PERSPECTIVES ON THE ECB'S MONETARY POLICY STRATEGY REVIEW



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Editors

Ildeberta Abreu João Valle e Azevedo

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The analyses and opinions expressed herein are those of the authors and do not necessarily coincide with those of the Banco de Portugal or the Eurosystem

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Foreword

Mário Centeno, Governor

The review of the monetary policy strategy of the European Central Bank (ECB) is of the utmost importance for the ongoing debate on the deepening of the economic and monetary union. Shortly after inception, the euro and its monetary policy faced remarkable challenges, largely unforeseen when the current strategy was initially devised. Besides issues pertaining to all central banks — such as the reasons for low inflation, the validity of standard economic relations or the incidence and challenges of the lower bound on nominal interest rates —, the ECB dealt with a unique and imperfect setting of the monetary union. In particular, further steps in the banking union, fiscal union, economic union and political union are still pending for achieving a complete economic and monetary union.

The euro is our common currency and the most tangible identity of our participation in the Union construction. The monetary policy strategy is an integral part of the European economic policy landscape. Yet another reason for all Europeans to care and stay close to the Europystem.

The ECB has delivered on its mandate, playing a critical role in the stabilisation of the euro area. Thus, it contributed in significant ways for employment and economic growth, in the pursuit of the primary objective of price stability. All this made it evident that the backbone of monetary policy, and of price stability, is liquidity provision in a very wide sense. The outset of the pandemic crisis confirmed the appropriateness of the ECB's response. The complementarity with fiscal policy arose naturally and was effective in countering the impact of the pandemic crisis.

While fulfilling its mandate the ECB serves European citizens and contributes to their welfare. The ECB's monetary policy strategy review ought to clarify how it can best deliver on its mandate in the future. This includes ensuring that objectives and actions are well understood, shared and defined to the benefit of all Europeans.

The ECB is contributing within its competences to a broader objective of further deepening a still incomplete economic and monetary union. Debate ought to continue at the Union level and result in decisive actions. It is certainly part of Banco de Portugal's mission to take part in this debate, not just within the Eurosystem but also engaging with academics, market participants, civil society organisations and the public. Banco de Portugal hosted listening events, giving these groups an opportunity to share their views.

Portugal joined the euro since its inception, which meant that it shared its monetary sovereignty, to be a proud member of the European monetary sovereignty. Banco de Portugal is now part of a wider project, and able to contribute to preserve the value of one of the leading world currencies. In the debate on the monetary policy strategy a clear understanding of the arguments, built upon the capacity to listen, to analyse, and to synthesize is of the essence. The highly trained human capital, the relevance given to economic research along with an atmosphere that promotes a diversity of views, including those of policy-makers, assured that Banco de Portugal was ready to contribute to this debate. By making proposals crafted around a careful account of the legal, economic and often political constraints, this work is a demonstration of this.

1. Introduction

Ildeberta Abreu

The ECB is currently reviewing its monetary policy strategy. This is an opportunity for the ECB to redefine the most appropriate framework to fulfil its mandate and to discuss how it can better serve the interests of European citizens. The strategy review has sparked a stimulating debate among academics, market participants and other observers, as well as within the Eurosystem. The general public and civil society organisations have also shared their views in the listening events hosted by the Eurosystem (i.e. the ECB and the euro area national central banks). A comprehensive review of the different issues is critical to devise a suitable strategy for the coming years. This work seeks to offer a thought-provoking contribution to this debate and advances several reflections of staff members of the Banco de Portugal.

A monetary policy strategy is the framework that guides the central bank's policy decisions to fulfil its mandate and their communication to the public. To be effective, the strategy must ensure well-informed and consistent decisions. Also, it must evolve over time to take into account changes in knowledge, the economic structure, the institutional set-up and, ultimately, the aspirations of citizens.

The ECB's mandate is established in the Treaty on the Functioning of the European Union (TFEU). The primary objective is to maintain price stability. Without prejudice to this objective, the ECB shall support the general economic policies in the Union in order to contribute to the achievement of its objectives. The ECB does not have the power to alter its mandate but has the autonomy to specify the meaning of price stability and ample operational independence to choose the strategy and instruments for its fulfilment.

The ECB's monetary policy strategy was announced in 1998 and revised in 2003. The current strategy comprises a definition of the objective of price stability and a two-pillar approach to the analysis of the risks to price stability. In 1998, the Governing Council defined price stability as a year-on-year increase in the Harmonised Index of Consumer Prices (HICP) for the euro area of below 2% and indicated that price stability is to be maintained over the medium term. It also stated that the monetary policy strategy would focus strictly on the primary objective. In 2003, the Governing Council clarified that, in the pursuit of price stability, it aims to maintain inflation rates below, but close to, 2% over the medium term. The assessment of the risks to price stability is based on two analytical perspectives: (i) the economic analysis that identifies short- to medium-term risks and (ii) the monetary analysis that serves as a cross-check, from a medium- to long-term perspective, of the signals arising from the economic analysis. The ECB has also established a set of instruments to implement monetary policy decisions and a timely and transparent communication policy to help make it credible and accountable.

Since 2003, the euro area economy has experienced profound changes. These changes include a protracted environment of low inflation, low potential growth and a low natural interest rate. Addressing low inflation raises challenges that differ from those of addressing high inflation, which was prevalent at the birth of the euro area. The scope within which conventional policy instruments may be used has become more limited. The crises that have occurred over these two decades have also triggered institutional changes to deepen the economic and monetary union (EMU) and increase euro area resilience. Other structural dynamics, such as globalisation, digitalisation, climate change awareness and evolving financial structures have further changed the environment in which monetary policy operates. The ECB has used the flexibility embedded in its strategy and adjusted several elements of its policy to respond to the demanding circumstances, notably since the global financial crisis.

In light of the challenges posed by the economic and institutional changes, in January 2020 the Governing Council announced the launch of an in-depth review of its monetary policy strategy, in full respect of the mandate enshrined in the Treaty. The ECB wants to ensure that its strategy is best suited to deliver its mandate, both today and in the future. The conclusion of the strategy review is expected in the second half of 2021.

The following chapters discuss various elements of the ECB's existing strategy. In particular, they discuss whether, and in what possible ways, these elements could be refined to better attain the primary objective of price stability and to better contribute to the achievement of other European Union (EU) objectives. A number of substantive issues unfold across the various chapters. Some are also faced by other central banks and, therefore, lessons can be drawn from their experience. Others are related to the unique circumstances pertaining to the EMU and make the ECB's challenges more complex than those of its peers.

The first issue concerns the reasons behind the persistently low level of inflation and inflation expectations in the euro area as different diagnoses may have different policy implications. A key question is whether this is the result of short-run dynamics or if long-run forces are also increasingly at play. This has implications for the definition of price stability and the framework for assessing the risks to price stability, but also for the use of certain policy instruments, such as forward guidance.

Another issue is how the limitations to interest rate policy stemming from the lower bound constraint should be dealt with. Besides making unconventional instruments part of the ECB's toolkit other avenues have been suggested. Some widely advocated proposals – higher inflation objective, make-up strategies and reinforced forward guidance – are carefully examined to ascertain whether they may be helpful or, on the contrary, have unintended consequences.

Considering the best way of dealing with the challenges surrounding the effective transmission of the ECB's monetary policy is an additional crucial topic, as this may be a necessary condition for the fulfilment of its price stability objective. In contrast to other central banks, the ECB faces the unique challenge of being the common central bank of multiple sovereign states. A valid point of discussion is whether the role of central banks as liquidity providers of last resort – both to the banking sector and to specific segments of financial markets – needs to be explicitly acknowledged in the ECB's monetary policy strategy given the specific features of the euro area. This has a number of implications, namely for the roles assigned to the different instruments, for communication with the public and for the interaction of monetary and fiscal policies.

A final issue concerns the desirability of supporting the general economic policies in the EU, without prejudice to price stability. Price stability is the only objective for which central banks are ultimately and solely responsible and this justifies its primacy. However, the Treaty's provisions appear to be compatible with a less strict focus of the ECB's monetary policy strategy on price stability than is currently the case. The possibility of granting a more explicit role to other economic considerations, such as employment and economic growth, is discussed, along with its potential implications for communication, credibility and public perceptions about the ECB. The role the ECB could play in addressing the challenges of environmental sustainability and climate change is also discussed.

2. Why a new strategy is necessary

Sandra Gomes, Nikolay Iskrev and Pedro Pires Ribeiro

Over the last decades, real interest rates have been on a steady downward trajectory in the euro area and other advanced economies, largely reflecting a decline in the natural interest rate. The natural interest rate (*r**) denotes the short-term real interest rate prevailing under stable macroeconomic conditions, in the absence of transitory shocks or nominal rigidities. While *r** is an unobservable variable whose empirical estimation is sensitive to the methodology adopted, available estimates indicate that the natural interest rate has been falling in the euro area. It presently stands at levels close to 0% or even negative, which compares with estimates of around 2% at the beginning of this century (Chart 2.1 – Panel A). The declining path has been determined by structural factors, such as demographic developments and a slowdown in productivity and potential output (i.e. the value of the output that an economy would have produced if labour and capital had been employed at their maximum sustainable rates), but also by financial factors, which have become particularly relevant in the wake of the crises that emerged since the last strategy review (Brand, Bielecki and Penalver, 2018).

Chart 2.1 • Euro area interest rates | Per cent



Sources: ECB, Federal Reserve Bank of New York and Refinitiv (Banco de Portugal calculations). | Notes: Panel A – real interest rates are approximated as the difference between average nominal interest rates and average annual inflation rates recorded in each quarter. Natural interest rate estimated according to Holston, Laubach and Williams (2017), available up to 2020 Q2. Panel B – end of month data.

The natural interest rate is an important input to the analysis supporting central banks' decisions. Monetary policy generally cannot influence the structural factors that affect r^* , but this rate may be used by central banks to assess the monetary policy stance. In particular, if the (real) policy rate level is below (above) r^* , the stance will be expansionary (contractionary). Nevertheless, using the natural interest rate as a reference for calibrating the monetary policy stance is intricate since it is unobservable and its level changes over time.

The fact that the natural interest rate may remain at historically low levels poses significant challenges for monetary policy. On the one hand, central banks need to acknowledge that the level of the policy rate that is neither contractionary nor expansionary is lower than in the past. On the other hand, it is more likely that the policy rate will hit the effective lower bound (ELB), that is, the level at which the central bank is unable to cut further as economic agents would be willing to switch from deposits to cash. This reduces the space available for conventional policy easing and makes the use of unconventional measures more likely.

Another key change in the euro area over the last decade is the persistently low inflation, despite the significant conventional and unconventional policy measures deployed by the ECB (Chart 2.1 – Panel B and Chart 2.2 – Panel A). While in the first years of the euro area the average rate of inflation was close to 2%, in the period following the crises it remained on average considerably below that figure. The economic recovery that followed the sovereign debt crisis of 2010-12 was not associated with a pick-up in inflation, in spite of the various monetary policy measures. The fact that economic forecasters have consistently predicted higher than actual inflation rates (the so-called "missing inflation puzzle", Constâncio, 2015; IMF, 2016b) suggests that traditional economic models which relate inflation and economic activity may have difficulties in capturing the main forces driving inflation. This may be the case either due to a mismeasurement of economic slack (i.e. underutilisation of productive resources) or as a result of other relevant factors not being included in the models. Notwithstanding the lower than expected inflation developments, the ECB's actions have been effective in strengthening economic activity and employment and in preserving macroeconomic stability, thus contributing to welfare (Section 5.1).



Chart 2.2 • Euro area inflation and inflation expectations | Per cent

Sources: Bloomberg, ECB and Eurostat (Banco de Portugal calculations). | Notes: Panel A – horizontal lines denote the average over the spanned period. Panel B – ECB Survey of Professional Forecasters (SPF) is conducted on a quarterly basis. Inflation compensation extracted from inflation-linked swaps (ILS) comprises both true inflation expectations and risk premia and should not be directly compared with the ECB SPF.

Structural changes have likely influenced the inflation dynamics but cannot fully explain the persistently low inflation in the euro area. Among the factors potentially at play are structural forces such as globalisation, digitalisation and population ageing. The process of higher global economic integration has fostered greater competition and has likely put downward pressure on prices. However, this process has been ongoing for several decades and has affected many countries, implying that it cannot explain the relatively recent phenomenon of persistently low inflation in the euro area. Other structural forces, such as the rapid growth and wider adoption of digital technologies, may have amplified the impact of globalisation. Digitalisation can affect inflation by enhancing productivity, lowering the prices of technology goods and services, and by facilitating the creation of new and more competitive market structures. Population ageing may drive the natural interest rate downwards and therefore interacts with the monetary policy stance. A tighter than intended stance would exert a downward pressure on inflation. While these structural forces are mostly beyond the control of the central bank, monetary policy has to consider their effects. Climate change, and the efforts to address it, is another factor that could have a lasting impact on the way the economy works and therefore needs also to be considered (Section 5.2).

An inflation rate persistently below the ECB's objective can impinge on economic agents' inflation expectations. The recent evolution of longer-term inflation expectations in the euro area has raised concerns that agents' expectations have become less well-anchored to the ECB's inflation aim. Panel B of Chart 2.2 shows that survey and market-based measures of inflation expectations have fallen to historically low values outside the range consistent with the ECB's aim, often assumed at 1.7-1.9% (ECB, 2003). The ability to influence longer-term expectations is widely recognised as a crucial requirement for central banks to meet their inflation objectives. Expectations are important determinants of the current consumption and investment decisions of economic agents and can therefore affect current inflation. The experience of Japan, where inflation has been considerably low for decades, shows that it may be very difficult to raise inflation expectations when low inflation has become entrenched in the agents' decision-making process.

An open question is whether persistently low inflation and inflation expectations are a result of economic agents questioning the ECB's ability or willingness to raise inflation, or of long-run monetary forces being increasingly relevant. Inflation expectations may have declined since agents see the prolonged period of low inflation as evidence of the inability of the central bank to provide the necessary monetary accommodation, in the presence of the ELB. According to this interpretation, the fall in both inflation and inflation expectations is the result of insufficiently expansionary monetary policy. Agents may have also interpreted the ECB's actions as showing greater tolerance to low inflation than to high inflation, due to the prevailing ambiguity in the definition of the price stability objective (Section 4.1). An alternative hypothesis is that the low inflation period may be the result of the "low-for-long" interest rate policy (Uribe, 2021; Valle e Azevedo, Ritto and Teles, 2019). On average, the real interest rate equals the nominal interest rate minus the inflation rate (the so-called Fisher relation). In the long run, monetary policy has limited influence on the natural interest rate and thus the nominal interest rate and inflation move onefor-one. Consequently, a low inflation environment may be the result of the maintenance of interest rates at low levels over a prolonged period and of the expectations that they will persistently remain so.

Alternative explanations for the low level of inflation and inflation expectations may have different policy implications. If muted inflation derives from excessive economic slack, further monetary accommodation is needed to bring inflation up and lift longer-term inflation expectations. However, if low inflation results from long-run forces, namely a long period of low interest rates and the promise to keep them at low levels, then further monetary easing will fail to move inflation up to levels consistent with the ECB's price stability objective (Section 4.3). Giving a conclusive answer on which is the correct view appears to be difficult and both narratives likely play a role in explaining the muted inflation levels over the last decade.

The crises over the last years have shown the relevance of the central bank's role in ensuring a well-functioning monetary policy transmission mechanism. They have also led to an expansion of the monetary policy toolkit. In response to the crises, the ECB introduced several measures to restore the proper functioning of the transmission mechanism, which is a necessary condition to achieve its price stability objective (Section 4.2). These actions were instrumental in addressing dysfunctional market segments, reducing fragmentation (i.e. distress in financing market segments in some countries not explained by economic fundamentals) and removing risks of a euro area break-up. The ECB also deployed several unconventional measures to provide accommodation, namely when policy rates approached their ELB. Given the greater complexity of monetary policy, the ECB, like other central banks, stepped up its communication, which has become an instrument in itself. The future use of this expanded toolkit to respond to different contingencies raises some issues that will need to be addressed (Section 6.1). Further enhancements to communication practices may also be necessary in view of calls for increased clarity and transparency (Section 6.2).

The structure of financial markets, which influences the conduct and transmission of monetary policy, has also changed over the last decades. Important changes include the growing role of nonbank finance (IMF, 2016a) and the more stringent regulatory requirements, in particular since the global financial crisis. The higher relevance of non-banks over the last years, namely in funding markets, has an undeniable impact on the way monetary policy impulses are transmitted to the real economy. Also, the fact that non-banks play a greater role in several financial market segments but cannot access central bank reserves has impinged on the transmission mechanism of monetary policy (ECB, 2016). Regulatory requirements that triggered a higher demand for high-quality liquid assets exacerbated these effects on the transmission mechanism. The ECB's monetary policy strategy and implementation framework need to consider these changes.

The crises have also triggered institutional changes in the euro area and highlighted the need to deepen economic integration. After the global financial crisis and the sovereign debt crisis, the need to strengthen the governance framework supporting the EMU and to deepen the integration of the banking system became clear. The European Stability Mechanism (ESM) was set up to provide financial assistance to euro area countries experiencing severe financing problems. The banking union was created, including the Single Supervisory Mechanism (SSM), the Single Resolution Mechanism, and the establishment of the Single Rulebook. The ECB was given banking supervisory tasks under the SSM, which led to some concerns associated with potential conflicts of interest between the ECB's two arms (Cassola, Kok and Mongelli, 2019). Developments related to budgetary and macroeconomic surveillance at the Union level have also occurred. These changes were instrumental for the ECB to be able to adopt measures such as the announcement of the Outright Monetary Transactions (OMT) programme that relies on the explicit conditionality of an adequate ESM programme (Hartmann and Smets, 2018). However, further progress on deepening the EMU is desirable, including the need to complete the banking union, namely with the set-up of a European deposit insurance scheme. Despite the reforms in the fiscal front, the surge of public debt in several Member States amidst a significant rise of sovereign bond holdings by the ECB and the euro area national central banks has reignited the debate on the interactions between fiscal and monetary policies and the possibility that a fiscal dominance regime (i.e. one in which central banks' decisions would be constrained by public debt sustainability considerations) could arise. The pandemic crisis has buttressed these discussions, as highlighted in Chapter 7.

Overall, the current strategy has allowed the necessary flexibility to respond to the main challenges that have affected the euro area economy. However, there is room for improvement in order to better fulfil the ECB's objectives over the coming years. Since 2003, the Governing Council has repeatedly voiced its readiness to intervene, has deployed a host of unconventional instruments and has taken several actions to ensure an effective monetary policy transmission and safeguard the singleness of monetary policy in the euro area. Notwithstanding, inflation outcomes have been persistently below the ECB's aim over the last years. Episodes have occurred in which difficulties in the transmission of monetary policy may have hampered the fulfilment of the inflation objective. Moreover, in some cases, communication about the ECB's objective and its policy response has not been sufficiently clear. This strategy review provides an opportunity to consider how the changes observed since 2003 impinge on how the ECB may best achieve its objectives in the future.

3. Legal issues on the review of the monetary policy strategy

Luís Barroso

While the Treaty sets out the primary objective of the European System of Central Banks (ESCB), which is to maintain price stability, it does not specify a definition of such objective. The Treaty, as well as the Statute of the ESCB/ECB, is characterised by a clear mandate, which is directed primarily at the objective of ensuring price stability, as laid down in Articles 127(1) and 282(2) TFEU. Although the Treaty refers to price stability as the primary ESCB objective, the concept of price stability is not defined or further specified. The only exception can be found in Article 140(1) TFEU, concerning the convergence criteria for non-euro area Member States, where the price stability objective is associated with "a rate of inflation which is close to that of, at most, the three best performing Member States in terms of price stability".

The ESCB benefits from a wide margin of discretion as regards the specification of the objective of maintaining price stability, albeit this specification is subject to control by the Court of Justice of the European Union (CJEU) on the basis of a manifest error of assessment test. Since the TFEU does not spell out precisely how the price stability objective is to be given concrete expression in quantitative terms, the ESCB has to define it. The CJEU has considered that the current specification of the objective, adopted by the ECB in 2003, is not vitiated by a manifest error of assessment and does not go beyond the Treaty framework.

Measures that are intended to preserve the monetary policy transmission mechanism may be regarded as pertaining to the primary objective laid down in Article 127(1) TFEU. Should the ability of the ECB to influence price developments by means of its monetary policy decisions be hampered in a part of the euro area, such problems are likely to render the ECB's decisions ineffective in a part of the euro area and, accordingly, to undermine the singleness of its monetary policy. Moreover, since a disruption of the transmission mechanism undermines the effectiveness of the measures adopted by the ESCB, it necessarily affects the ESCB's ability to guarantee price stability (as assessed by the CJEU in Case C-62/14, Gauweiler). This reasoning applies notably to the OMT, in the context of which the ESCB could acquire, in the secondary market, sovereign bonds issued by Member States undergoing a full macroeconomic adjustment programme or a precautionary programme. The legality of this programme was, hence, confirmed by the CJEU in Gauweiler. In said judgment, the CJEU concluded that measures that are intended to preserve the transmission mechanism may be regarded as pertaining to the primary objective laid down in Article 127(1) TFEU. While the CJEU specifically addressed the ineffectiveness of the monetary policy "in a part of the euro area", its conclusion may arguably apply to other types of disruptions in the transmission mechanism, including those affecting the euro area as a whole.

Measures intended to preserve the transmission mechanism may comprise those which aim to overcome disruptions in such mechanism, including due to fragmentation across euro area countries or appreciable dysfunctions in important segments of the financial system. The ability of the ESCB to influence price developments by means of its monetary policy decisions depends on the existence of certain circumstances that allow for the transmission of the necessary impulses across financial markets. In addition to problems in the transmission mechanism caused by fragmentation in financing conditions, significant instability in financial markets may also render the ECB's decisions ineffective across the euro area, undermining the conduct of monetary policy. The adoption of measures by the ECB intended to address those disruptions could also be regarded as pertaining to the primary objective.

Without prejudice to the objective of price stability, the ESCB shall support the general economic policies in the Union with a view to contributing to the achievement of the objectives of the Union. This follows from Article 127(1) TFEU, while the objectives of the Union, which should benefit from ESCB support to the general economic policies in the Union, are set out in Article 3 of the Treaty on European Union (TEU).

The ESCB contribution to the achievement of the Union objectives is indirect in nature, since it should occur through support provided to the general economic policies in the Union. The ESCB should not set out to directly contribute to the Union objectives referred to in Article 3 TEU, although it should contribute to their achievement by providing support to the general economic policies in the Union. Hence, the pursuit of secondary objectives should imply the existence of the relevant general economic policies in the Union, the support of which, to be conducted through appropriate means, should be duly justified by the ECB, according to its mandate.

While the notion of "general economic policies in the Union" is not defined in the Treaty, it should refer to economic policies which are sufficiently consistent, comprehensive and wide-ranging. According to Article 119(1) TFEU, the activities of the Member States and the Union shall include the adoption of an economic policy which is based on the close coordination of Member States' economic policies, on the internal market and on the definition of common objectives. In addition, the European institutional developments following the sovereign debt crisis (in particular the creation of the ESM) and the COVID-19 pandemic (as a consequence of which an EU recovery instrument was agreed), are relevant indicators of the emergence of general economic policies in the Union beyond the mere coordination of national policies. The coherence of common economic policies makes the pursuit of secondary objectives more clear-cut.

Secondary objectives may justify the participation of the ECB in certain organisations. The CJEU has considered, in Case C-370/12 (*Pringle*), that the tasks allocated to the ECB by the ESM Treaty are in line with the various tasks which the TFEU and the Statute of the ESCB/ECB confer on that institution, noting that, by virtue of its duties within the ESM Treaty, the ECB supports the general economic policies in the Union, in accordance with Article 282(2) TFEU.

The expression "general economic policies in the Union" may be understood to refer to policies that are clearly relevant from an economic point of view, even if they are not economic policies in a strict sense. While Article 127(1) of the TFEU (or any other provision in the EU Treaties) does not set out what "general economic policies" should mean, that Article states that the support of the ESCB to such policies shall occur "with a view to contributing to the achievement of the objectives of the Union as laid down in Article 3 [TEU]". Article 3(3), second sentence, TEU, refers to the "sustainable development of Europe based on balanced economic growth and price stability, a highly competitive social market economy, aiming at full employment and social progress, and a high level of protection and improvement of the quality of the environment". The integration in said provision of concerns relating to the economy, employment, social progress, and the environment, recommends a non-strict interpretation of the term "general economic policies".

Considerations regarding employment and balanced economic growth may have a more explicit role in the monetary policy strategy, if duly justified and without prejudice to the primary price stability objective. The current strategy already states, as regards the medium-term orientation, that monetary policy should not attempt to fine-tune developments in prices or inflation in the short term. The medium-term orientation makes it possible for monetary policy to take into account concerns with output fluctuations, without putting price stability at risk. The ECB may continue to highlight the importance of a flexible medium-term perspective in order to accommodate relevant considerations and goals. The close connection between employment issues and the primary objective of the ESCB may be a relevant factor in this context. The level of priority afforded to the objective of job creation at the EU level is also important, in view of the

strategic agenda for the EU (2019-2024), as approved by the European Council. Hence, so long as the centrality of the primary price stability objective is ensured, the legal framework may be interpreted as permitting considerations regarding full employment and balanced economic growth to be granted a clearer role in the monetary policy strategy, while remaining within the boundaries of the mandate and ensuring compliance with the principle of proportionality.

The support to general economic policies in the Union may also imply a contribution of the ESCB to policies aimed at promoting a high level of protection and improvement of the quality of the environment. There is an increasingly close and relevant connection between economic and environmental policies, in view of the objective of promoting a climate-neutral economy, thus blurring the distinction between the two types of policies. Moreover, Article 3(3), second sentence, TEU, refers to the "sustainable development of Europe" and explicitly accommodates concerns with the protection and improvement of the quality of the environment at the end of that sentence. This provides further support to the notion that the concept of "general economic policies" should be understood flexibly to include policies dealing with relevant environmental protection. Furthermore, Article 11 TFEU contains a clear obligation for the EU, which should in principle also apply to the ECB, stating that environmental protection requirements "must be integrated into the definition and implementation of the Union's policies and activities, in particular with a view to promoting sustainable development".

The ESCB shall contribute to the smooth conduct of policies pursued by the competent authorities relating to the prudential supervision of credit institutions and the stability of the financial system. This duty upon the ESCB follows from Article 127(5) TFEU and Article 3(3) of the Statute of the ESCB/ECB. The stability of the financial system is not an objective of the ESCB, and therefore the ESCB does not have a duty to directly contribute thereto. Instead, the contribution of the ESCB occurs indirectly, through support granted to the policies pursued by the competent authorities. Measures adopted by the ESCB under Article 127(5) TFEU, e.g. those preventing the build-up of risks in the financial system, should, therefore, be distinguished from measures which are intended to address disruptions in the transmission mechanism associated with financial instability in a wider sense, which pertain to the scope of Article 127(1) TFEU.

Article 127(5) TFEU sets out a specific duty of the ESCB to contribute to the smooth conduct of policies pursued by the competent authorities relating, in particular, to the stability of the financial system. The primary and secondary objectives of the ESCB are laid down in Article 127(1) TFEU. The "basic tasks" of the ESCB are established in Article 127(2) and in Article 3(1) of the Statute of the ESCB/ECB. Article 127(5) TFEU, together with Article 3 of the Statute, which generally sets out the ESCB tasks, then provides, in its third paragraph, for the duty of the ESCB to contribute to the smooth conduct of policies pursued by the competent authorities relating to the prudential supervision of credit institutions and the stability of the financial system.

The Treaty does not set out any specific tools or instruments for the pursuit of the ESCB's function under Article 127(5) TFEU, implying that it may be exercised through the basic ESCB tasks. The duty upon the ESCB to contribute to the smooth conduct of policies pursued by the competent authorities relating to the stability of the financial system may be effectively exercised, within the framework of the Treaty, if it is embedded in the basic ESCB tasks, in particular the definition and implementation of the monetary policy of the Union (Mersch, 2018). Otherwise, the role of the ESCB as regards the stability of the financial system would be limited to its advisory function, which is not well aligned with the distinction between Article 127(4), which applies to the advisory function of the ECB, and Article 127(5), which calls upon the ESCB to contribute to the smooth conduct of policies pursued by the competent authorities relating to the stability of the financial system.

While the ECB has been conferred specific tasks relating to the prudential supervision of credit institutions, the ECB has not been given a direct responsibility for the stability of the financial system. The SSM Regulation confers specific tasks on the ECB concerning policies relating to the prudential supervision of credit institutions, with a view to contributing to the safety and soundness of credit institutions and the stability of the financial system within the Union and each Member State. While these specific tasks of the ECB should contribute to the stability of the financial system, including via the exercise of certain macroprudential powers, the ECB has not been provided with a general and direct responsibility for the stability of the financial system as a consequence of the establishment of the SSM.

The measures adopted by the ESCB need to comply with general EU legal principles. As any other EU institution, the ECB is subject to general EU legal principles, as established in the Treaty or in the jurisprudence of the CJEU, including the principle of proportionality, the principle of conferral (i.e. the Union may only exercise the competences which the Member States have conferred upon it) and the duty to give reasons.

Compliance with EU legal principles which apply specifically to the ESCB is also required. According to the final part of Article 127(1) TFEU, the ESCB shall act in accordance with the principle of an open market economy with free competition, favouring an efficient allocation of resources. Moreover, the ESCB needs to comply with the prohibition of monetary financing laid down in Article 123 TFEU.

The principle of proportionality is of particular importance to the ESCB when adopting measures aimed at preserving the transmission mechanism, or when pursuing secondary objectives. The CJEU, in Cases C-62/14 (*Gauweiler*) and C-493/17 (*Weiss*), has clarified that it follows from Articles 119(2) TFEU and 127(1) TFEU, read in conjunction with Article 5(4) TFEU, that a bond purchase programme forming part of monetary policy may be validly adopted and implemented only insofar as the measures that it entails are proportionate to the objectives of that policy. The control of the ECB's discretion implies a judgment of whether the ECB's analysis of the economic situation of the euro area, when a particular measure or programme is launched, is vitiated by a manifest error of assessment. The ECB measures should be suitable (i.e. appropriate for the purpose of contributing to the ESCB's objectives), and necessary (i.e. the measures do not go manifestly beyond what is necessary to achieve the stated objectives). Finally, the ESCB should weigh up the various interests at play so as to actually prevent disadvantages from arising, when the measures in question are implemented, which are manifestly disproportionate to the measures' objectives.

4. The primary objective of price stability

The ECB's current monetary policy strategy includes two main elements: a definition of the price stability objective and a two-pillar approach (i.e. the economic and monetary analyses) to the assessment of risks to this objective. As explained in Chapter 2, the euro area has undergone several changes that call for a discussion of the current strategy, in particular in what regards the definition and assessment of the primary objective of price stability.

4.1 The definition of price stability: a symmetric inflation objective of 2% over the medium term

José Cardoso da Costa and Sandra Gomes

The ESCB's primary objective is defined in the TFEU as maintaining price stability in the euro area. However, the Treaty does not provide an explicit definition of price stability, giving the ECB some leeway to specify its objective (Chapter 3). The price stability objective is currently specified as a year-on-year increase of the euro area HICP of below, but close to, 2% over the medium term. This includes: (i) a specific index choice to measure consumer prices in the euro area, (ii) a quantitative definition and (iii) a medium-term orientation. Each of these elements is discussed below.

The HICP continues to be the best and most widely used measure of consumer prices in the euro area but there is some room for improvement. The HICP has been used in the definition of price stability since the birth of the euro area, largely due to it being the only price index sufficiently harmonised across the euro area countries and available in a timely manner. Since the last strategy review in 2003, HICP computation has improved along several dimensions, namely in terms of harmonisation across countries, sampling, coverage and timeliness. A possible area of improvement is related to owner occupied housing (OOH) costs, i.e. the costs associated with purchasing, maintaining and living in one's own home. The inclusion of OOH costs in the HICP is desirable to improve the representativeness of the consumption basket, as housing costs currently enter the HICP only through rents and minor repairs, and to improve cross-country comparability, given the differences in house ownership rates across euro area countries. This concern was voiced by the general public at the Eurosystem's listening activities (ECB, 2021a). Including OOH costs in the HICP entails several challenges, for example related to the fact that the HICP mostly includes household final consumption expenditure that involves monetary transactions. Also, the inclusion of OOH costs could come at the cost of lower frequency or timeliness. Thus, further analysis and work are needed before considering an alternative measure in the definition of price stability.

The current definition of the price stability objective is ambiguous with regard to the lower bound for inflation. The so-called double-key formulation of the objective includes a quantitative definition of price stability in the form of a range (from 0 to 2%), coupled with an aim to keep the inflation rate close to the upper end of this range. Thus, the upper bound for inflation is clearly defined but the lower bound is softer. This ambiguity has been criticised, as it may have led to a perception that the ECB is more tolerant to low inflation than to high inflation. This perception may have contributed to less success in anchoring inflation expectations in recent years (Paloviita, Haavio, Jalasjoki and Kilponen, 2017; Hartmann and Smets, 2018). Despite this ambiguity in the current definition of the price stability objective, it is hard to argue that the ECB has had an asymmetric reaction to inflation levels below versus above the objective, especially when one takes into account not only the interest rate policy but also the unconventional measures deployed during and after the global financial crisis. Over time, the ECB's Governing Council members have tried to

clarify this issue, often stressing the symmetric nature of the ECB's reaction function (i.e. the rule defining the reaction of monetary policy to economic developments) (Draghi, 2016). Since July 2019, the Introductory Statement to the ECB's press conference has explicitly referred to the Governing Council's commitment to symmetry.

A clear and symmetric definition of the price stability objective would be an improvement. A symmetric definition would be easier to communicate thus allowing for a better understanding of the ECB's symmetric reaction function (i.e. it reacts to both deviations above and below the objective), which could contribute to a better anchoring of inflation expectations. The evidence on whether it is preferable to formulate the objective as a point target, a range or a range with an emphasis on the midpoint is scant. Overall, the literature tilts towards choosing a point target. Point targets are simple and clear, and therefore easier to communicate to the public and likely to be more successful at anchoring inflation expectations (Beechey and Österholm, 2018; Mishkin, 2008). Model analyses also show point targets have better macroeconomic stabilisation properties than ranges. Having a (symmetric) range on top of a point target does not appear to be helpful, as the existence of an explicit focal point is sufficient to anchor expectations. Nevertheless, a range would introduce an element of flexibility which is arguably similar to that afforded by the medium-term orientation of the ECB's definition of price stability.

The fact that monetary policy may be more often constrained by the ELB on nominal policy rates would call for an increase in the inflation objective, but at the cost of raising credibility concerns. An inflation objective of 2% appears to be an adequate compromise. The decline of the natural interest rate implies less room for monetary accommodation and a more frequent occurrence of the ELB. Several suggestions have been advanced to deal with this challenge. One approach advocates raising the inflation objective to allow additional room for action. A policy rule with enough room for manoeuvre would keep the economy out of the ELB for longer and allow extra room for stabilisation policy (Andrade, Galí, Le Bihan and Matheron, 2019; Ball, 2014; Williams, 2009). However, this comes at a cost, as inflation works as a distortive tax (Adão, 2019). There is no clear evidence that the balance between a larger leeway for action and the costs of higher inflation leans towards inflation above 2%. Also, raising the inflation objective, especially in the context of a prolonged period of low inflation, would likely imply serious credibility costs and could destabilise inflation expectations (Deutsche Bundesbank, 2018). Choosing a price stability objective at the upper bound of the current price stability definition, i.e. at 2%, appears to be a more sensible approach.

Make-up strategies have been proposed as an alternative means to overcome the limitations of interest rate policy in the presence of the lower bound constraint. The literature has discussed several alternative formulations for a price stability objective that take into account past deviations of inflation from its aim, such as price level targeting or average inflation targeting (AIT). Under these strategies, past deviations of inflation from its aim must be offset in the future. Thus, if inflation has undershot (overshot) the objective in the past, the central bank commits to making it overshoot (undershoot) via more (less) accommodative policy in the future. In a class of models where agents fully understand and believe in this promise, even if the central bank is constrained by the ELB, real interest rates are compressed and the central bank is successful in providing accommodation, crucially since agents anticipate, understand and believe in future policy actions. This would help drive inflation to the objective and would reduce the probability of being constrained by the ELB in the future, thus fostering macroeconomic stabilisation (Arias, Bodenstein, Chung, Drautzburg and Raffo, 2020).

Make-up strategies have limitations, including the fact that their theoretical appeal relies on restrictive assumptions and that they may prove to be time inconsistent. First, the theoretical results regarding the effectiveness of make-up strategies, which mostly rely on the restricted class of standard new Keynesian models, hinge crucially on the assumptions that the strategy is credible,

that agents are forward looking and that long-run inflation expectations remain firmly anchored. This amounts to the assumption that monetary policy is able to affect real interest rates over a prolonged period. Even if one believes that make-up strategies can be credible and that agents are to some extent forward looking, it is uncertain whether this period can be prolonged. The fact that long-run inflation expectations have drifted downwards in the euro area is a reason for concern. This has occurred despite arguably credible forward guidance on interest rates (i.e. guidance on the future path of policy rates). Second, these strategies may be helpful at the ELB if further accommodation is needed but they may be time inconsistent, i.e. they may imply that at some point in the future the central bank will be compelled to renege on its previous commitments, as they will no longer be optimal. In the event of inflation being persistently above the objective, the central bank would have to commit to bringing inflation down to levels below the objective for a certain period of time and, therefore, would need to commit to tightening the monetary policy stance, even if this were to trigger an economic slowdown or even a recession. To overcome this issue, some authors propose the introduction of asymmetric make-up strategies, i.e. strategies that kick in only if policy is constrained by the ELB or if inflation is below the objective (Arias et al., 2020). In practice asymmetric strategies are prone to generating confusion, as initially the public may not understand or believe in policymakers' commitment to this new strategy.

The introduction of make-up strategies could be a means to reinforce forward guidance, however the evidence suggests that this is not necessary. The theoretical effects regarding make-up strategies are similar to the case when the central bank promises low interest rates for a prolonged period using forward guidance. Make-up strategies may enhance the credibility of forward guidance announcements. However, this does not appear to be necessary, as data from financial market instruments and surveys suggests that ECB forward guidance announcements have been effective in anchoring agents' expectations with respect to interest rates. Forward guidance may not have been so effective in anchoring long-term inflation expectations, but make-up strategies may not solve this issue and may even lead to unintended consequences for inflation.

Make-up strategies may be detrimental to the anchoring of inflation expectations. Make-up strategies at (or close to) the ELB may imply a promise by the central bank to keep interest rates at low levels for a protracted period, in order to get inflation above the central bank's objective. If monetary policy becomes unable to further affect real interest rates, i.e. if it becomes neutral over that period, this commitment may contribute to low inflation becoming entrenched in agents' expectations, and therefore to a de-anchoring of inflation expectations. In such a case, this policy will not be successful in bringing inflation up but will instead contribute to low (trend) inflation. In other words, it is a policy that intends to reduce the negative deviation of inflation from its trend (the central bank's objective) but may end up having a pervasive consequence for the trend itself, if it is not clearly announced as temporary (Section 6.1).

The experience of the United States (US) with a policy akin to average inflation targeting will be important to gain knowledge on how it might work in practice. The US Federal Reserve (Fed) announced changes to its strategy in August 2020. One of the main novelties was that it would seek to achieve inflation that averages 2% over time as a means of anchoring longer-term inflation expectations at this level (which, crucially, the Fed considers to have remained anchored). This means that, following periods when inflation has been running persistently below 2%, monetary policy will actively aim to achieve inflation moderately above 2% for some time. This is akin to an AIT strategy. The horizon was not specified and therefore it is unclear how long the Federal Open Market Committee (FOMC) will allow inflation to stand above 2% before adjusting the policy stance. This introduces some flexibility in the framework. The FOMC believes that this approach will reinforce the guidance that 2% inflation is not a ceiling and help pin down longer-run inflation expectations at 2%. The decoupling between the expectations of FOMC members for policy rates until 2023 (as assessed in March 2021) and those implied by market instruments may reflect,

among other factors, the fact that agents need a learning period to fully understand the new monetary policy framework.

The medium-term orientation of the price stability objective allows for the needed flexibility in the conduct of monetary policy. According to the ECB's current strategy, price stability is to be maintained over the medium term, the length of which has deliberately remained undefined. This allows for flexibility in the conduct of monetary policy and contributes to a coherent communication with the public. Flexibility is needed for several reasons. First, monetary policy decisions only affect prices with a time lag, possibly long and variable. Second, shocks affecting an economy (i.e. economic disturbances) are diverse in their nature, their impact on activity and inflation and their persistence, all of which are difficult to assess in real time. If an economy is hit by a so-called demand shock, when activity and prices move in the same direction, then a prompt reaction by monetary policy is often adequate, as it simultaneously tackles price developments and helps stabilise activity. In the case of supply shocks (e.g. related to oil prices), which move prices and activity in opposite directions, a more measured response may be desirable and therefore price stability is attained over an extended horizon. These reasons have been extensively explained by the ECB (Noyer, 2001; Schnabel, 2020a).

The medium-term orientation can also allow the ECB to support the general policies in the EU even though this has not been explicitly considered in the conduct and communication of monetary policy in the past. The TFEU specifies that, without prejudice to the objective of price stability, the ECB shall support the general economic policies in the Union, with a view to contributing to the achievement of the objectives of the Union (Chapter 3). In order to include these additional considerations, the ECB may need to have a more flexible understanding regarding the horizon over which price stability is attained, as discussed in Section 5.1. A more explicit use of the flexibility entailed by the medium-term orientation would likely allow for a greater consistency between decisions and communication.

4.2 Preserving the monetary policy transmission mechanism to achieve price stability

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The success of the ECB in achieving its price stability objective relies on a well-functioning monetary policy transmission mechanism. Just as a water pump depends on a working plumbing system to ensure the water reaches its destination, any given central bank needs a properly functioning financial system to successfully transmit monetary policy impulses through the economy and affect price developments. For example, changes in policy rates in normal times affect money market conditions and then extend to other segments of the financial markets, affecting interest rates at longer maturities and thus economic agents' consumption and investment decisions and, ultimately, consumer prices. If the money market or other segments of the financial system are impaired and policy impulses are not properly transmitted to some sectors or jurisdictions of the euro area economy, then the ability to achieve the price stability objective is put into question.

In conducting monetary policy, the ECB, like any other central bank, may need to take decisions especially directed at ensuring the proper functioning of the transmission mechanism in order to accomplish its price stability objective. There are occasions when the ECB may need to take actions that are not immediately driven by the achievement of the price stability objective, but that are necessary to contribute to the proper functioning of the financial system (Praet, 2016). In some circumstances, this requires being a liquidity provider of last resort, which includes both supplying liquidity to the banking sector and guaranteeing the functioning of several financial market segments and thus the singleness of monetary policy in the euro area.

Monetary policy is first and foremost about providing liquidity at an efficient cost. One of the main roles of any central bank is to stand ready to provide ample liquidity to its counterparties (banks) if needed. This has been defended since Walter Bagehot's (1873) dictum "lend freely to solvent but illiquid firms against good collateral at a high rate of interest", as summarised by Tucker (2014). This principle suggests the need to ensure ample access to central bank credit by solvent institutions facing liquidity difficulties, while safeguarding against risks of moral hazard. In normal times this emergency lending would usually be provided at a penalty cost to encourage institutions to first find market solutions to their liquidity needs and avoid moral hazard. In periods when markets are dysfunctional, the central bank may need to temporarily provide liquidity at a lower cost, in order to solve a lack of coordination problem.

To ensure the conditions necessary to fulfil its mandate, a central bank may need to go beyond its role as lender of last resort (LOLR) to the banking system and ensure liquidity reaches specific market segments. Since the banking system plays an essential role in intermediating funds across economic agents, the role of LOLR traditionally considers only the provision of liquidity to banks, which is crucial to ensure confidence in the system. As the role of other financial intermediaries has increased (non-banks), it has become clear that central banks must stand ready to provide liquidity more broadly, even if indirectly, in order to safeguard the efficient functioning of different financial market segments and ultimately the transmission mechanism of monetary policy. Moreover, some of the securities traded in these markets play the crucial role of serving as collateral in transactions between financial intermediaries, including banks and non-banks, and between banks and the central bank. While in some circumstances the central bank may intervene by purchasing these assets, on other occasions it may need to increase their supply to the private sector (e.g. by making them available through securities lending facilities).

The global financial crisis, the sovereign debt crisis and more recently the pandemic crisis have highlighted the key importance of the central bank in avoiding liquidity shortages and market disruptions. Central banks around the world have played an essential role in containing disruptions in the financial (and banking) system, by providing liquidity at an affordable cost or by purchasing assets to compensate for the collapse of private forms of liquidity, as was the case after the Lehman Brothers' bankruptcy in September 2008 (Chart 4.1 – Panel A). The ECB adopted a number of unconventional measures that in many cases have remained in place (e.g. fixed-rate full allotment tender procedures and longer-term refinancing operations), playing a relevant role in avoiding disruptions in financial markets during the recent pandemic crisis (Section 6.1).

The sovereign debt crisis also highlighted the need to avoid market fragmentation across euro area countries and guarantee the singleness of monetary policy. In the euro area, cross-country sovereign spreads that go beyond what is to be expected given economic fundamentals are particularly perverse, as they also lead to unwarranted differences in financing costs faced by other economic agents and thus hamper the monetary transmission mechanism. The ECB has played a crucial role in stabilising sovereign debt markets and in removing concerns on the reversibility of the euro and the singleness of monetary policy in the euro area (Section 6.1). One example was the announcement of the OMT that followed former ECB President Mario Draghi's statement, in July 2012, that the ECB was ready "to do whatever it takes to preserve the euro" (Draghi, 2012), which was a powerful circuit breaker. Another was the launch of the Pandemic Emergency Purchase Programme (PEPP) in March 2020, with its enhanced flexibility in the implementation of asset purchases relative to the ongoing Asset Purchase Programme (APP) that had been in place since 2015 (Chart 4.1 – Panel B).



Chart 4.1 • 3-month and 10-year interest rate spreads | Basis points

Source: Refinitiv. | Notes: Panel A – the spread is a measure of credit risk in the interbank market, defined as the difference between the 3month Euribor rate and the 3-month Overnight Index Swap rate (OIS). Panel B – the spread is a measure of credit risk of euro area sovereigns, defined as the difference between the yield of a given 10-year sovereign bond and the 10-year German Treasury bond. The vertical lines correspond to the introduction of the fixed-rate full allotment (FRFA) tender procedure and the announcement of the Outright Monetary Transactions (OMT) and the Pandemic Emergency Purchase Programme (PEPP).

When large sovereign spreads reflect risks that are not fully justified by economic fundamentals, the ECB should serve the role of backstop for government funding, preventing expectations-driven crises. The relevance of this role was explicitly stressed by Mario Draghi at the 2014 Jackson Hole Symposium: "Turning to fiscal policy, since 2010 the euro area has suffered from fiscal policy being less available and effective, especially compared with other large advanced economies. This is not so much a consequence of high initial debt ratios – public debt is in aggregate not higher in the euro area than in the US or Japan. It reflects the fact that the central bank in those countries could act and has acted as a backstop for government funding. This is an important reason why markets spared their fiscal authorities the loss of confidence that constrained many euro area governments' market access." (Draghi, 2014b). In countries where public debt is issued in domestic currency, the issuance of money can serve as a guarantee on the public debt and could in principle be used to avoid outright default. The fact that the euro area is a monetary union with one monetary authority but 19 fiscal authorities that issue debt in a common currency is a challenge for the fulfilment of this important role by the ECB. The mandate of modern central banks has been constrained to ensure independence in conducting monetary policy. In the euro area, direct monetary financing of sovereigns is strictly prohibited by Article 123 of the TFEU. However, the ECB may contribute to preventing expectations-driven crises in sovereign bond markets by conducting purchases of public debt securities in secondary markets, hence guaranteeing compliance with the prohibition of monetary financing (Chapter 3). As long as purchases reduce sovereign spreads that are not due to economic fundamentals, the ECB's primary objective is not at risk. Otherwise, they could translate into an implicit default on nominal liabilities, through unexpected inflation, and the nominal anchoring could eventually be outside the control of the monetary authority (Corsetti and Dedola, 2016). As discussed in Chapter 7, in order for the ECB to avoid such scenarios and serve as an effective backstop for government funding, it is crucial that the proper mechanisms are in place to preserve monetary dominance (i.e. monetary policy decisions are solely driven by the fulfilment of the central bank's objectives and not by the need to satisfy fiscal restrictions).

As economic and financial conditions become more stable, the traditional stabilisation role of monetary policy regains importance compared to the need to safeguard the transmission mechanism and the central bank should be prepared for policy normalisation. In the more disruptive periods it is relatively easy to define boundaries between the measures directed at calibrating the monetary policy stance and those needed to preserve the transmission mechanism and avoid fragmentation. While the ECB's role in ensuring the necessary conditions for the conduct of monetary policy is not explicitly acknowledged in its current strategy, the strategy has allowed for flexibility so that the ECB has been successful in taking decisive actions to avoid disruptive scenarios. As conditions become more stable, the ECB should gradually shift from being a liquidity provider of last resort to serve a role akin to a market maker of last resort, i.e. stand ready to also drain excessive liquidity at prevailing market prices and normalise policy (Hauser, 2021). This could minimise risks related to a large central bank balance sheet.

The role of a central bank in contributing to the proper functioning of the monetary policy transmission mechanism does not imply using monetary policy to promote financial stability. The responsibility to act in a corrective manner to eliminate disruptive scenarios and contribute to a well-functioning transmission mechanism should be part of a robust monetary policy strategy of any central bank. This should not be misinterpreted as using monetary policy for preventive purposes related to financial stability, such as "leaning against the wind" policies (e.g. measures to counteract excessive increases in house prices), which should be primarily addressed through macroprudential tools (Section 4.3).

In its role to contribute to the proper functioning of the monetary policy transmission mechanism a central bank may need to adopt measures that at times may appear to be at odds with short-term inflation developments. The proper functioning of the transmission mechanism is a necessary condition for the conduct of monetary policy and the fulfilment of the ECB's price stability objective, thus there is no fundamental trade-off between the two. However, unlike what has happened in the recent past, the ECB may need to act to ensure the proper functioning of the transmission mechanism when inflation is close to its objective. Such measures could be perceived to induce excessive accommodation that could potentially push inflation up and away from the objective. Clear communication is thus required to clarify that the malfunctioning of the transmission mechanism entails risks to price stability at the horizon relevant for monetary policy, i.e. in the medium term, despite being close to the objective at the time action is needed.

Making these considerations explicit in the ECB's strategy would highlight their importance and could contribute to preventing expectations-driven crises and foster more coherent communication with the public. It would help minimise the risk of hesitations should it become necessary to contribute to the proper functioning of the financial system in crisis periods. Moreover, it would help communicate the need for decisions that may not be driven by immediate inflation concerns, but are decisive to ultimately maintain price stability.

4.3 A renewed two-pillar framework for assessing the risks to price stability

João Valle e Azevedo, Diana Bonfim and Carlos Martins

Monetary policy decisions in the euro area are based on a comprehensive analysis of the nature and the extent of risks to price stability. In the current strategy, this analysis is formally organised around two pillars: the economic and monetary pillars. Besides ensuring that no relevant information is overlooked, the role of these two pillars is to provide a framework for analysing and interpreting a wide range of information guiding the decisions of the Governing Council. In addition, it guarantees transparency in the decision-making process and public accountability of decision-makers.

The two pillars translate complementary analytical perspectives on the determination of price developments. The economic analysis aims at assessing the short- to medium-term determinants of price developments, with a focus on real activity and financial conditions in the economy. It considers that price developments over those horizons are influenced largely by the interplay of supply and demand in the goods, services and factor markets. The monetary analysis focuses on a longer-term horizon, exploring the long-run link between money and prices. It mainly serves as a means of cross-checking, from a medium- to long-term perspective, the short- to medium-term indications arising from the economic analysis.

The economic analysis has evolved since 2003, accompanying important changes in the economic landscape. First, structural changes that have affected most economies at least since the mid-1990s have in some cases accelerated in recent years. These are related to globalisation, ageing, digitalisation, climate change, and the degree of economic and technological efficiency as a driver of productivity growth, which may have profound implications for potential growth, the natural real interest rate and also inflation (Chapter 2). In addition, the availability and use of euro area data, together with the development of models to support the assessment of the economic outlook, have improved over time. Eurosystem staff projections have gained prominence in monetary policy decisions, even though their limitations are acknowledged.

The monitoring of monetary aggregates has always been part of the monetary pillar. This is adequately grounded on the undisputed premise that inflation is a monetary phenomenon, i.e. driven by the equilibrium between supply and demand for assets that play the role of money. This analysis is complicated by the existence of a multitude of assets that can be classified as (or are close substitutes of) money. Different definitions of money, based on the liquidity and remuneration of the instruments, generate different monetary aggregates. To complicate things further, these instruments are subject to changing regulation and to technological innovation that affect their supply, demand, and remuneration. Other well-known factors also affect their demand: the level of output, the level of interest rates, and the occurrence of crises. In particular, the level of policy rates, which transmits to all interest bearing instruments in the economy, affects the demand for the various forms of money since it is a measure of the foregone interest rate due to holding money. Taking into account all these factors it is possible to estimate changes in the demand for the instruments contained in a certain monetary aggregate and confront it with the actual change of that monetary aggregate. Significant differences between these measures can hint at inflationary (or deflationary) pressures. The analysis is often simplified and focuses on the growth rate of a monetary aggregate after removing noisy components. If the growth of this monetary aggregate correlates well with inflation, then it is a candidate for the detection of inflationary pressures.

In practice, the correlation between the growth of monetary aggregates and inflation has become tenuous over recent decades, casting doubts on the usefulness of tracking monetary aggregates to detect inflationary pressures. The tight relationship between money growth and inflation, observed over several decades across many countries, especially at so-called low frequencies, became weak as central banks began to adopt inflation targeting regimes, even if these regimes are characterised by relatively low money growth by historical standards. This does not mean that inflation is not a monetary phenomenon. Being unable to find a clear relationship even in the medium to long run could be the result of the success of monetary policy at controlling inflation. If inflation is relatively stable and movements in the growth of monetary aggregates are contained and explained by typical factors, it is not possible to find a clear relationship even in the medium to long run. When nominal interest rates hit their ELB, this analysis is further complicated. Money becomes (more) indistinguishable from the safest and most liquid interest bearing asset, namely

short-term government debt. Money is able to play the role of store of value – like government debt – without a forgone interest rate. Therefore, at the lower bound money growth can become even more unrelated to inflation and thus even less informative. This suggests that, even if in theory inflation is still a monetary phenomenon, it is often not very useful to track monetary aggregates to assess risks to price stability.

The focus of monetary analysis has evolved significantly since 2003, namely by placing greater emphasis on credit and the role of financial intermediation, on developments in asset prices and on identifying risks to the functioning of the monetary policy transmission mechanism. The global financial crisis and the sovereign debt crisis exposed the vulnerability of the monetary transmission process, which reinforced the need for a broader scope of monetary analysis (Hartmann and Smets, 2018). Disruptions associated with the crises forced the ECB to focus on addressing dysfunctional markets and supporting bank lending to the economy. The focus of monetary analysis shifted towards the monetary policy transmission, including analyses of the financial system and, in particular, of the bank lending channel, and on their implications for the real economy. This has contributed to a less clear distinction between the economic and monetary analyses. The extended monetary policy toolkit deployed since the crises has also required an enhancement in the role of monetary analysis to shed light on the transmission channels and potential side effects of the new unconventional instruments (Section 6.1).

Going forward, the comprehensive analysis of risks to price stability which informs monetary policy decisions could continue to be organised around two pillars. However, a reformulation in the focus of monetary analysis in a revised monetary policy strategy appears to be warranted. The economic analysis faces important challenges related to the need to look into new topics, as illustrated by the need for more research on the implications for monetary policy of climate-related risks and policies (Section 5.2). However, those challenges appear to be especially relevant for internal processes and less so for the formulation of the ECB's monetary policy strategy. In turn, the strategy review is an opportunity to clarify the focus of monetary analysis on the transmission mechanism and align the two-pillar approach with the practice of recent years. The separation between the two pillars may contrast with the notion that monetary policy transmission and economic processes are intertwined, but this can be reconciled with careful communication.

The increased focus on transmission remains essential, as the vulnerabilities that endangered transmission in the past crises have not fully disappeared and may be exposed again following the COVID-19 crisis. The proper transmission of monetary policy needs to be monitored at all times, since it is a necessary condition for the fulfilment of the mandate (Section 4.2). The focus on transmission should take a broad perspective, not only ensuring proper interest rate pass-through but also avoiding fragmentation along national borders. Also, the broad set of monetary policy instruments is likely to remain in the policy toolkit. Monetary analysis should contribute to assessing the need, design, calibration and proportionality of policy measures. The financial structure has also changed, with an increasingly relevant role of non-bank finance, which affects the relative importance of the different transmission channels (Chapter 2). Finally, innovation and rising digitalisation in payments are contributing to the emergence of new players and types of payment instruments that may also impact monetary policy and financial stability.

A distinct monetary pillar could help to establish a medium-term perspective. Even if the empirical long-run relationship between money growth and inflation has weakened considerably and may not be useful at all at the ELB, monetary analysis may still be a valuable source of information for assessing risks to price stability. The low inflation regime should not be taken for granted. If there is a regime shift towards higher inflation, this may still be signalled by money growth.

Furthermore, the monetary pillar may gain renewed relevance in the assessment of medium-term risks to price stability if it also incorporates the analysis of the longer-term consistency of inflation, policy rates and the natural real interest rate, or r*, in particular at the lower bound. This is warranted given well-established long-run relations and highlights again that "inflation is always and everywhere a monetary phenomenon", even at the lower bound on nominal interest rates. Over the long run nominal interest rates minus inflation should equal r^* , which is most often assumed independent of monetary policy. It depends on the long-run supply and demand for savings and may vary with the growth of technology and demographics. Hence, r^* permits an analysis of the consistency of the level of nominal interest rates with the inflation objective or, if the level of nominal interest rates is somewhat predictable, hints at a possible anchoring of inflation at a new level. This analysis highlights that inflation is a monetary phenomenon, as opposed to a real phenomenon, and that monetary policy is neutral in the long run with respect to variables such as r^* . In other words, it is the nominal variables – inflation and nominal interest rates – that adjust to conform to r^* . Particularly at the lower bound, when monetary aggregates provide limited information, this analysis permits the establishment of nominal interest rates and their expected path as a nominal anchor for the inflation process. However, using r^* entails two difficulties: it needs to be estimated, as it is unobservable, and the estimates tend to vary substantially, as they are highly model- and horizon-dependent. Nonetheless, even a relatively wide range of values for r^* can be helpful.

In the euro area, r^* could be used to explain why nominal interest rates have been and are likely to remain low for some time, but also to show they should be higher in the longer run. Also, r^* together with the low level of nominal interest rates may help explain why inflation has been low. Estimates of r^* for the euro area over the last years seem to lie within the interval [-1%, 1%] and will likely remain there in the medium term as its longer-term drivers are not expected to bounce in the near future (Fiorentini, Galesi, Pérez-Quirós and Sentana, 2018; Holston, Laubach and Williams, 2017). In order to maintain inflation close to a 2% objective, the ECB's main interest rate in the long run would need to lie within the interval [1%, 3%]. This level is low as regards historical experience, but higher than the current near-zero interest rates. It is safe to argue that current nominal interest rates are far from their long-run equilibrium level, regardless of the uncertainty surrounding estimates of r^* . Using a similar argument, these levels of r^* together with low levels of nominal interest rates for a long time may help explain the low inflation outcomes in the euro area in recent years (Valle e Azevedo et al., 2019; Uribe, 2021) (Chapter 2).

Communicating the likely trajectory of nominal interest rates towards its long-run level (r* plus the objective for inflation) could be helpful for economic agents in the euro area. It could also help minimise the risks of a low inflation trap. The experience of the Fed in this dimension is valuable. For a long time, the Fed has been publishing the individual FOMC participants' projections of the main macroeconomic variables. Additionally, and since January 2012, the Fed updates its "dot plot" every three months. Each member of the FOMC assigns a dot for what they view as the midpoint of the interest rate's appropriate range at the end of each of the next three years and over the longer run. The "dot plot" has become an important indication of the future path of the fed funds rate towards the longer-run nominal interest rate, i.e. r^* plus the target for inflation. The Fed officials found that it was adequate to indicate the trajectory of interest rates towards the long-run levels. This proved to be both a useful guide for policy during the recovery from the global financial crisis and a helpful communication device to explain to the public why interest rates had been so low for so long and why they would eventually have to increase. In the case of the ECB, a less ambitious but still helpful device would be to publish the projections of the Eurosystem's staff for the nominal interest rate in the long run. By emphasising the idea that low levels of nominal interest rates over a prolonged period are not the "new normal", i.e. that nominal interest rates will eventually rise such that the (exogenous) real interest rate r^* is attained, communication can

contribute to avoid that low inflation outcomes lead to a disanchoring of inflation expectations. Indeed, agents ought to understand that the normal level of real interest rates, or r^* , will be achieved with higher nominal rates, not with lower inflation.

Another important aspect that calls for an enhanced role of monetary analysis pertains to the interactions between monetary policy and financial stability, especially when considering their potential implications for price stability. Monetary analysis has evolved to also consider the role of frictions and imbalances that might hinder the transmission of monetary policy through the financial system. This element of monetary analysis should continue to be reinforced. The enhanced access to granular data on financial institutions and instruments provides a unique opportunity to lever and expand the existing knowledge. Conversely, monetary policy is analysed in the assessments of financial stability, mostly with the goal of identifying risks that may emerge in parts of the financial system where imbalances may be stemming from the current monetary policy stance.

The desirability of enhancing monetary analysis with financial stability considerations must not be mistaken with the potential adoption of "leaning against the wind" policies. In the latter framework, a monetary policy tightening could be used to counter the build-up of risks in the financial system. The risks of adopting such a strategy are high. Existing research shows that monetary policy is too "blunt" to deal effectively with financial stability risks. Furthermore, losing sight of the price stability objective becomes a strong possibility. Monetary policy is indeed able to "get into all the cracks", but this means that it lacks effectiveness in dealing with well-identified and specifically-located risks to financial stability. In addition, while before the global financial crisis the macroprudential framework in most advanced economies lacked formal instruments to effectively address risks, this has changed. Today, macroprudential authorities in the euro area are equipped with mandates, objectives and tools to identify and deal with risks to financial stability. As such, macroprudential policy should be the first line of defence to deal with these risks. This makes even more sense within a monetary union where financial cycles are not fully synchronised.

While "leaning against the wind" may not be desirable as a general principle, especially when risks continue to build up, keeping some flexibility to deal with specific situations may be warranted. This might be the case when financial stability risks are widespread in the euro area, with potentially disruptive effects. Furthermore, the macroprudential framework is still a work in progress. Strengthening and improving this framework is thereby crucial to avoid overburdening monetary policy with the responsibility to deal with emerging risks to financial stability. Finally, monetary policy can play an important role in restoring financial stability once risks have materialised. In such cleaning phases, there are unequivocal positive spillovers between monetary and macroprudential policies.

5. Without prejudice to price stability, contribute to the achievement of the objectives of the Union

Without prejudice to the objective of price stability, the ECB shall support the general economic policies in the Union with a view to contributing to the achievement of the objectives of the Union, including balanced economic growth, full employment and improvement of the quality of the environment. Since the last strategy review, monetary policy has played a critical role in reacting to severe crises. The effects of ECB measures on the real economy and the lessons learned from past decades warrant a discussion on whether the monetary policy strategy could be adapted to acknowledge more clearly employment and output considerations. Also, growing concerns regarding the impact of climate change on the global economy raise the question of the type of role the ECB could play in helping the transition towards a low-carbon economy.

5.1 Flexible use of the medium term and of the reaction function to support economic growth and full employment

João Valle e Azevedo and Nuno Monteiro

The ECB's current monetary policy strategy is focused on the commitment to the primary objective of price stability. Employment and economic activity considerations underlie the medium-term orientation of the price stability objective. Since keeping inflation at a specific figure at all times is infeasible and arguably undesirable, the medium-term orientation allows for the ECB to respond to different economic shocks in a flexible manner according to their nature (Section 4.1). For some types of shocks prompt monetary policy action to preserve price stability could also help stabilise the economy (e.g. demand shocks affecting both output and prices in the same direction). However, in the case of shocks that move output and prices in the opposite direction (e.g. supply driven oil price increases) a swift reaction to restore price stability may be detrimental for employment and output, which in turn could end up affecting future price developments. In these cases, a gradual monetary policy response could achieve price stability over a longer horizon while avoiding the undesirable impacts on the real economy. Employment and output concerns cannot be overlooked as monetary policy has the potential to strongly affect them – and thus economic welfare – given the available instruments.

When demand forces dominate, it is reasonable for monetary policy to react to developments in employment and economic growth since affecting the economic slack may contribute to bringing inflation back to the central bank's aim. When demand forces largely account for inflation developments over the short to medium term, the stabilisation of employment and output around their potential levels is often associated with the stabilisation of inflation around the objective: if inflation is below the aim, monetary stimulus, by driving the economy towards full employment and potential output, generates upward pressure on prices.

In face of supply shocks, the usefulness of a flexible medium-term orientation to safeguard against destabilising policy reactions is unquestionable. The post-pandemic period is a particularly useful case to consider, insofar as scars on the supply side and a strong rebound in demand can lead to a potentially sizeable – but arguably temporary – rise of inflation. A tightening of monetary policy in response to these short-term pandemic-related developments in inflation could jeopardise a recovery that ought to be swift and end up having unwarranted effects on inflation further ahead. Instead, supporting the recovery would likely help achieve the inflation aim in the medium term. Monetary policy should not add turbulence to turbulent times as it may hinder the fulfilment of the primary objective of price stability besides generating potentially significant welfare costs.

Theoretically, the consideration of employment and output growth in the monetary policy reaction function is justified by a concern with economic welfare.

Acknowledging a more explicit role for employment and output growth in the ECB's monetary policy reaction function may be warranted given the lessons learned from the last decades, in particular in view of the significant contribution of monetary policy to macroeconomic stabilisation. The context in which the current strategy was initially outlined differs significantly from nowadays. The three crises experienced by the euro area since 2008 show that the size and persistence of shocks, and not only their nature, matter for the trade-off between inflation and economic growth. The ECB's monetary policy response to these events had a remarkable impact on employment and economic activity, despite the difficulties in achieving the price stability objective (Section 6.1). This suggests that monetary accommodation may be justifiable to mitigate the depth of recessions and support the recovery phases, even if the impact on inflation is smaller and more patience regarding the return of inflation to its aim is required. Moreover, large negative economic shocks leave scars, particularly in the labour market and with different effects across socio-economic groups. There is evidence that unemployment hysteresis (i.e. temporary shocks having persistent effects on unemployment) affects mainly the young, the elderly, low-skilled and low-educated workers (Cutuli and Grotti, 2020; Hotchkiss and Moore, 2018; Nilsen and Reiso, 2011; Quintini and Venn, 2013). In this context, attributing a greater role to employment considerations in addition to expanding the ECB's analysis to better understand labour market heterogeneity and the longer-term effects of policy measures could enhance its decision-making and its potential contribution to welfare. This contrasts with the somewhat instrumental considerations motivated by the traditional relationship between economic slack and price developments.

A more explicit recognition of employment and economic growth concerns in the ECB's strategy could help motivate and explain policy actions. As stressed above, such concerns reinforce the case for prolonged monetary policy support following very large negative shocks. One of the lessons learned from the past decade is that massive monetary accommodation may contribute to avoiding deflation but may not suffice to bring inflation close to the aim in some circumstances. However, from a broad welfare perspective, and given the sizeable effects of monetary policy on employment and output, the overall adequacy of the monetary policy support in the past decade seems unquestionable. In hindsight, recognising a larger weight for employment and economic growth in policy decisions may come along with more patience regarding the horizon over which price stability is attained, thereby providing an explanation for policy actions more conformable with their effects.

A clearer role for employment and output growth reinforces the flexibility embedded in the medium-term orientation, which may prove helpful if persistent low inflation is increasingly determined by long-run forces and slack still persists. With nominal rates at the ELB for a long period, monetary policy may have a more limited capacity to further stimulate the economy, even if the economy is not operating close to potential. Real rates may be close to their current natural level given the observed policy interest rates and the low inflation levels. In this situation inflation developments may be increasingly determined by longer-run monetary forces, and raising policy rates may be necessary in order to re-anchor inflation around the objective (Section 4.3). Inflation and nominal rates may well increase simultaneously in such a way that real rates remain roughly constant. Even though these outcomes are theoretically plausible and have some empirical support there are risks that this policy has unintended effects, and more so if the economy is still weak. In such a scenario, it could be reasonable to temporarily delay policy normalisation in order to avoid potentially destabilising effects in the real economy and eventually on inflation.

Also in a context where low inflation is increasingly determined by long-run forces, the enhanced monetary policy reaction function would help justify a normalisation of policy measures when the economic situation improves, and make its communication more straightforward. This shows the acknowledgment of more explicit concerns with employment and output growth does not imply an added flexibility only to justify easing measures. A favourable employment and output growth scenario could make a normalisation of monetary policy or a reversal of policy accommodation easier to explain even if current inflation is still low. An enhanced focus on employment and output growth would also help gauge if a slow normalisation is feasible and whether it has undesirable impacts on output and inflation, besides providing an easier justification for such a move. The beginning of the normalisation of interest rates by the Fed in 2015 was certainly easier to justify because of its dual mandate (Board of Governors of the Federal Reserve System, 2015): "(...) economic activity has been expanding at a moderate pace. (...) The Committee judges that there has been considerable improvement in labour market conditions this year, and it is reasonably confident that inflation will rise, over the medium term, to its 2 percent objective. Given the economic outlook, and recognizing the time it takes for policy actions to affect future economic outcomes, the Committee decided to raise the target range for the federal funds rate (...)". Even though the ECB does not have a dual mandate, acknowledging employment and output considerations in the policy reaction function may provide a more straightforward explanation for a reversal of policy measures when inflation is low, as long as this is consistent with attaining price stability over the medium term.

Embracing more clearly employment and output growth considerations could also contribute to increase the credibility of the ECB. This would help to highlight further the overall strong impacts of monetary policy on the economy, especially in crisis times, and reinforce the assessment of the ECB's monetary policy as overall successful. Even though the ECB's mandate is not a dual mandate, the ECB could also be assessed by its contribution to the stabilisation of the real economy. By granting a more explicit role to employment and output growth on account of welfare considerations, the positive assessment of ECB's monetary policy could be justly reinforced given its contribution to a stable macroeconomic environment, despite somewhat persistent deviations of inflation from the objective.

Finally, this renewed orientation would be in line with European citizens' calls for the ECB to address economic welfare more broadly. According to Eurosystem's listening activities, public perception of the overall economic situation has deteriorated over the past decade (ECB, 2021b). The public also appeared to be concerned about the future, with a rather bleak outlook for economic wellbeing. Long-term effects of the pandemic, namely deteriorating employment conditions and fears of weaker economic growth were listed as major concerns, especially by younger individuals. In this context, the ECB's role in supporting the economic growth the pandemic crisis was praised. The scope of the ECB's mandate was also discussed, with some calls for addressing broader economic issues, such as promoting employment and economic growth. The Federal Reserve concluded in its recent strategy review that the maximum employment goal should be broad-based and inclusive, following takeaways from listening events that pointed to the importance of achieving and sustaining a strong labour market, especially for low- and moderate-income communities (Powell, 2020).

There are certainly valid concerns with giving a more explicit role to employment and output growth in the monetary policy reaction function, but these can be addressed by reinforcing that the precedence of price stability is unsurmountable. Conflicts between price stability and employment and output growth could occasionally arise, but the primary objective would always be assured and this should be reiterated. It is also important to stress that this does not imply a comeback to the 1970s' style of monetary policy conduct. Reaffirming the primacy of price stability, together with an increased role for employment and economic growth in the reaction function,

could be contrasted with the undesirable activist monetary policy of those stagflation periods, where (high) inflation itself was regarded as an instrument to freely promote employment and economic growth. The current clear mandate of price stability, the onset of rules and principles rather than discretion and the prominence given to independence in the prosecution of the mandate remain the appropriate environment for every central bank's conduct of monetary policy.

Giving a more explicit role to employment and output growth in the ECB's monetary policy strategy, while pursuing the primary objective of price stability, would improve the flexibility and credibility of its policy. It would also reflect the lessons learned from the last decades of monetary policy conduct.

5.2 Addressing climate change

Bernardino Adão and Nuno Lourenço

The objectives of the Union include a high level of protection and improvement of the quality of the environment. The 2015 Paris Agreement set the stage for the international response to climate change and as such the EU has established a target for the reduction of greenhouse gases (GHG) emissions: carbon neutrality by 2050. Climate change is triggered by a high concentration of carbon dioxide and other GHG in the atmosphere. It affects ecosystems throughout the world, by causing global warming, more frequent extreme weather events and rising sea levels. The economic effects of climate change are complex, long-lasting and heterogeneous across geographies.

Climate change is a global negative externality and in the presence of externalities markets fail to provide an efficient allocation of resources. Economic agents engage in activities that involve GHG emissions but do not take into account the negative effects of their actions on others. As a result, emissions are higher than they should be. One of the economic solutions to this problem has been known since the writings of Pigou (1920). It lies in the implementation of a tax on GHG emissions at the source that must be equal to the total marginal damage the polluter is not paying for. This provides incentives to producers to make their operations less carbon-intensive. Another policy prescription for climate change, drawing on the work of Coase (1960), is the implementation of tradable carbon rights, e.g. EU emissions trading schemes.

Since the damage caused by the burning of fossil fuels is identical regardless of where pollution occurs, the tax on emissions should be set globally. The global nature of the externality calls for a coordinated response across governments around the world, which have the suitable instruments to take corrective actions. Hassler, Krusell, Olovsson and Reiter (2020) estimate that cost inefficiencies from not setting a uniform carbon tax are sizeable. For instance, a carbon tax in the EU alone would not attenuate the global mean temperature increase. However, countries have incentives to free ride on policies aimed at curbing emissions, as they can refrain from their own climate change mitigation measures and still benefit from a lower concentration of GHG in the atmosphere. To enforce global cooperation, Nordhaus (2015) suggested the creation of a "Climate Club", in which members agree to tax carbon and impose trade sanctions on carbon-intensive goods from non-member countries.

Climate change is surrounded by uncertainties in several dimensions, including the mechanism through which GHG emissions affect the natural climate system, the economic impact of a given change in climate, and governments' actions. For example, the extent to which climate change triggers a tipping point, i.e. a point of no return in the climate system, remains uncertain, and its economic impact is even more undetermined. Actions to address climate change can take two forms: (i) mitigation, i.e. actions that lower emissions of GHG into the atmosphere and (ii) adaptation, which refers to actions that reduce the damages (or increase the benefits in some

regions). Regarding mitigation policies, the main uncertainties concern the timing of implementation of more severe constraints or regulations and how these will materialise. As for adaptation, the different options that will become available (e.g. developing drought-resistant crops) and their costs are key sources of uncertainty. The time horizon underlying climate change phenomena is typically very long, far longer than economists are used to, placing the burden on future generations. Under these conditions, uncertainty is inevitably large, and the degree of risk aversion as well as how future losses are valued today are key factors for policy evaluations.

The extent of governments' intervention will shape the transition to a carbon-neutral economy. A timely adaptation and the prosecution of a mitigation strategy will be less costly in the long run, as opposed to postponing the adoption of climate policies. Climate risks will be more pervasive and higher in magnitude and frequency under a disorderly transition. These risks spread to the real economy via supply shocks and to the financial system through asset stranding, whereby an unanticipated change in future policy can make carbon-based assets lose their value today.

Climate change poses constraints on the conduct of monetary policy, especially under a disorderly transition where risks are more prevalent. First, it will likely have a negative impact on *r**, increasing the probability of the policy interest rate hitting the ELB. Second, climate change likely affects countries differently, which might increase the difficulty in maintaining price stability in the euro area with a single monetary policy. Third, it may change the monetary policy transmission mechanism by affecting banks and other financial market participants through additional uncertainty, thus inducing higher volatility in financial markets. Finally, supply shocks will become more recurrent due to an increased frequency of extreme weather events.

Several measures can be devised to assess financial risks associated with climate change. First, standardised disclosures of climate-related data sustained by the development of a clear taxonomy and reporting standards are crucial. Actions in this regard must be clear and verifiable, to avoid conflicts of interest. Second, fostering dialogue with rating agencies and other independent institutions is also key. Third, promoting research on climate change risks is also valuable. This is an area where central banks can contribute with their own internal models to study specific policies. Finally, central banks should avoid adding to policy uncertainty, i.e. the private sector and regulated financial institutions should not be left to speculate about unknown policy interventions. The ECB is already taking steps to address many of these topics.

Taking a more active role in addressing climate change needs to be assessed carefully by the ECB given the inherent trade-offs with the fulfilment of the primary objective, besides the fact that monetary policy has very limited effects on climate change. First, monetary policy instruments may be designed to take into account climate considerations (e.g. green bond purchases) but attaining the primary objective will always prevail. Therefore, the future normalisation of monetary policy and the consequent reduction of the central bank's balance sheet could interfere with the maintenance of these green bonds. Second, claiming a prominent role in addressing climate change could be detrimental to the ECB's reputation, in view of the inadequacy of monetary policy instruments for this purpose. These reputation costs could undermine the ECB's ability to act in the future. Finally, enlarging the scope of the ECB's actions may submit it to political pressure and undermine its independence, an essential factor to achieve its main objective. In fact, central banks are granted independence under the condition that they operate within a limited sphere of competence, and can be held accountable against clearly defined objectives.

The ECB has applied the concept of market neutrality to help guide monetary policy implementation, in line with the requirement to act in accordance with the principle of an open market economy with free competition as stated in the TFEU. In the absence of market failures, market neutrality guarantees that asset purchases have a minimal impact on relative prices and on the efficient allocation of resources. This means that the purchase of corporate bonds by the

ECB is proportionate to the amount of bonds outstanding. Deviations from market neutrality, such as operational and risk management requirements for collateral and purchase eligibility, can be justified if deemed necessary to achieve price stability. Additionally, these deviations might be justified under a market failure such as climate change.

The ECB's purchases in the corporate bond market overweight polluting sectors, but modifying its holdings to be greener may not promote an efficient allocation of resources and would likely have limited effects on tackling climate change. When the carbon tax is set appropriately, market efficiency is restored and a monetary policy with green bond purchases or Targeted Longer-Term Refinancing Operations (TLTRO) with green features would introduce a distortion in the economy. If it is set too low, then a monetary policy with green features could be welfare improving as it would contribute to reducing GHG emissions in the EU. Such measure could be justified if the associated costs were relatively small and the benefits of the reduction of emissions in the EU were substantial. However, recent work by Hassler et al. (2020) suggests that subsidies to green energy foster more use of energy in total but have limited effects on global temperature. Additionally, they advocate that the costs of setting an inappropriate carbon tax are highly asymmetric. Setting an overly high tax is not very detrimental to social welfare as opposed to setting an overly low tax. Finally, a more active role of central banks in addressing climate change may generate unjustified reliance on the abilities of monetary policy and incentivise governments to set low carbon taxes, as these are typically unpopular.

Exercising prudence would be advisable given that acting with inadequate instruments to address climate-related objectives may have unintended consequences. While there is scientific consensus that global temperatures are rising, it is almost unanimous that governments are at the root of the transition to a low-carbon economy. Monetary policy cannot serve as a substitute for policy action taken by governments. This does not mean inaction. In fact, as described above, much can be done by the ECB within the scope of its mandate.

6. Monetary policy instruments and communication

Monetary policy instruments used by the ECB have expanded over the last decade and are currently seen as an integral part of the strategy as they add credibility to the pursuit of the ECB's primary objective. The growing complexity of tools together with increased public scrutiny have called for an intensification of monetary policy communication, which has also been used as an instrument in itself. These changes require a reassessment of the toolkit and of the communication practices that might best serve the ECB in the future.

6.1 A state-contingent use of instruments to ensure the policy stance and smooth transmission

Rúben Branco and Carla Soares

Since the global financial crisis, the ECB has broadened its set of instruments beyond conventional interest rate policy. Prior to the crisis, policy rates would set the policy stance while credit operations were used to manage the liquidity available to the banking system with a view to steering money market interest rates in line with policy rates. As the crisis unfolded, the ECB deployed new instruments in response to emerging challenges, namely impairments to the regular transmission of policy and the lower bound on policy rates (Table 6.1). Hartmann and Smets (2018) and Rostagno et al. (2019) provide an overview and an evaluation of the ECB's monetary policy over the last two decades. The new instruments introduced in this period included enhanced liquidity provision tools, outright asset purchases, forward guidance on policy rates and negative interest rates.

	Global financial crisis	Sovereign debt crisis	Low inflation and low interest rates	Pandemic crisis
Interest rates			NIRP (Jun. 14)	
Liquidity provision and credit support	Agreements with other central banks (Dec. 07) Maturities expansion (Mar. 08) FRFA (Oct. 08) Collateral expansion (Oct. 08) 1-year LTRO (May 09)	VLTRO (Dec. 11)	TLTRO (Jun. 14)	PELTRO (Apr. 20)
Asset purchases	CBPP (May 09)	SMP (May 10) OMT (Aug. 12)	APP (Jan. 15)	PEPP (Mar. 20)
Forward guidance			Forward guidance on policy rates (Jul. 13)	

Table 6.1 Main policy instruments introduced by the ECB since the global financial crisis

Source: ECB. | Notes: Dates upon which each instrument was first announced. FRFA – fixed-rate full allotment tender procedure in refinancing operations, where banks' liquidity bids are fully satisfied provided they have enough collateral to pledge. CBPP – Covered Bond Purchase Programme. VLTRO – Very Long-Term Refinancing Operations. SMP – Securities Markets Programme. OMT – Outright Monetary Transactions. NIRP – negative interest rate policy refers to negative values of the deposit facility rate. TLTRO – Targeted Longer-Term Refinancing Operations, that include incentives for banks to provide credit to the economy. APP – Asset Purchase Programme (expanded programme encompassing purchases announced on Sep. 14). PELTRO – Pandemic Emergency Longer-Term Refinancing Operations. PEPP – Pandemic Emergency Purchase Programme.
During the global financial crisis, the sovereign debt crisis and the pandemic, several of the new instruments aimed at overcoming impairments to the monetary policy transmission mechanism. In broad terms these instruments were used to respond to: (i) liquidity shortages in the banking system, (ii) dysfunctional market segments and fragmentation across euro area countries and (iii) expectations-driven crises. The ECB responded to liquidity shortages during the global financial crisis by offering refinancing operations with longer maturities, expanding the collateral framework and adopting a full allotment of liquidity bids at a fixed rate. These measures proved to be particularly effective in stabilising financial markets and helped support the flow of credit to borrowers and avoid a credit crunch (Angelini, Nobili and Picillo, 2011; Alves, Bonfim and Soares, 2021; Andrade, Cahn, Fraisse and Mésonnier, 2019). The global financial and sovereign debt crises also generated disruptions in specific market segments (e.g. wholesale funding) and heightened distress in specific euro area countries. The early asset purchase programmes tackled these disruptions by targeting either banks' funding through the Covered Bond Purchase Programme or distressed sovereign debt markets through the Securities Markets Programme (SMP). Foreign exchange swap lines were also used to respond to tensions in banks' funding in foreign currency. During the pandemic crisis, the ECB launched the PEPP to address the potential resurgence of fragmentation across euro area countries. Finally, the ECB's intervention was also aimed at curtailing speculative concerns about the integrity of the euro area that emerged in late 2011 and in the first half of 2012. If left unchecked, such concerns could end up validating themselves (a socalled expectations-driven crisis). Persistently high interest rates, not fully justified by economic fundamentals, could lead to default by sovereigns with otherwise sustainable debt levels, with perilous consequences for the monetary union. The announcement of the OMT was particularly effective at preventing such an expectations-driven crisis, given the ECB's readiness for unlimited purchases of certain sovereign bonds although subject to strict conditionality. The SMP and the OMT were effective in reducing yields and volatility in bond markets, especially in distressed countries, via the reduction in perceived default risk (Krishnamurthy, Nagel and Vissing-Jorgensen, 2017). Despite the difficulty in fully grasping the impact of these policy measures, several studies point to their effectiveness in avoiding disruptive and damaging scenarios and supporting financing conditions (Banco de Portugal, 2015; Hutchinson and Mee, 2020).

As nominal rates in the euro area approached the ELB, unconventional instruments were useful to deliver the monetary policy stance required to achieve price stability. The negative interest rate policy (NIRP) and forward guidance on policy rates were two of the instruments used. NIRP had an expansionary effect, allowing to break the zero lower bound on interest rates in financial and credit markets (Altavilla, Burlon, Giannetti and Holton, 2019). However, the effect of rate cuts in negative territory on the real economy is possibly more muted than cuts in positive territory (Bittner et al., 2021; Ulate, 2021). Forward guidance has contributed to reducing uncertainty about the future path of policy rates and to compress the yield curve, i.e. to push interest rates down over the whole maturity spectrum. The effects appear to have varied according to the type of forward guidance linked to specific dates or economic outcomes appears to be especially effective in reducing uncertainty and shifting upwards expectations about economic activity and inflation (Andrade and Ferroni, 2021; Ehrmann, Gaballo, Hoffmann and Strasser, 2019). However, its effects may diminish as the yield curve becomes flatter for even longer maturities.

Purchases of private and public debt and credit support tools were other instruments used to deliver monetary accommodation. By purchasing longer-term bonds, the ECB induced a strong reduction in the term premium, i.e. the premium investors demand to compensate for the uncertainty about the future path of short-term interest rates. This incentivised investors into longer maturity and riskier assets while freeing banks' balance sheets from such assets (Andrade, Breckenfelder, De Fiore, Karadi and Tristani, 2016). Besides the APP, purchases under the PEPP

were also used at a later stage of the pandemic crisis to ease the general monetary policy stance and safeguard medium-term price stability. Credit support tools such as the TLTRO were used to support bank lending conditions, especially to firms, thus contributing to support economic activity (Andreeva and García-Posada, 2021). Both asset purchases and the TLTRO had a dual contribution: ensuring a smooth transmission of policy and providing monetary accommodation.

The combination of instruments improved effectiveness, compared to the use of each instrument in isolation. The instruments used by the ECB in the low-inflation and low-rates environment benefitted from their interaction and mutually reinforcing effects, though it is very hard to disentangle the macroeconomic effects of each policy (Rostagno et al., 2019). Without NIRP, forward guidance would hardly have been able to induce expectations of further rate cuts into negative territory. In the absence of forward guidance, interest rates would likely have had to be cut further to attain the same effect. Another example is the mutually reinforcing interaction between the APP and forward guidance. The APP leads to a compression of the yield curve by reducing the interest rate premium charged on longer-term debt. This premium is further reduced by forward guidance as it curbs uncertainty about the future path of policy rates. Given that different instruments may have similar effects, namely on the yield curve, the optimal combination may not be easy to achieve and there could be an inefficiency risk associated with potential redundancies. For instance, a credible enhanced forward guidance may in principle achieve an effect on the yield curve similar to that of larger asset purchases.

Unconventional instruments used by the ECB provided strong monetary accommodation as inflation remained below the objective, and contributed decisively to macroeconomic stability, avoiding disruptive scenarios. The overall macroeconomic impact of the policy mix is hard to estimate, not only because it is difficult to assess the potential extreme scenarios that were avoided, but also due to confounding factors such as other macroeconomic policies. Evidence points to a positive impact, especially on output growth, but the range of estimates is wide and uncertain. Some estimates regarding the policy mix used between 2015 and 2018 point to an average impact on annual output growth of around two thirds of a percentage point and an average impact on annual inflation of around one third of a percentage point (Rostagno et al., 2019). This is broadly in line with estimates for the impact of the policy response to the pandemic crisis (Hutchinson and Mee, 2020). A significant impact in crisis periods may be more reasonable, as the counterfactual in the absence of a policy response would be quite damaging. Although the inflation rate has remained below the objective in recent years, the ECB has successfully managed to curtail tail risks, avoiding deflation and disruptive scenarios in the euro area.

Looking forward, the expanded set of monetary policy instruments will remain useful and its use should be contingent on the economic circumstances and the shocks to be addressed. An ample toolbox is critical to fulfil the dual role of ensuring the proper functioning of the transmission mechanism and delivering the appropriate policy stance, especially in the vicinity of the lower bound on interest rates. Away from the ELB, policy rates remain the most relevant instrument to set the monetary stance needed to attain price stability. As nominal interest rates approach the ELB – a scenario increasingly likely in the foreseeable future – and conventional policy space is gradually reduced, the prompt use of unconventional tools may be advisable. Both away and close to the ELB, the use of unconventional instruments is warranted also to address shocks that disrupt specific market segments or jurisdictions and hamper the transmission mechanism. Flexibility remains a key principle when choosing the type and calibration of the instruments to be used, depending on the shocks and disruptions to be addressed. As in the past, each instrument may serve several purposes and the combination of instruments is valuable to maximize effectiveness. Finally, communicating the broad principles guiding the use of different instruments, in a similar fashion to what was done in the past (Draghi, 2014a), would bring clarity and transparency to the monetary policy strategy.

Unconventional instruments may also need to be adjusted according to a continuous cost-benefit analysis. Although benefits from the use of unconventional tools have exceeded the costs so far (BIS, 2019), continuous monitoring is needed. Particular attention should be paid to unwanted distortions in financial markets resulting from the increased presence of the central bank, such as price distortions and excessive risk taking. The calibration of future asset purchase programmes to provide monetary accommodation at the ELB needs to consider the risks of creating scarcity in some market segments. These risks materialised already in the past, when the APP contributed to the shortage of high-quality liquid assets, mitigated afterwards through the securities lending programme (Corradin et al., 2020). Likewise, the use of NIRP should be cautious, especially if, as it turned out, it persists for a long period of time. In this case the net benefits may be limited and potential negative impacts on deposits and the behaviour of banks, namely in response to low profitability, may raise concerns over financial stability. Mitigation measures such as the tiering system (which exempts a share of banks' reserves with the ECB from negative interest rates) can alleviate such concerns, but at the cost of higher complexity. Moreover, NIRP acts as a tax on banks, possibly inducing distortions that still need to be fully assessed.

Extended use of forward guidance at the ELB should not be regarded as the "new normal", in order to avoid detrimental effects on the convergence towards the price stability objective. When faced with very low or even negative nominal interest rates for an undetermined period of time, agents may believe that this low policy rate regime is the "new normal". Given that over the long run nominal interest rates and inflation tend to move in the same direction (Chapter 2), agents may adjust their inflation expectations downwards, away from the policy objective (Benhabib, Schmitt-Grohé and Uribe, 2001). Instruments such as forward guidance (along with NIRP), aimed at keeping nominal rates at very low levels to raise demand and push inflation up towards the central bank's objective, may end up having the opposite effect if maintained indefinitely. Therefore, it is crucial that a "low-for-long" policy is clearly communicated as temporary, even if normalisation should only occur in a very gradual manner over a long time span.

6.2 Accessible, tailored and engaging communication to enhance effectiveness and trust

Alexandre Carvalho and Rita Duarte

Communication plays a central role in the conduct of monetary policy and has changed substantially over the years. The way by which central banks disclose information on their objectives and actions conveys information on the present and future stance of monetary policy. If correctly built onto economic agents' expectations, this information increases the predictability of monetary policy, which may reinforce its impact on the economy. Communication also makes independent central banks' decisions more transparent, thus enhancing their accountability while fostering trust. Since the mid-1990s, central banks' communication has shifted from being intentionally opaque towards becoming more transparent, to better steer economic agents' expectations and address higher demands of accountability of public institutions. The way the public accesses and consumes information has also evolved towards a continuous news cycle increasingly rooted in real-time channels (e.g. social media). This has required central banks to enhance their communication to get their messages through, especially to wider audiences.

After the global financial crisis, like many other central banks, the ECB stepped up its communication efforts and used communication as a tool in itself. The ECB continued to use the press conference after monetary policy meetings and related materials as its core communication elements, but began disclosing more detailed information on economic projections and on policy instruments to explain the rationale and the functioning of the unconventional measures. At the

same time, the number of public interventions by members of the Executive Board increased and the ECB began publishing the accounts of the Governing Council monetary policy meetings. When policy interest rates moved closer to their lower bound, the ECB used communication to steer expectations about future interest rates (forward guidance) in stark contrast with the "we never pre-commit" statement used in the past. The ECB's communication remained mainly geared towards financial market participants, given their role in the early stages of monetary policy transmission, and towards other expert audiences (e.g. media) acting as transmitters of ECB's policy decisions. More recently, the ECB has also developed efforts to reach out to wider and less specialised audiences by exploring new formats and communication channels.

ECB's communication with experts has been largely successful, especially in steering interest rate expectations. In particular, available evidence suggests that forward guidance has contributed to reducing uncertainty about the future path of policy rates and to pushing down market interest rates (Section 6.1). The ECB's communication appears to have been less able to manage beliefs about future inflation over recent years. Successive years of inflation below the ECB's objective may have raised doubts as to the ECB's ability or willingness to deliver on its mandate and may have contributed to less well-anchored inflation expectations (Chapter 2).

ECB's efforts to reach out to wider and less specialised audiences have been less effective, as inaccurate inflation perceptions and large knowledge gaps regarding the ECB's objectives and tasks persist. Typically, inflation expectations of households and firms tend to be less consistent with the central bank's inflation aim than those of experts. Surveys of euro area households show that their inflation expectations for the next 12 months are usually highly dispersed and systematically above the ECB's objective. Inputs received during the listening activities of the strategy review also showed that there is a common perception that inflation has increased more than was actually the case, sustained by higher housing costs and more expensive groceries (ECB, 2021a). Many respondents to the ECB Listens Portal signalled concerns with the impact of overly high inflation on their purchasing power and savings. Moreover, a significant share of respondents reported feeling inadequately informed or not informed at all about the ECB or their national central bank. This generalised lack of knowledge and interest, also observed in other economies, may be partly due to central banks' success in stabilising inflation, which makes the costs of acquiring information much higher than its benefits (rational inattention). The complexity of monetary policy topics, the use of economic jargon and the focus on communication with financial markets with little perceived efforts to reach the general public were also highlighted as reasons for this lack of knowledge.

A poor understanding of the ECB by the wider public falls short of its social contract to serve European citizens and build trust. In line with other central banks and European institutions, public trust in the ECB declined during the global financial and sovereign debt crises (Chart 6.1). This decline in trust is found to be related to the deterioration of euro area economic conditions, the general lack of trust in European institutions to tackle the crises and the public's association of the ECB with the severity of problems in the banking sector at that time (Ehrmann, Soudan and Stracca, 2013). Subsequently, public trust in the ECB has been slower to recover, namely when compared to trust in the euro. This divergence may be partly explained by the general public's lack of attention and knowledge about the ECB's mandate in tandem with ineffective communication.

Improving the clarity of ECB's communication is crucial at a time when its responsibilities have increased and public trust has declined. Effective communication nowadays demands explanation and rewards readability, relatability and transparency. Conveying clear messages using simple and accessible language is key to reach out to all audiences. Effective communication also requires adaptation according to the audience. Layered communication to serve the needs of different audiences can increase understanding of policy decisions, as suggested by the experience of the Bank of England (Bholat, Broughton, Parker, Ter Meer and Walczak, 2018). A visual summary based

on graphics and simple messages is found to work well with the wider public and social media. Subsequent layers can include a simple narrative around the main policy message, followed by more detailed material aimed primarily at well-informed market participants and professional media. The latter would also benefit from using a language free of jargon and from adopting a narrative-based explanation of policy decisions in a way that is coherent with incoming data and consistent over time.



Chart 6.1 • Public net trust of the euro area | Balances

A stronger presence of national central banks' governors or other representatives on general interest media could also enhance the understanding of the ECB and of its monetary policy decisions. This would directly address the calls of the general public for information on monetary policy in their own language. In the case of policy decisions, communication would have to be carefully designed to keep the intended policy message as precise as possible, which is crucial for effective communication (Blinder, Ehrmann, Fratzscher, De Haan and Jansen, 2008). Public voicing of disagreement by Governing Council members after decisions are taken may undermine the expected impact of policy announcements and hamper their understanding, as mentioned by some respondents during the listening phase. Nonetheless, allowing more space in communication (e.g. in the monetary policy accounts) for the range of views weighed in the policy decision may help build trust in the ECB's decision-making process.

Broadening the outreach to wider audiences is key to tackle the deficits of understanding and trust in the ECB. This requires explaining, engaging and educating. People's views expressed during the listening phase on ways the ECB could improve communication also point in this direction. Explaining the benefits of price stability or the impact of monetary policy decisions on people's daily lives in a simple manner is crucial to manage their expectations and dispel inaccurate perceptions about what the ECB can and cannot do. This simplified communication is not risk free. There are concerns that oversimplification induces a false sense of certainty about the economy that is bound to lead to disappointments sometime in the future and ultimately reduce trust. Haldane, Macaulay and McMahon (2020) suggest that these risks can be mitigated if central banks complement their efforts to explain with engagement and education activities. Engaging the

Sources: European Commission Eurobarometer and Eurostat (Banco de Portugal calculations). | Notes: The survey is conducted twice a year in April and October. Net trust calculated as the difference between the share of respondents claiming to "Trust" the subject of the question and the share of respondents stating that they "Don't trust". Euro area computed as the weighted average of individual countries' responses using their population share in 2011.

general public requires speaking directly to (and with) people instead of relying exclusively on the media to transmit ECB messages. This could be achieved by a more frequent presence in key media channels and by maintaining regular listening events, as suggested during the strategy review. Educating makes engagement more likely and explanation easier, thereby contributing to a sounder understanding of the ECB's role and policies. Maintaining and upgrading financial and economic literacy initiatives carried out by the Eurosystem appears to be warranted.

7. Challenges of monetary and fiscal policy interactions

Maria Manuel Campos, José Cardoso da Costa and Sandra Gomes

Monetary and fiscal policies closely interact in several dimensions. Governments' decisions regarding public spending and taxation impact economic activity, relative prices and financial conditions. In turn, central banks' actions have important fiscal consequences, both directly, by affecting governments' borrowing costs and needs, via their impact on interest rates and the distribution of dividends to the shareholder, and indirectly, through their influence on inflation and economic activity. As these interactions have become more relevant in recent years, a close understanding of their implications for the conduct of monetary policy is warranted.

The prevailing paradigm embodied in the EMU architecture relies on a strict separation of roles. Under the EU Treaties, price stability in the euro area is to be ensured by an independent central bank, while fiscal policies remain at the national level and governments should abide by a surveillance framework within the scope of the Stability and Growth Pact (SGP). The framework was devised to ensure sound fiscal positions and the maintenance of sustainable debt levels, which contributes to safeguarding the independence of the central bank. The literature has for long noted that the credibility and effectiveness of monetary policy could be undermined under a fiscal dominance regime (Sargent and Wallace, 1981). A recommendation following from this analysis is that fiscal authorities should primarily ensure sound public finances, while also fulfilling distributive and efficiency objectives, and assume a macroeconomic stabilisation role mostly through the functioning of automatic stabilisers.

The global financial crisis and the sovereign debt crisis triggered a discussion on the traditional view on the interaction between monetary and fiscal policies. The response of monetary authorities to the crises was unprecedented, going well beyond conventional measures. In the autumn of 2008, the ECB responded swiftly to the financial stress by strongly cutting interest rates and providing ample liquidity at a low cost (Section 6.1). In 2009, there was also a call for national fiscal policies to explicitly address the economic impact of the crisis and stimulus packages were implemented across euro area countries. In principle, SGP rules would have induced a pre-emptive accumulation of fiscal buffers before a crisis that could be used in such an instance. However, they failed to provide incentives for sufficiently countercyclical policies. Hence, debt and deficit ratios soared across the euro area and cross-country heterogeneity deepened ahead of the sovereign debt crisis (Chart 7.1 – Panel A). During the crisis, tensions emerged between the need to support demand and the need to address public debt sustainability. Eventually, sustainability concerns prevailed and, while economic conditions were still deteriorating, euro area fiscal policy became contractionary. Simultaneously, as disruptions in the sovereign debt markets hampered the transmission mechanism of monetary policy, the ECB intervened, first through the SMP in 2010/11 and then with the announcement of the OMT programme in the summer of 2012 that provided a backstop against expectations-driven crises (Section 4.2). In the following years, euro area inflation continued on a downward trajectory, leading the ECB to deploy further unconventional measures, including large-scale asset purchases. This led to a pronounced increase in the Eurosystem's holdings of sovereign bonds, further spurring the debate on the interaction between monetary and fiscal policies (Chart 7.1 - Panel B).

Macroeconomic developments continued to challenge monetary policy ahead of the pandemic, while the stabilisation role of fiscal policy was brought to the forefront of the debate. With interest rates at the ELB for several years and with numerous unconventional monetary policy measures being used, inflation remained subdued and continued to fall short of the price stability objective, in spite of the gradual reduction in economic slack. As downside risks to economic activity intensified in 2019, the discussion on the tension between the macroeconomic stabilisation role of fiscal policy and debt sustainability concerns re-emerged. Despite calls for the use of available fiscal space in some countries, the aggregate euro area fiscal stance remained essentially neutral prior to the pandemic.





Sources: ECB and European Commission. | Notes: Panel A – consolidated gross debt of the General Government. The trimmed range excludes the highest and lowest public debt levels among the 19 euro area countries. Panel B – credit to financial institutions (longer term) includes all operations with maturity greater than or equal to three months.

The pandemic has confirmed that, under certain circumstances, monetary and fiscal policies can reinforce each other and deliver an effective response to a crisis, while operating independently. Governments have reacted to the health emergency and reinforced the functioning of automatic stabilisers through discretionary packages that successfully mitigated the fallout from the pandemic. Although the scope for additional monetary accommodation has been limited after over a decade of expansionary policies, the ECB has swiftly responded to the shock with the launch of several measures, contributing to the proper functioning of the monetary policy transmission mechanism and providing support to economic activity. Indirectly, it has also created fiscal space for national governments to act without triggering sustainability concerns. On the fiscal front, additional leeway has been created through the activation of the general escape clause of the SGP, as well as other initiatives. Furthermore, the announcement of the Next Generation EU (NGEU) recovery package has reinforced risk-sharing mechanisms in the EU.

The current conditions favour a joint role of monetary and fiscal policies towards contributing to macroeconomic stabilisation, even though the latter may have a limited impact on inflation beyond the short run. The empirical and theoretical literature suggests that the fiscal multiplier (i.e. the short-run impact on economic activity of a given fiscal expansion) is larger at the ELB and this has an inflationary impact in the short run. However, these effects vary substantially and can be reversed depending on the persistence of shocks, on the type of fiscal instruments and, importantly, on the way the fiscal expansion is financed (Ramey, 2019; Castelnuovo and Lim, 2019). Conventional fiscal policy (i.e. fiscal policy that is geared towards directly affecting aggregate demand) is a costly tool for the purpose of raising inflation. The estimated impact on inflation is typically small and temporary, even when monetary policy remains accommodative (Coenen et al., 2012), and may actually be negative if it improves productivity. In the case of fiscal stimuli targeting the supply side of the economy, for instance through tax cuts or spending in infrastructure that may increase potential output, the effect on inflation could be negative and more persistent (Bańkowski, Ferdinandusse, Hauptmeier, Jacquinot and Valenta, 2021). If these policies have a

favourable impact on potential growth, they will nonetheless move the natural real interest rate upwards and could possibly increase monetary policy space in the future.

The relevance of fiscal policy extends beyond its direct impact on aggregate demand. The composition and quality of public expenditure and its impact on the supply side (e.g. on potential growth) are probably more important considerations than the stabilisation role of fiscal policy. Furthermore, potential disinflationary effects in the short to medium run should play no role in the evaluation of this type of policy measures. Fiscal policy is also better equipped to respond to certain shocks in a more targeted manner than monetary policy (as highlighted by the pandemic crisis) and should primarily aim at providing public goods and at redistributing resources in an efficient manner, thus minimising frictions in the economy.

Even though conventional fiscal policy has a temporary impact on inflation, it does not affect trend inflation. In the long run, for a certain level of the real interest rate (over which the central bank has limited influence), a positive relationship must hold between the trend levels of the nominal interest rate and inflation (the so-called Fisher relation, Chapter 2). In addition, after accounting for money demand factors, there is also a positive relationship between inflation and the growth rate of the money supply in the long run. In the institutional setting of the EMU, fiscal policy cannot directly affect the growth rate of the money supply or the nominal interest rate in a sustained manner. As such, for a given monetary policy, fiscal policy can only have a temporary impact on inflation mostly through its effect on economic activity. If the low inflation in the euro area corresponds to a lower trend, e.g. due to a de-anchoring of inflation expectations, then fiscal policy will be ineffective to raise inflation towards the objective.

Certain unorthodox fiscal policy actions may raise inflation more persistently, but at the risk of leaving the central bank unable to control inflation. Some authors suggest that unbacked fiscal expansions (i.e. expansionary fiscal policies not financed by higher future primary surpluses) can be used to exit a low inflation environment when the interest rates are at the ELB (Sims, 2016). Indeed, the fiscal theory of the price level highlights that, when such policies are conducted by a government that issues only nominal debt in its own currency, an increase of the price level may under certain conditions be inevitable to guarantee that the budget constraint of the government is satisfied. In this set-up, the mechanism behind inflation is akin to a bank run, but in this case agents try to get rid of their public debt holdings (Cochrane, 2021). Agents not willing to hold public debt securities exchange them for goods and services, driving up consumer prices, which deflates the real value of public debt. In such scenarios, inflation may not be controllable by the central bank. This implies an extreme form of fiscal dominance that is not the institutional arrangement of the euro area.

The success of the economic recovery following the pandemic will depend on an effective policy mix, but euro area governments will have to strike a balance between the need to support the recovery and ensuring fiscal sustainability. Under the current conditions of a negative interest-growth differential it is possible to sustain a certain ratio of public debt, even with a primary deficit. As a consequence, it is possible to maintain a somewhat expansionary fiscal policy without triggering public debt sustainability concerns (Blanchard, 2019). Since monetary policy is expected to remain accommodative, amid persistently low inflation, governments' financing costs are likely to remain low in the medium run, temporarily muting the trade-off. Funding provided through the NGEU framework may further alleviate this tension in the short to medium run, while in the longer run the Recovery and Resilience Facility is expected to strengthen potential growth, thereby contributing to improve debt sustainability prospects and eventually support an increase of the natural interest rate. However, risks could resurface, especially in view of the high levels of government debt in several countries and the vulnerabilities that may emerge in the aftermath of the pandemic crisis.

The current conditions should not be perceived as a change in paradigm and the ECB shall continue to act in accordance with its primary price stability objective. At times, this may imply taking steps to preserve the transmission mechanism and the singleness of monetary policy, ruling out expectations-driven public debt crises (Section 4.2). But monetary policy decisions should not be influenced by public debt sustainability risks that are driven by economic fundamentals. In this sense, monetary policy decisions should not support a regime of financial repression, i.e. decisions to keep interest rates low should not be related to the level of sovereign debt, and should not impede the market's disciplinary role (Schnabel, 2020b). Doing otherwise would amount to monetary financing. The ECB's asset purchase programmes, in particular the PEPP, have clear objectives and boundaries, which are important to ensure the programmes' proportionality (Chapter 3) and to safeguard the central bank's independence.

Risks to central banks' balance sheets should not guide monetary policy decisions. Concerns over central banks' credibility could arise if certain balance sheet risks were to materialise and there was no mechanism to guarantee proper central bank capitalisation (Del Negro and Sims, 2015; Reis, 2015). This is particularly important when there are substantial duration mismatches in the central bank balance sheet (i.e. when assets have a significantly longer duration than liabilities), as it may face large income losses if interest rates rise in a persistent manner. In the case of the euro area, higher interest rates may also create fiscal stress, which, in turn, may induce further losses for the national central banks. In order to preserve monetary dominance, it is thus necessary to continue to guarantee medium- to long-run fiscal discipline at the country and Union level, but also to guarantee the recapitalisation of the Eurosystem if necessary (Corsetti and Dedola, 2016). The Eurosystem has built up financial buffers over the past few years, thus minimising potential future losses, but strengthening the mechanisms to deal with possible defaults and to guarantee the recapitalisation of the Eurosystem, if necessary, could also be considered.

While the strategic complementarities of monetary and fiscal policies should be allowed to work under specific circumstances, the ECB's monetary policy strategy must ensure a smooth transition to a long-run equilibrium with anchored inflation expectations. The conditions under which monetary and fiscal policy function and interact have changed significantly in recent years, namely given the prolonged period of low interest rates and more recently the pandemic crisis. The current circumstances favour a joint accommodative response. However, as the economy recovers, both monetary and fiscal policies need to prepare for a normalisation process. A rise in interest rates would translate only gradually into higher interest costs for governments, given the current relatively long debt maturity. At the same time, net income generated by central banks may be reduced, with a negative impact on fiscal balances. Risks stemming from the high public and private debt levels and the increased exposure of the Eurosystem's balance sheet to sovereigns need to be closely monitored. The monetary dominance paradigm that is at the heart of the EMU architecture ought to remain a cornerstone, in order to ensure that the monetary authority is able to control the long-run level of inflation. The ECB's independence and the existing safeguards to protect it remain important for the fulfilment of its mandate.

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