implications.

In particular, in the case of the PEPP, the Governing Council established that:

[21] In the future, the argument goes, the experience of these programmes may induce some countries to act less prudently in the anticipation of assistance in the case of large adverse shocks on the part of the European institutions and the more solid member countries.

(i) the asset purchases will be temporary, contingent to the crisis and exceptional;

(ii) allocations will be guided by the capital key, even though only over the medium term;

(iii) the programme will ensure only a limited extent of risk sharing, according to the APP rules;

(iv) the Governing Council has established a clear (though reviewable) net purchase horizon (i.e., June 2021) for the PEPP, whereas the APP will continue to have a contingent horizon (i.e., "*for as long as necessary to reinforce the accommodative impact of its policy rates, and to end shortly before it starts raising the key ECB interest rates*").

Notably, the recent decision of the German Federal Constitutional Court on the proportionality of the PSPP may, to a certain extent, strengthen the case for not stretching too far the adoption of instruments developed to achieve specific, contingent and temporary objectives.

# 4. THE CHALLENGES AHEAD

Obviously, future developments are shrouded in uncertainty, depending predominantly on how the pandemic will evolve, and how the economies will move in the hypothetical post-pandemic future, if and when an efficacious vaccine will be available for mass administration, and similar non-economic factors. The prevailing guess is that by mid-2021, the deadline set by the Governing Council for the PEPP, some of this uncertainty will have cleared and – hopefully – that by the end of 2021/first half of 2022 the pandemic will be over.[22] Accepting this outlook as the most likely, still there remain some open issues that will affect future policymaking: once the situation normalises after the rebound, will inflation remain close to zero or will it grow above the target? What growth regime will take place after the rebound in the euro area? As anticipated, in this chapter we discuss to what extent the QE programme and other UMP measures will be state-contingent and, for the time being, hardly predictable.

Looking at the overall picture of output, employment, wages and prices, most of the current conjectures revolve around two main post-pandemic scenarios, one with **fast recovery and pick up of inflation**, one with **slow recovery and stagnation** (e.g. EEAG, 2020; Mann, 2020).

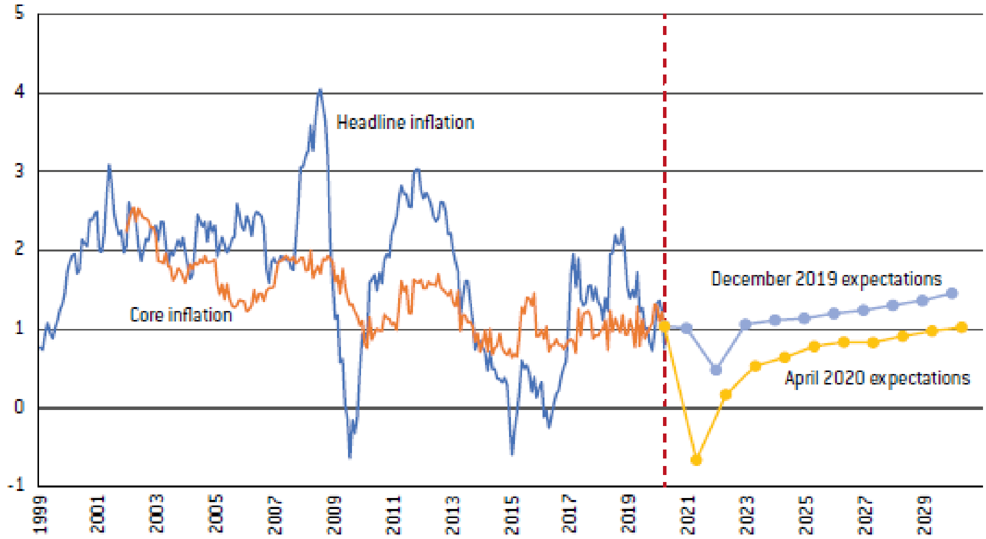
## 4.1. Scenario 1: Fast recovery and pick up of inflation

The post-lockdown restart of economic activity is in the current data, but it may easily confound a temporary rebound with a stable recovery. The optimistic outlook rests on the presumption that the bulk of the recession has been due to the lockdown, and that the extent and timeliness of the monetary and fiscal supports have limited the damages. As a matter of fact, the most severe lockdown measures are being lifted everywhere in the euro area, and hence it is quite natural that, starting from the third quarter of 2020, we will observe a string of sizeable macroeconomic improvements quarter-on-quarter. The overall result, however, may not deliver a complete and long-lasting return to normality, bearing in mind that economic normality will only be achievable once sanitary normality will be firmly re-established.

In the first place, it is necessary to clarify what "normality" means in this context. As already recalled in Chapter 3, the pre-pandemic euro area economy was still muddling through the long-term repercussions of the Great Recession. So, even in the most optimistic case of quick reabsorption of the pandemic shock, it is likely that the ECB will still be facing the pre-COVID fragile macroeconomic outlook that discouraged a resolute normalisation of monetary policy. There is wide agreement that accelerating inflation is not an immediate threat for the euro area. Actually, the inflation outlook remains weak and below the target (see Figure 3). If one considers the estimated impact of asset purchases in the pre-pandemic period, the APP and PEPP would have to be expanded further to push inflation to the desired path.

[22] According to a recent statement by the World Health Organization, it is reasonable to expect a return to normal sanitary conditions in about two years. It is highly unrealistic that everybody will agree upon the time in which the pandemic can be considered over. Some disagreement and uncertainty about the end date of the COVID-19 emergency will be unavoidable.

Figure 3: Euro-area inflation, core, headline and market expectations (y-o-y, %)




Source: Claeys (2020).

Also, countries that in the aftermath of the Great Recession have experienced faster recovery of growth and employment, struck scholars and policymakers with the **"missing inflation" puzzle** (Hooper et al., 2019), which relates to the broader debate about the "flattening" of the Phillips Curve, the weak reaction of inflation to the business cycle. Some scholars hold the view that this is a long-lasting phenomenon due to structural changes in the labour markets, in the wage-price setting practices, and in international trade mostly induced by globalisation.[23] In this case, the QE programme is likely to remain in the ECB's toolbox as part of a larger set of UMP (among which negative interest rates).

Alternatively, it is possible that the pandemic crisis has somehow undermined the conditions that kept the Phillips curve flat and that – when the pandemic will be over – the large amount of money available will feed inflation, boosted by supply-side forces such as: the acceleration of the reversal of globalisation and re-nationalisation of supply chains that may push production costs up (see Chapter 2).[24] The protection of incumbent firms and workers, together with the restrictions to takeovers for corporate control decided during the pandemic, and with the diminished competition of emerging economies' producers because of de-globalisation, may restore some of the pricing power that firms and labour have lost over the last decades.

If this will be the case, a quick and sustained recovery may be accompanied by a pick up of inflation. A number of commentators have argued that some moderate inflation (something above the 2% threshold) should be tolerated for a while, since it would erode the real value of the huge private and public debts accumulated in these years, thus helping firms and governments to service them without jeopardising the anti-inflationary credibility of the major central banks. However, if inflation does take hold, the ECB will face the trade-off between sustaining economic activity and its primary mandate of

[23] Soon before the outbreak of the pandemic, in the perspective of the review of policy strategy of the ECB, the argument of the structural flattening of the Phillips Curve was put forward to suggest that the ECB should revise its inflation target downwards instead of keeping on chasing the 2% target (e.g. Gros 2019). See Bini Smaghi (2020) and Tamborini (2020) for alternative views.

[24] As Eichengreen (2020) writes, "*supply chains will have to be restructured in ways that make production costlier. Even if they have to pay more, firms will produce closer to home, whether because of their heightened recognition of the risks of relying on far-flung operations, or in response to political arguments for achieving national self-sufficiency in the provision of essential goods. For firms, enhanced security and certainty will mean higher costs and lower productivity, which will translate into higher prices for consumers*".

preserving price stability. In this case, two would be the most worrisome legacies of the pandemic programmes (EEAG, 2020, sec.3; Borio, 2020).

The first is the extra-large build-up of monetary base in the Eurosystem, that ought to be unwound at high speed. The other is the nexus between low interest rates and high public and private debts. The inevitable rise of interest rates to rein in inflation would make large fractions of outstanding debts unsustainable, with heavy negative repercussions on financial and economic stability.[25] Hence this scenario may turn into a **stagflationist one**, that is a situation in which some inflation coexists with a depressed activity. The conflict between primary and secondary statutory objectives of the ECB would become blatant, and quite dramatic. The continuation of broad QE programmes will be particularly controversial in such an environment. Technically, the ECB could still focus its purchases on those assets and jurisdictions that need it the most, as already done with the PEPP; politically, however, this is hardly sustainable: the economic rationale justifying the features of the PEPP will not hold anymore and concerns with moral hazard will dominate again the discourse.

## 4.2. Scenario 2: Slow recovery and stagnation

Various reasons are put forward to warn that it will take time to overcome the consequences of the pandemic, and that the post-pandemic economies will look very much like those with anaemic growth and deflationary pressures of the 2010s, if not worse, rather than those of the 1990s (Krugman, 2020).[26]

In the first place, it is reasonable to think that the pandemic will have persistent depressive effects on the propensity of households and enterprises to consume and invest, especially because many people will be inclined to overestimate the likelihood of a repetition of similar disruptive events. In this case, zeroing of interest rates, tax cuts and subsidies will not be enough to boost private sector's demand, whose decline can barely be offset by the increase in public spending.

In addition, there are supply-side forces that may obstacle a quick and sustained recovery:

(i) Reopening will not find the same economy as the one before the lockdown: some of the locked down businesses may not survive (in spite of public aids), while the unlocked portion of the economy may bless some and damn others. The composition of final demand will be changed, thus leading to the shrinking of some sectors and the expansion of others. Relocation will take place on a large scale, in a vast and uncertain process of re-organisation of personal, economic, and financial networks (Barrero and Davis, 2020).

(ii) Debt overhang, created to keep economic activity afloat, may surely be added to the forces that hinder, rather than boosting, a fast recovery of economic activity (Becker et al., 2020). Under counterparty or market pressures, debtors' priority is not to spend but to save and repay debt, feeding so-called "**deleveraging**" or "balance-sheet recessions" (Koo, 2011). This situation creates a trade-off not with inflation, but with debt restructuring (Becker et al., 2020). Pre-emptive debt restructuring may clear the stage for recovery, but if it is enacted too fast and too early it may obtain the opposite result, as warned by the 2011-12 second recession in the euro area.

Among longer-term forces, with important consequences for monetary policy, is the **tendential fall of the "neutral" rate of interest,** that is the real interest rate such that the economy enjoys full

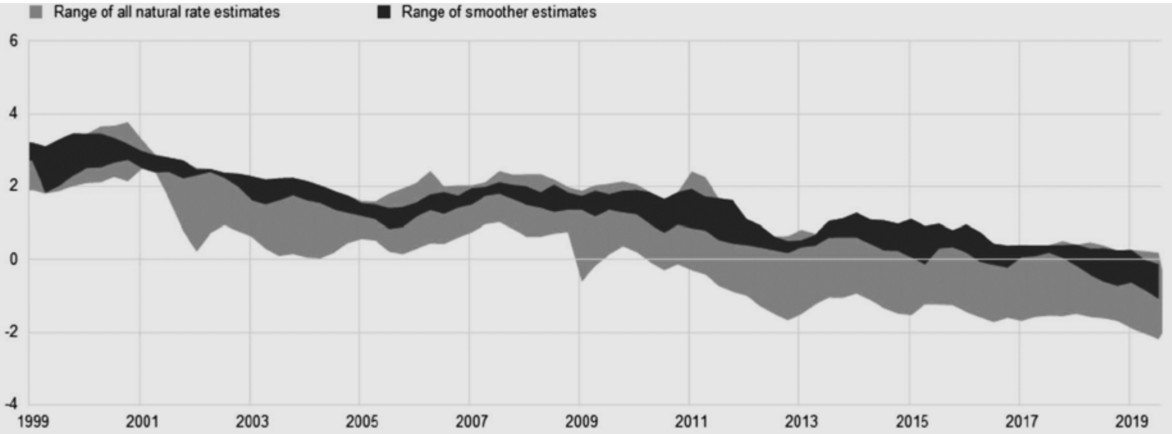
[25] This situation would remind the Volcker "monetarist experiment", i.e. the sharp anti-inflationary monetary contraction that the then chairman of the US Federal Reserve enacted between 1980-81. The EZ countries with debt overhang would then find themselves in the position of the developing countries that were driven into default by the escalation of interest rates.

[26] This view relates to the debate on the so-called "secular stagnation": see e.g. Teulings and Baldwin (2014).

employment of labour and capital, and stable prices.[27] Given the inflation target, the policy rate should track the neutral rate, for any misalignment would destabilise output and inflation. Consequently, low or near zero policy rates are not a vagary of the central bank, but a necessity dictated by the ruling economic forces (Draghi, 2016, Yellen, 2014).

Yet this prescription encounters serious problems when the neutral rate falls into negative territory, which is confirmed by a whole strand of empirical literature exemplified by the euro area estimates presented by Lane (2020a) (Figure 4). With negative neutral rate, even zeroing the nominal interest rate may be unable to pull the economy out of depression states with output and inflation below targets (often called "**liquidity traps**" after Keynes).[28] If the fall of post-epidemic returns to capital found in history by Jordà et al. (2020) materialises again, then the conjecture that the pandemic will aggravate these tendencies has some grain of truth.

Figure 4: Econometric estimates of the euro area neutral rate




Source: Lane (2020a).

In this scenario in which the abundant liquidity created in these years tends to stay frozen inside the financial system, the inflation outlook remains tilted downwards, with a clear pandemic shift, as shown by Figure 3. The entrenchment of low inflation, or deflation, forecasts is a well-known problem that the ECB has been monitoring since the post-crisis depression of the mid 2010s, considering the so-called "**deanchoring of inflation expectations**" from the central bank's target as the main driver of the euro area deflationary drift (Draghi, 2014, 2016).

Such a state of affairs will call for continuation of the variety of UMP and QE programmes that we have seen hitherto. Yet, in the stagnationist view, these are not seen as extraordinary instruments for extraordinary times, but the necessary toolkit for the "**new normal**" times – at least as long as the underlying forces do not change. A further implication is that coupling monetary and fiscal policy also becomes a necessity, which gives rise to the perspective of the system becoming **addicted to permanent stimuli** (Krugman, 2005, 2020).

With regard to this, it is worth remarking that critics of QE polices emphasise that their prolonged adoption has **no positive impact on long-run growth**, since the support that they provide to the price

[27] This is also called "natural" interest rate, as it was first named by Wicksell (1898). A key assumption of this theory is that the central bank has no control over the neutral rate, which, at least in the medium to long run, is determined by real structural factors (such as propensity to save, factor endowments and productivity, demographic trends).

[28] With the inflation target at 2%, the central bank can manoeuvre the policy rate above zero only insofar as the natural rate is above -2%.

of financial assets does limit drastic adjustments of asset prices and massive defaults of highly indebted entities, but at the *cost of not encouraging investment in risky productive assets: portfolio adjustment moves money away from corporate and government bonds, but not towards investment in production and employment.*

As to the interface with fiscal policy, the abundance of cheap money and the consequent temporary softening of governments' budget constraint obtained thanks to the QE programmes is double-edged in terms of long-run growth and debt sustainability. On the one hand, governments may be allowed to undertake growth-enhancing investments (such as those in critical infrastructures or basic research) that for a long time have been postponed because of fiscal consolidations. On the other hand, they may be induced to increase public spending or cut taxes in order to avoid the social and political costs associated to bankruptcies and job losses, neglecting the longer-term and largely invisible costs due to inefficiencies and misallocation of resources, and avoiding those structural reforms that - although unpopular - have been repeatedly suggested by the European and other supranational institutions over the years.[29] The result would be an increase in public debt without strengthening the growth potential of the economy, to the detriment of debt sustainability. Difficult to say which of the two tendencies will prevail in any specific country, but it is likely that the outcome will be heterogeneous across the euro area countries. In Europe, it may help a severe monitoring by the EU institutions on the use that governments will do of the money they will get from European programmes. However, it will ultimately depend on a country's political system and the extent to which its public opinion is sensitive to populist arguments.

In the perspective of "addiction" to monetary-fiscal coupling, as Claeys (2020) rightly points out, the issue is not so much the build-up of monetary base in the Eurosystem during the pandemic crisis. A large balance sheet will not deprive central banks of control over short-term interest rates and their ability to influence the benchmark risk-free yield curve. What may be seen at stake is the ECB's independence *vis-à-vis* **fiscal dominance** (see also paragraph 2.5), also in consideration of the fact that for the ECB price stability is the primary objective, which may become conflictual with the pressure to avoid sovereign debt crises across the euro area. Even though macroeconomic concerns may fully justify the continuation of QE programmes in the euro area, the political economy of such interventions will likely become more complicated, because of the risks and the implicit fiscal transfers that they entail, with limited conditionality.

## 4.3. Scenario 3: The ECB's "worst-case" scenario

The ECB will face even more demanding challenges compared to those faced by other central banks, due to the fact that its jurisdiction is characterised by **deep structural disparities**, and above all (and this is unique to the ECB) that it is the monetary authority of 19 sovereign states, which makes its decisions inevitably politically sensitive and potentially divisive along national lines. If now, with the pandemic still not over, and with the PEPP and NGEU programs being implemented, differences and tensions seem to have quieted down, it is to be expected that they will re-emerge when we shall return to some normality.

This might be the case, especially if at the end of 2021/first half of 2022 there will be signs of an asymmetrical recovery, with growth in the euro area's most vulnerable countries lagging behind that in the core countries, and the necessity on the part of the ECB to start some tapering (i.e., to reduce the new purchases of assets) after the end of the COVID emergency. It is very unlikely that in this scenario

[29] See Bonatti and Fracasso (2019) for a formal setup modeling situations where a government may be induced to not undertake structural reforms even when the society at large would benefit from their introduction.

the countries in trouble could rely on new fiscal transfers from the European partners beyond those already included in the NGEU, due to the foreseeable opposition of the core countries to make permanent a system of substantial subsidies in favour of the peripheral members of the euro area. In these circumstances, a confidence crisis concerning the public debt sustainability of one or more peripheral countries becomes possible, with the consequent flight to safety and risk of contagion, particularly if it will be evident that in these countries there are missing the political conditions for a fiscal consolidation and the implementation of effective growth-enhancing reforms. The ECB would therefore be faced with the difficult choice of whether to support the debt of the countries in trouble, through purchases of their government bonds well beyond what the capital key prescribes, even in the absence of a clear political commitment by their governments to undertake a drastic adjustment programme (as prescribed by the OMT), or to expose the euro area to a crisis that might lead to its implosion. Obviously, there is no certainty that the "worst-case" scenario outlined here will materialise, but it is appropriate that the European policy makers be well aware that it is – if not probable – fully possible.

# 5. CONCLUDING REMARKS

If the glimpse into the future outlined above has some grain of truth, the reasons for carrying UMP forward will prevail in the advanced economies, and in the euro area, beyond the end of the pandemic, but in all cases political-economy considerations will determine the extent and the duration of QE programmes. All the scenarios that we have considered, moreover, may draw the ECB into unchartered waters. The fundamental reason being that the pandemic will hardly heal the euro area's structural and institutional weaknesses inherited from the past.

We have seen how the COVID-19 pandemic induced the ECB to adopt a set of emergency measures. In parallel, the Stability and Growth Pact was suspended, and the EU approved a number of programmes that for the first time have determined substantial fiscal transfers among countries belonging to the Union. As a result of all this, the euro area countries – even the most vulnerable among them – could enlarge their government deficits practically without limits in order to face the emergency, without losing market confidence on the sustainability of their public debt.

The monetary authority has been careful in making clear that those measures are temporary and closely linked to the COVID-19 emergency. This should be interpreted as meaning that – once the pandemic will be definitely over – the amount of government debts purchased by the Eurosystem (exceptionally large in the midst of the pandemic) will be drastically reduced, these purchases will be again strictly subject to capital keys and tightly constrained by issuer limits, interventions on the market to support the bonds issued by countries in trouble will be conditional on their formal commitment to undertake fiscal consolidations and structural reforms, and the ECB fully free to raise – if needed – short-term interest rates without being restrained by the fiscal problems of some Member States. Altogether, this would imply that the trilemma whereby we concluded Chapter 2 (one can have only two among preserving "euro area integrity", "monetary orthodoxy" and "fiscal orthodoxy"), which was deactivated because of the pandemic, will be binding again. We claim that this trilemma may become existential.

However, we are also aware that the credibility of the ECB, a central bank which has to operate in a context characterised by multiple sovereign states, hangs on the capacity of the set of formal and informal guidelines shaping its conduct to dissipate any suspicion that it could fall prey of some form of fiscal dominance. And the COVID-19 emergency has shown how essential is for a central bank to preserve this credibility: since "*it is precisely what has allowed central banks to take such extraordinary actions during this crisis*" (Borio, 2020). If it is possible – and above all how it would be possible – to set a framework more able than the current one to guarantee this credibility, minimising at the same time the risk of existential crises in the euro area, is an open question. We believe that, especially in the light of the lasting changes that the pandemic will bring about, it is worth addressing this question and rethinking guidelines and strategies shaping the ECB's policies.

Such a rethinking cannot be disjoined from a public discussion about possible updates of those parts of the EU Treaties that regulate the functioning of the euro area. It is apparent that this discussion is intrinsically political, before being technical or juridical. Intellectual contributions to this discussion are precious and urgent.

# REFERENCES


- Baldwin R. (2020), *It's not Exponential: An Economist's View of the Epidemiological Curve*, *Vox-EU*, 12 March.
- Baldwin R., Weder Di Mauro B. (eds., 2020a), *Economics in the Time of Covid-19*, London, CEPR Press, www.cepr.org.
- Baldwin R., Weder di Mauro B. (eds., 2020b), *Mitigating the COVID Economic Crisis: Act Fast and Do Whatever It Takes*, London, CEPR Press, www.cepr.org.
- Baldwin R., Tomiura E., (2020), *Thinking Ahead About the Trade Impact of Covid-19*, in Baldwin R., Weder Di Mauro B. (eds., 2020a), pp. 59-72.
- Baqaee D. R., Farhi E. (2020), *Supply and Demand in Disaggregated Keynesian Economies with an Application to the Covid-19 Crisis*, CEPR Discussion Paper No.14743.
- Barba Navaretti B., Calzolari G., Dossena A., Lanza A., Pozzolo A.F. (2020), *In and Out Lockdowns: Identifying the Centrality of Economic Activities*, Covid Economics: Vetted and Real-Time Papers 17.
- Barrero J., Davis S. J. (2020), *COVID-19 is Also a Reallocation Shock*, NBER Working Paper No. 27137.
- Barro R., Grossman H.I. (1970), *A General Disequilibrium Model of Income and Employment*, *American Economic Review*, 61, pp. 82-93.
- Beck T. (2020), *Finance in the times of Coronavirus*, in Baldwin R., Weder Di Mauro B. (eds., 2020a), pp. 73-76.
- Becker B., Hege U., Mella-Barral P. (2020), *Corporate Debt Burdens Threaten Economic Recovery After COVID-19: Planning For Debt Restructuring Should Start Now*, *Vox-EU*, 21 March.
- Belke, A., Göcke M., (2019) *Interest Rate Hysteresis in Macroeconomic Investment under Uncertainty*, Ruhr Economic Papers, No. 801.
- Bini Smaghi L. (2020), *Is the ECB at Risk of Becoming an Underachiever?*, LUISS 'Guido Carli', School of European Political Economy, Policy Brief, n. 1.
- Bonadio B., Huo Z., Levchenko A .A., Pandalai-Nayar N. (2020), *Global Supply Chains in the Pandemic*, NBER Working Paper No. 27224.
- Bonatti L., Fracasso A. (2019), *Policy Inertia, Self-Defeating Expectations and Structural Reforms: Can Policy Modeling Cope?*, *Journal of Policy Modelling*, 41, pp. 943-962.
- Borio C. (2012), *The Financial Cycle and Macroeconomics: What Have We Learnt?*, BIS Working Paper, n. 395.
- Borio C. (2019), *Central Banking in Challenging Times*, BIS Working Papers, n. 829.
- Borio (2020), *The Covid-19 Economic Crisis: Dangerously Unique*, Speech at the National Association for Business Economics, 2 July.
- Brock W. A., Colander D. (2000), *Complexity and Policy*, in Colander D. (ed.), *The Complexity Vision and the Teaching of Economics*, Aldershot, Elgar.
- Centre for European Policy Research (2018), *Reconciling Risk Sharing with Market Discipline: A Constructive Approach to Euro Area Reform*, CEPR Policy Insight, n. 91.

- Claeys G. (2020), *The European Central Bank in the Covid-19 Crisis: Whatever It Takes, Within Its Mandate*, Bruegel, Policy Contribution, No. 9.
- Cochrane J. H. (2020), *Coronavirus Monetary Policy*, in Baldwin R., Weder Di Mauro B. (eds., 2020a).
- Coibion O., Gorodnichenko Y., Weber M. (2020), *Labor Markets During the Covid-19 Crisis: A Preliminary View*, NBER Working Paper No.27017.
- Colander D., Howitt P., Kirman A., Leijonhufvud A. Meherling P. (2008), *Beyond DSGE Models: Toward an Empirically Based Macroeconomics,* Papers and Proceedings of the American Economic Association, American Economic Review, 98, pp. 236-240.
- De Grauwe P. (2012), *The Governance of a Fragile Eurozone*, Australian Economic Review, 45, pp.255-268.
- De Grauwe P., Ji Y. (2013), *Self-fulfilling Crises in the Eurozone. An Empirical Test*, Journal of International Money and Finance, 34, pp. 15-36.
- Delli Gatti D., Gaffeo E., Gallegati M., Desiderio S., Cirillo P. (2011), *Macroeconomics from the bottom-up*, Berlin: Springer.
- Delli Gatti D., Gallegati M., Greenwald B., Russo A., Stiglitz J.E. (2009), *Business fluctuations and bankruptcy avalanches in an evolving network economy*, Journal of Economic Interaction and Coordination, 4, pp.195–212.
- Dixit A. (1992), *Investment and Hysteresis*, Journal of Economic Perspectives, 6, pp.107-132.
- Dixit A.K., Pindyk R.S. (1994), *Investment under uncertainty*, Princeton University Press, Princeton, N.J.
- Draghi M. (2014), *Unemployment in the Euro Area*, Speech at the Annual Central Bank Symposium in Jackson Hole, August 22.
- Draghi M. (2016), *How Central Banks Meet the Challenge of Low Inflation*, Marjolin Lecture, SUERF Conference, Deutsche Bundesbank, Frankfurt, February 4,
- Eichengreen B. (2020), *The Human-capital Costs of the Crisis*, Project Syndicate, 10 April.
- Elliott M.L., Goyal S., Teytelboym A. (2019), *Networks and Economic Policy*, Oxford Review of Economic Policy, 35, pp. 565–585.
- European Council (2020), *Conclusions of the Special Meeting of July 17-21*, Brussels.
- European Economic Advisory Group (2020), *Europe's Pandemic Politics*, EEAG Policy Brief, July.
- European Parliament (2015), *ECB Quantitative Easing (QE): What Are the Side Effects*, Directorate-General for Internal Polices, Monetary Dialogue, June.
- European Parliament (2016), *Effectiveness of the ECB Programme of Asset Purchases: Where Do We Stand?*, Directorate-General for Internal Polices, Monetary Dialogue, June.
- European Parliament (2017), *Extending Quantitative Easing: Are there Additional Risks for Financial Stability?*, Directorate-General for Internal Polices, Monetary Dialogue, February.
- European Parliament (2019), *Task Ahead: Review of the ECB's Monetary Policy Strategy*, Directorate-General for Internal Polices, Monetary Dialogue, December.
- Fracasso A., Nguyen H. T. T., Schiavo S. (2018), *The Evolution of Oil Trade: A Complex Network Approach*, in Network Science, 6, pp. 1-26.

- Friedman M. (1969), *The Optimum Quantity of Money and Other Essays*, Chicago: Chicago University Press, pp. 1–50.
- Galì J. (2020), *Helicopter Money: The Time is Now*, in Baldwin R, Weder di Mauro B. (eds., 2020b), pp. 57-62.
- Greenwald B. C., Stiglitz J. E. (1988), *Imperfect Information, Finance Constraints and Business Fluctuations*, in Kohn M, Tsiang S. C.(eds.), *Finance Constraints, Expectations and Macroeconomics*, Oxford, Oxford University Press.
- Greenwald B. C., Stiglitz J. E. (1993), *New and Old Keynesians*, Journal of Economic Perspectives, 7, pp. 23-44.
- Gros D. (2019), *Global Trends in Inflation: Are Central Banks Barking up the Wrong Tree?*, European Parliament, Monetary Dialogue, September.
- Haldane A. (2009), *Rethinking the Financial Network*, Speech delivered at the Financial Student Association, Amsterdam, Bank of England, mimeo.
- Hooper P., Mishkin F. S., Sufi A. (2019), *Prospects for Inflation in a High Pressure Economy: Is the Phillips Curve Dead or Is It Jus Hibernating?*, NBER Working Paper Series, n. 25792.
- Hassler K., Storesletten R. (2020), *Economic Policy Under The Pandemic: A European Perspective*, Vox-EU, 7 July.
- Jordà O., Singh S. R., Taylor A. M. (2020), *Longer-Run Economic Consequences of Pandemics*, NBER Working Paper No. 26934.
- Koo R. (2011), *The World in Balance Sheet Recession: Causes, Cure, and Politics*, Real-World Economics Review, n. 58.
- Krugman P. R. (2005), *Is Fiscal Policy Poised For a Comeback?*, Oxford Review of Economic Policy, 21, pp. 515-523.
- Krugman P. R. (2020), *The Case for Permanent Stimulus*, in Baldwin R., Weder Di Mauro B. (eds., 2020b).
- Lagarde C. (2019), *Hearing at the Committee on Economic and Monetary Affairs of the European Parliament*, Brussels, 2 December.
- Lagarde C. (2020a), https://twitter.com/lagarde/status/1240414918966480896, 19 March.
- Lagarde C. (2020b), *Our response to the coronavirus emergency*, The ECB blog, 19 March.
- Lagarde C. (2020c), *How the ECB is helping firms and households*, The ECB Blog, 9 April.
- Lane P. R. (2020a), *The monetary policy toolbox: evidence from the euro area*, Keynote speech at the 2020 US Monetary Policy Forum, New York, 21 February.
- Lane P. R. (2020b), *The market stabilisation role of the pandemic emergency purchase programme*, The ECB blog, 22 June.
- Leijonhufvud A. (2007), *Monetary and Financial Stability*, Lectio Magistralis, University of Trento, October 1; CEPR Policy Insight, n. 14.
- Lilley A., Rogoff K. (2019), *The Case for Implementing Effective Negative Interest Rate Policy*, *Strategies for Monetary Policy*, Stanford: Hoover Institution Press.
- Malinvaud E. (1977), *The Theory of Unemployment Reconsidered*, Oxford, Clarendon Press.

- Mann C. L. (2020), *Real and Financial Lenses to Assess the Economic Consequences of COVID-19*, in Baldwin R., Weder Di Mauro B. (eds., 2020a).
- Miyazaki K., K.G. Nishimura, and M. Saito (2004), *Incomplete Financial Markets, Irreversibility of Investment, and Fiscal and Monetary Policy Instruments*, Hitostubashi University, Tokyo.
- Passamani G., Tamborini R. (2013), *Monetary policy through the "credit-cost channel". Italy and Germany pre- and post-EMU*, Applied Economics, 45, pp. 4095-4113.
- Pill H., Reichlin L. (2014), *Exceptional Policies for Exceptional Times: The ECB's Response to the Rolling Crises of the Euro Area, and How It Has Brought Us Towards a New Grand Bargain*, CEPR Discussion Paper No. 10193.
- Saltari E., Ticchi D. (2007), *Risk Aversion, Intertemporal Substitution, and the Aggregate Investment–Uncertainty Relationship*, Journal of Monetary Economics, 54, pp. 622-648.
- Schiavo S., Sartori M. (2015), *Connected we stand: A network perspective on trade and global food security*, in Food Policy, 57, pp. 114-127.
- Stiglitz J.E. (2011), *Rethinking Macroeconomics: What Failed, and How to Repair It*, Journal of the European Economic Association, 9, pp. 501-645.
- Tamborini R. (2020), *Beware of pitfalls in the Review of Policy Strategy of the European Central Bank*, LUISS 'Guido Carli', School of European Political Economy, Policy Brief, n. 5.
- Teulings C, Baldwin R. (eds. 2014), *Secular Stagnation: Facts, Causes and Cures*, London, CEPR.
- Vaitilingam R. (2020), *Likelihood of a Coronavirus Recession: Views of Leading US and European Economists*, Vox-EU, March 14.
- Wicksell, K. (1898), *Geldzins und Güterpreise. Eine Untersuchung über die den Tauschwert des Geldes bestimmenden Ursachen*. Jena, Gustav Fischer; Eng. tr.: Interest and Prices. A Study of the Causes Regulating the Value of Money, London, Macmillan, 1936.
- Wyplosz C. (2020), *So Far, So Good: And Now Don't Be Afraid of Moral Hazard*, in Baldwin R, Weder di Mauro B. (2020b), pp. 25-30.
- Yellen J. (2014), Senate Hearing, 11 February 2014, House Financial Services Committee Hearing on Federal Reserve Semi-Annual Monetary Policy Report to Congress.

We present the set of measures that the ECB has undertaken to fight the pandemic crisis by outlining the deep impact that COVID-19 is having on economic structures, and by highlighting the differences between the current policy package and previous ECB's programmes. Moreover, we discuss what are the challenges that await the ECB in the medium to long run, contingent on different post-COVID scenarios concerning economic growth and inflation, considering its peculiar multinational jurisdiction.

This document was provided by Policy Department A at the request of the Committee on Economic and Monetary Affairs (ECON).

PE 652.740
IP/A/ECON/2020-34

PDF ISBN 978-92-846-7091-8 | doi:10.2861/104693 | QA-03-20-607-EN-N