THE 2021 REVIEW OF THE MONETARY POLICY STRATEGY OF THE EUROSYSTEM: AN ECONOMY OF FORCES

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ABSTRACT

This study delves into the rationale behind the 2021 review of the monetary policy strategy of the Eurosystem and elaborates on the main elements of the new strategy and its implications for monetary policy-making going forward. The profound changes in the economic landscape that have taken place since the last review in 2003 prompted the European Central Bank and the euro area national central banks to embark on a comprehensive review of the monetary policy strategy of the Eurosystem. The aim has been to ensure that the strategy reflects upon these unique challenges and remains well suited in pursuit of the primary objective of price stability. The key outcome of the strategy review, unveiled in July 2021, has been the reformulation of the price stability objective so as to adopt a symmetric commitment to the 2% inflation target over the medium term, as well as the confirmation of the flexible use of unconventional monetary policy tools when the economy operates close to the effective lower bound of interest rates. In addition, the new strategy has further incorporated financial stability and climate change considerations into the monetary policy framework. The present study outlines the enhancements embedded in the new strategy, as regards the fulfilment of the Eurosystem's price stability mandate. It also discusses the ways in which the new strategy could have, to some extent, addressed the challenges faced by the euro area and its individual members, with a focus on Greece, over the past crisis years.

Keywords: European Central Bank; monetary policy; strategy review; price stability; euro area economy; inflation; effective lower bound

JEL classification: E31; E50; E52; E58

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ΠΕΡΙΛΗΨΗ

Η μελέτη αυτή εμβαθύνει στη λογική της επανεξέτασης της στρατηγικής της νομισματικής πολιτικής του Ευρωσυστήματος το 2021 και αναλύει τα κύρια στοιχεία και τις συνέπειές της για την άσκηση νομισματικής πολιτικής στο μέλλον. Οι θεμελιώδεις αλλαγές που έχουν συντελεστεί στο οικονομικό περιβάλλον από την τελευταία επανεξέταση το 2003 έδωσαν έναυσμα στην Ευρωπαϊκή Κεντρική Τράπεζα και τις εθνικές κεντρικές τράπεζες στη ζώνη του ευρώ να επανεξετάσουν διεξοδικά τη στρατηγική του Ευρωσυστήματος. Σκοπός είναι να διασφαλιστεί ότι η στρατηγική αντανακλά τις προκλήσεις αυτές και ότι παραμένει κατάλληλη για την εκπλήρωση του πρωταρχικού στόχου της σταθερότητας των τιμών. Τα κύρια συμπεράσματα της επανεξέτασης της στρατηγικής, η οποία ολοκληρώθηκε τον Ιούλιο του 2021, ήταν ο επαναπροσδιορισμός του στόχου της σταθερότητας των τιμών, με την υιοθέτηση συμμετρικής δέσμευσης ως προς την επιδίωξη ρυθμού πληθωρισμού 2% μεσοπρόθεσμα, και η επιβεβαίωση της χρήσης με ευέλικτο τρόπο των μη συμβατικών εργαλείων νομισματικής πολιτικής όταν η οικονομία λειτουργεί κοντά στο κατώτατο δυνατό επίπεδο για τα επιτόκια. Επιπρόσθετα, η νέα στρατηγική ενσωματώνει περαιτέρω παραμέτρους που σχετίζονται με τη χρηματοπιστωτική σταθερότητα και την κλιματική αλλαγή στο πλαίσιο της νομισματικής πολιτικής. Η μελέτη περιγράφει τις βελτιώσεις που συνεπάγεται η νέα στρατηγική για την εκπλήρωση της εντολής του Ευρωσυστήματος για σταθερότητα των τιμών. Εξετάζει επίσης τους τρόπους με τους οποίους η νέα στρατηγική θα μπορούσε να είχε αντιμετωπίσει, έως ένα βαθμό, τις προκλήσεις για τη ζώνη του ευρώ και τα μέλη της, με έμφαση στην Ελλάδα, κατά τη διάρκεια των προηγούμενων κρίσεων.

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Ποταμῷ γὰρ οὐκ ἔστιν ἐμβῆναι δὶς τῷ αὐτῷ
Ηράκλειτος

No man ever steps in the same river twice
[for it's not the same river and he's not the same man]
Heraclitus

1 INTRODUCTION

The 2021 review of the monetary policy strategy of the Eurosystem was a long time coming. The 18 years since the previous review in 2003 have seen profound changes in the realities of the world in which the Eurosystem[1] operates and, by implication, in the art of its monetary policy-making. On the one hand, the economic landscape has been transformed by major trends, such as population ageing, technological change, the global savings glut and slowing productivity growth, all of which have contributed to a decline in the equilibrium real interest rate to historically low levels. On the other hand, this period saw three major shocks unfolding: the global financial crisis, the sovereign debt crisis, which was central to the euro area, and the COVID-19 pandemic. To respond to these shocks, the Eurosystem had to defy orthodoxy, with its monetary policy-making embarking on largely uncharted waters. Notably, it slashed one of its key policy rates to levels below the zero lower bound, while it expanded its toolkit in innovative ways, deploying asset purchases and targeted longer-term refinancing operations on an unprecedented scale. At the same time, globalisation effects on the structure of goods, services and labour markets, as well as implications for prices attributed to climate change and the related transition policies to a carbon-free world, pose further challenges for the Eurosystem in fulfilling its price stability mandate.

Against this background, the ECB and the euro area national central banks embarked in 2020 on a lengthy and thorough re-assessment of the monetary policy strategy of the Eurosystem, to ensure that the strategy reflects upon these unique challenges and remains "*fit for purpose both today and in the future*".[2] The process has involved a new definition of the primary objective of price stability and the confirmation of the flexible use of unconventional monetary policy tools when the economy operates close to the effective lower bound of interest rates. It has also contemplated the further incorporation into the monetary policy framework of other considerations relevant to the pursuit of price stability, such as financial stability and climate change. The overall aim has been to provide the Governing Council[3] with "*a coherent analytical framework that maps actual or expected economic developments into policy decisions*".[4]

* The views expressed herein are those of the authors and do not necessarily reflect the views of the Bank of Greece and the Eurosystem. The study draws on the set of occasional papers (numbered 263 to 280) prepared in the context of the ECB's monetary policy strategy review during 2020-21 by separate work streams, to which the authors had contributed, alongside other Bank of Greece and Eurosystem staff. The authors would like to thank George Tavlas and Daphne Papadopoulou for valuable contributions to this study already during the strategy review process. The authors are also grateful to Hiona Balfoussia and Sophia Mariatou for important comments.

1 The Eurosystem comprises the European Central Bank and the national central banks of those countries that have adopted the euro.

2 See https://www.ecb.europa.eu/home/search/review/html/index.en.html.

3 The Governing Council is the main decision-making body of the Eurosystem. It consists of the six Executive Board members of the ECB and the Governors of the national central banks of the euro area countries.

4 See "An overview of the ECB's monetary policy strategy" (https://www.ecb.europa.eu/home/search/review/html/ecb.strategyreview_monpol_strategy_overview.en.html).

The new strategy, unveiled in July 2021, brings significant enhancements to the framework within which the Governing Council formulates monetary policy in the euro area and safeguards price stability.

This paper delves into the rationale and justification behind the strategy review, and elaborates on its main elements and the implications for monetary policy-making going forward. It provides an overview of the lessons learnt from the past crises and outlines the major strengths of the elements embedded in the new strategy in enhancing the ability of the Governing Council to safeguard price stability and address extraordinary contingencies. The paper first provides in Section 2 an introduction to the main elements of the monetary policy strategy of the Eurosystem, as first defined in 1998, and reviewed in 2003. Section 3 provides the motivation for the 2021 review, followed by a discussion of its main components in Section 4. Section 5 outlines the innovations to the actual implementation of monetary policy arising from the new strategy, focusing on the formulation of forward guidance, the calibration of the policy tools and the further incorporation of climate change considerations. A question that deserves consideration is whether the challenges for the euro area and for its individual members, with a focus on Greece, would have been different had the new strategy been in place during the past crisis years. Section 6 attempts to answer this question, building on a simple counterfactual case to explore the major implications of the new strategy against the performance of the previous formulation. Section 7 provides an assessment of the outcome of the strategy review, while Section 8 concludes.

2 MONETARY POLICY STRATEGY

The monetary policy strategy of the Eurosystem provides a framework within which the Governing Council —the main decision-making body of the ECB— takes decisions on the appropriate stance of the monetary policy in pursuit of its price stability mandate, as established in Article 127(1) of the Treaty on the Functioning of the European Union. The strategy prescribes general principles that aim to guide the successful and efficient conduct of monetary policy, which allows achieving inflation outcomes consistent with the primary objective of the Eurosystem to maintain price stability.

The main elements of the strategy, first defined in 1998, reviewed slightly in 2003 and in place until the recent review in 2020-21, can be summarised as follows:

i. The first element refers to the quantitative *definition of price stability*. When adopted by the Governing Council in 1998, price stability was defined as a year-on-year increase in euro area inflation of *below 2%* over the medium term. In 2003, it was clarified that the Governing Council aimed to maintain inflation rates of *below, but close to, 2%*. This definition consisted of, first, a range for inflation and, second, an imprecise inflation aim close to the upper bound of the range (usually interpreted[5] as inflation rates from 1.7% to 1.9%). It provided a ceiling on the aimed inflation rate, in order to safeguard the purchasing power of the euro and to ensure the transparency of the price mechanism, allowing consumers and businesses to make well-informed economic decisions regarding their consumption, saving and investment. At the same time, aiming at above zero inflation rates provides a safety margin to reduce the risks of deflation. It also helps address the implications of inflation differentials across the euro area countries and it takes into account the possibility of mismeasurement of true inflation, in the light of quality improvements in goods and services. Finally, the definition signified the Governing Council's commitment to avoid persistently too high, as well as too low inflation rates.

Further aspects of the definition are the following:

5 See speech by the former ECB President Jean-Claude Trichet in May 2003 entitled "The ECB's monetary policy strategy after the evaluation and clarification of May 2003" (https://www.ecb.europa.eu/press/key/date/2003/html/sp031120.en.html).

- Euro area inflation is measured on the basis of the Harmonised Index of Consumer Prices (HICP), which is compiled by Eurostat in accordance with harmonised statistical methods across all euro area countries, ensuring that price developments are measured on a comparable basis.

- The definition refers to the inflation rate in the euro area as a whole. In a currency union, the monetary policy decisions aim to steer the average level of money market interest rates of all member countries, which, through the monetary policy transmission mechanism, affects aggregate demand and prices. That is, a single monetary policy cannot set distinct policy rates in each individual country, despite heterogeneity across domestic inflation rates. The aim is to ensure that the average inflation rate in the Economic and Monetary Union is consistent with the definition for price stability and to safeguard the value of the single currency, the euro.

- The medium-term orientation provides the central bank with adequate flexibility to respond to economic shocks. Acknowledging that monetary policy may influence prices only with time lags and that inflation cannot be kept constant at a specific point target, policy decisions should not attempt to fine-tune short-term fluctuations in prices, but would rather focus on maintaining price stability over the medium term. Moreover, it allows monetary policy to respond appropriately to different types of shocks. In case of a demand shock, a monetary policy response that stabilises inflation supports at the same time economic activity. In case of a supply shock, a restrictive monetary policy response to rising prices could put a drag on real economic activity. It is, thus, sometimes warranted to look through supply-side shocks, for instance originating from sharp oil price hikes that usually have a short duration, and focus mainly on the medium-term inflation prospects.

ii. The second element is the thorough analysis of economic developments, which had been based on two complementary perspectives, referred to as the "two pillars": the *economic analysis* and the *monetary analysis*. By cross-checking the relevant information from both pillars, the Governing Council assessed the risks to price stability and determined the appropriate monetary policy stance.

- The *economic analysis* elaborates on the short-to-medium term determinants of price developments. In particular, the focus is given on real economic activity (inter alia, overall output, labour market conditions, global activity, etc.), a broad range of price and cost indicators, fiscal policy, asset prices and financial yields, as well as the macroeconomic projections produced by the staff of the ECB and the Eurosystem.

- The *monetary analysis* focuses on longer-term implications of monetary and credit developments for prices. Specifically, it examines money stock measures, several monetary aggregates and estimates of credit expansion to firms and households.

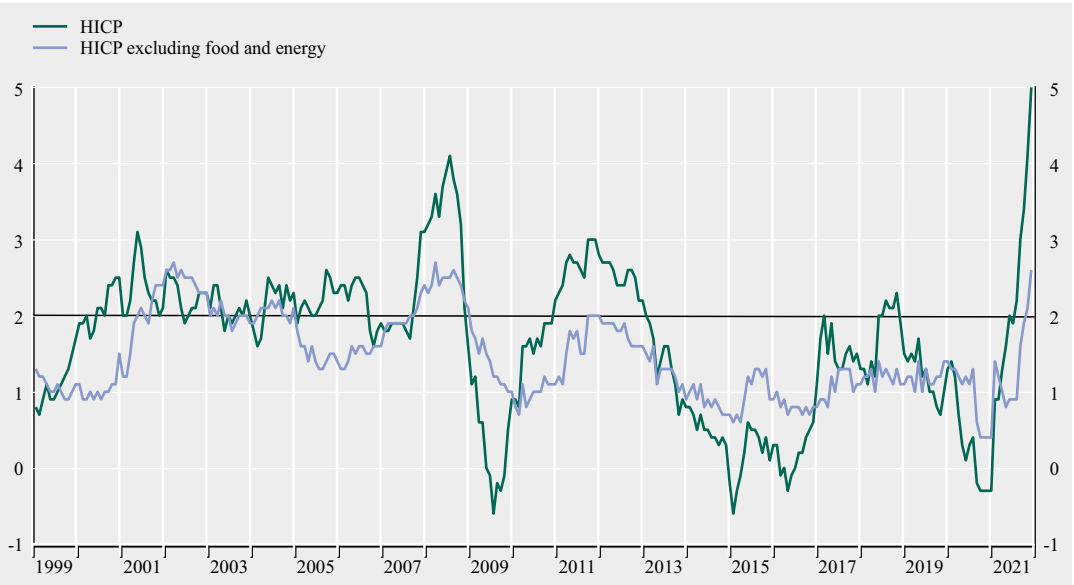
3 MOTIVATION FOR A REVIEW OF THE MONETARY POLICY STRATEGY

Since the first review of the monetary policy strategy, conducted in 2003, the euro area economy, similar to other economies, has undergone profound changes that called for a re-assessment of the strategy. Declining output growth, slowing productivity and an ageing population have driven interest rates in the euro area markets down to historically low levels. A substantial fall in the natural rate of interest[6] —i.e. the interest rate that is consistent with inflation being on target and economy operating at its potential— has been recorded. Although the natural rate of interest is unobserved, Brand et al. (2018) provide estimates, based on a range of econometric

6 At the natural interest rate (also called neutral or long-run equilibrium rate, and symbolised as r*) the desired levels of investment and saving come into balance and the monetary policy stance becomes neutral, i.e. neither contractionary nor expansionary.

Chart 1 Inflation in the euro area

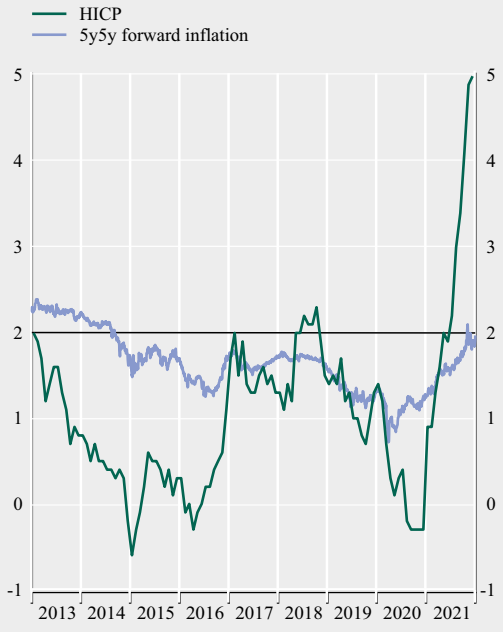
(HICP annual percentage changes, monthly data)



Source: Eurostat.

Chart 2 Inflation rate and market expectations in the euro area

(HICP annual percentage changes, monthly data; 5-year/5-year forward inflation-linked swap rate in percentages, daily data)



Source: Thomson Reuters.

models, showing that the natural rate has reached zero or even negative values in the euro area.

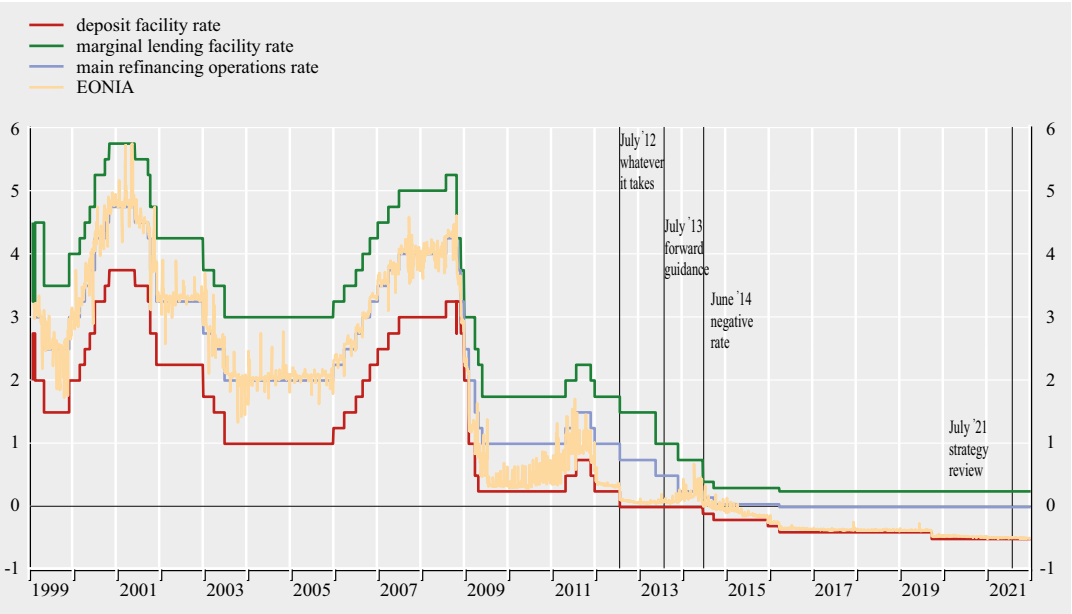
Meanwhile, the protracted decline in prices, stemming mainly from the recession that hit the euro area economy during the global financial crisis and the subsequent sovereign debt crisis, as well as from structural developments (such as globalisation and digitalisation), led to inflation outcomes persistently below the ECB's aim. Headline inflation remained too low for a very long period and even reached negative levels (see Chart 1). At the same time, inflation expectations, as measured by the 5-year/5-year forward inflation-linked swap rate, fell to historically low levels (see Chart 2), below the ECB's inflation aim.

With the ECB's policy rates close to their effective lower bound,[7] the scope for expansionary monetary policy through conventional interest

7 The effective lower bound refers to the point at which further cuts in the key monetary policy interest rates no longer provide stimulus to aggregate demand and inflation.

Chart 3 ECB policy rates and interbank market rate

(percentages, daily data)



Source: ECB.

rate cuts has diminished. The rate on the main refinancing operations was set to zero in 2016, whereas the deposit facility rate has been in negative territory since 2014 (see Chart 3). In proximity to the effective lower bound, conventional interest rate policy has limited space of additional easing in the face of a deflationary shock and further interest rate cuts become ineffective. Consequently, to achieve price stability and support economic activity, unconventional monetary policy measures were adopted by the Eurosystem, driving its balance sheet to unprecedented high levels (see Chart 4).

Furthermore, developments such as changing financial structures and increasing demand for safe and liquid assets in the wake of the global financial crisis weighed on market conditions, impaired the transmission of monetary policy and led to the emergence of fragmentation across euro area countries. Moreover, rapid digitalisation (including the rise of digital money) and globalisation effects on the structure of goods, services and labour markets, as well as implications for prices attributed to climate change and the related transition policies to a carbon-free economy, pose new challenges for the Eurosystem within its mandate to safeguard price stability.

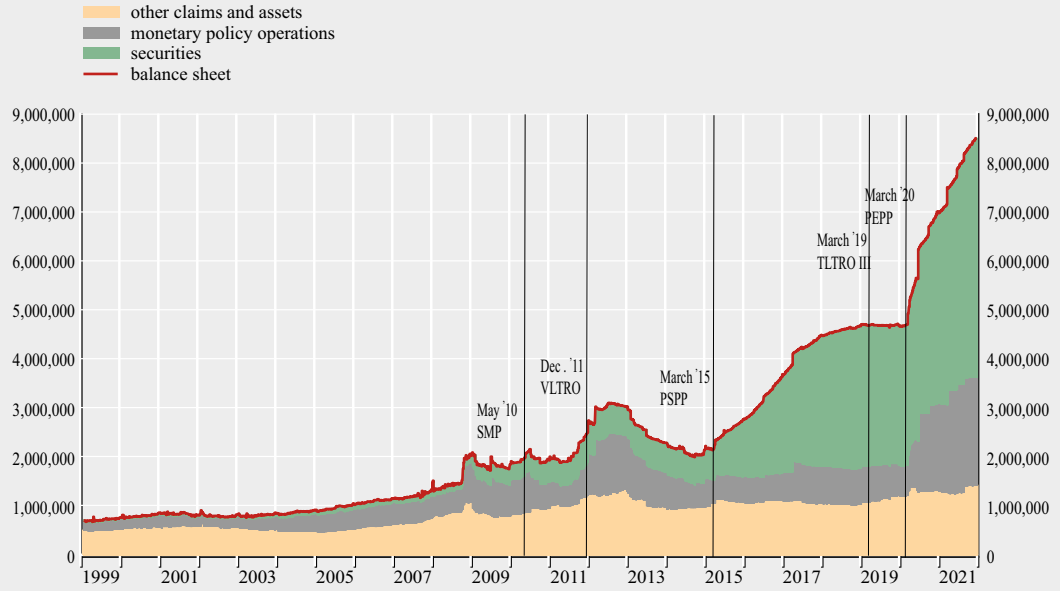
Against this backdrop, in early 2020, a second review of the monetary policy strategy was deemed warranted to ensure that the Eurosystem continues to fulfil its primary objective of maintaining price stability. Following in-depth discussions in the Governing Council and taking into consideration numerous comprehensive analyses and studies, the strategy review process was concluded in July 2021. Separate work streams looked at key topics for the strategy review, ranging from monetary policy tools to climate change, and a set of occasional papers[8] was published in September 2021.

During these 18 months, the ECB has gathered input from citizens and civil society organisations in order to better understand their perspectives and concerns. Participants were

8 See footnote 2.

Chart 4 Eurosystem balance sheet and selected assets

(EUR millions, weekly data)



Source: ECB.

invited to answer a number of key questions via the ECB Listens Portal, a web survey which ran until October 2020. A summary report of the responses has been published[9] on the ECB's website and fed into the Governing Council's deliberations on the monetary policy strategy review. At the same time, the ECB and the national central banks of the euro area hosted a series of listening events, which gave the general public and civil society organisations the opportunity to express their opinions. The ECB held the first virtual event[10] on 21 October 2020, hosted by President Christine Lagarde and Chief Economist Philip Lane. The Bank of Greece held its own listening event[11] entitled "The Bank of Greece Listens" on 10 February 2021; representatives of social partners and civil society submitted their views and suggestions, a summary of which was then transmitted to the ECB. The aim of these listening events has been to encourage dialogue between the Eurosystem and citizens, for whom the euro constitutes a public good as a universally accepted and trusted means of payment. As such, citizens need to fully understand the ECB's mission and the logic of the decisions of its Governing Council. Correspondingly, the Governing Council must fulfil its mandate in line with citizen expectations.

4 THE NEW ELEMENTS OF THE MONETARY POLICY STRATEGY

4.1 THE PRICE STABILITY OBJECTIVE

In the new strategy statement, the price stability objective has been reformulated in a way that the Governing Council can more effectively deliver on its mandate. In particular, the Governing Council considers that "*price stability is best maintained by aiming for 2% inflation over the medium term*". It has further clarified that "*commitment to this target is sym-*

9 See Summary report of the ECB Listens Portal responses (https://www.ecb.europa.eu/home/search/review/html/ecb.strategyreview002.en.html).
10 See ECB Listens event (https://www.ecb.europa.eu/pub/conferences/html/20200326_ecb_listens_event.en.html).
11 See https://www.bankofgreece.gr/en/news-and-media/events-list/events?event=fba73351-8100-44cb-8fb6-97b0dc33dc59.

metric" meaning that "*negative and positive deviations from this target are considered as equally undesirable*". Furthermore, the Governing Council takes into account the implications of the effective lower bound constraint on nominal interest rates, which, if persistent, could lead to prolonged periods of below target inflation outcomes. The new strategy explicitly states that "*in particular, when the economy is close to the lower bound, this requires especially forceful or persistent monetary policy measures to avoid negative deviations from the inflation target becoming entrenched. This may also imply a transitory period in which inflation is moderately above target.*"

Inflation measure

The Harmonised Index of Consumer Prices (HICP) has been retained as the appropriate index to measure inflation, given that it is provided in a timely manner and that it is reliable, credible and comparable over time and across countries. In addition to this index, the Governing Council will continue to monitor a wide set of other price indicators, including measures of underlying inflation, to assess the achievement of price stability. Moreover, the inclusion of the costs related to owner-occupied housing could further improve the representativeness of the HICP, since such costs account for a large part of households' expenses. The ECB estimates that including the owner-occupied housing costs would have added to the HICP around 0.2-0.3 percentage point (ECB 2021a). The Governing Council has thus decided to recommend a roadmap, foreseeing four stages, to move to an HICP, which, in the near future, will include owner-occupied housing costs and could serve as a valuable index to be monitored.

Inflation buffer

The reformulated objective continues to support a sufficiently positive inflation buffer. The main arguments brought forward to support a buffer during the 2003 strategy review, which still remain valid, are the following: (i) the persisting measurement bias; (ii) the inflation differentials across euro area member countries; (iii) the presence of downward nominal wage rigidities; and (iv) the need to provide a safety margin against the risk of deflation and to reduce the probability of effective lower bound episodes. The low inflation experience in the post-2013 period has reinforced the importance of a positive safety margin to ensure the effectiveness of monetary policy against deflationary pressures. In particular, the pronounced decline in the natural rate of interest implies that the effective lower bound on nominal interest rates shall put a constraint for the monetary policy conduct more frequently and for longer periods. Several studies[12] provide evidence that the decline in the natural rate of interest is consistent with a higher optimal inflation. An increased inflation target has been essential to enlarge the interest rate policy space and to reduce the effective lower bound incidence. As suggested by research[13] on the implications of the low interest rate environment, the frequency of a binding effective lower bound constraint is negatively related to the quantitative definition of the inflation objective. In a similar vein, recent research[14] suggests that, due to the decline in productivity growth amid downward wage rigidities, the optimal inflation associated with long-term growth trend has been higher compared with the past. In this regard, the abandonment of the double-key formulation (i.e. "the close to but below" clause) and the adoption of a higher point inflation target at 2%, was deemed warranted to improve inflation performance and strengthen monetary policy efficiency.

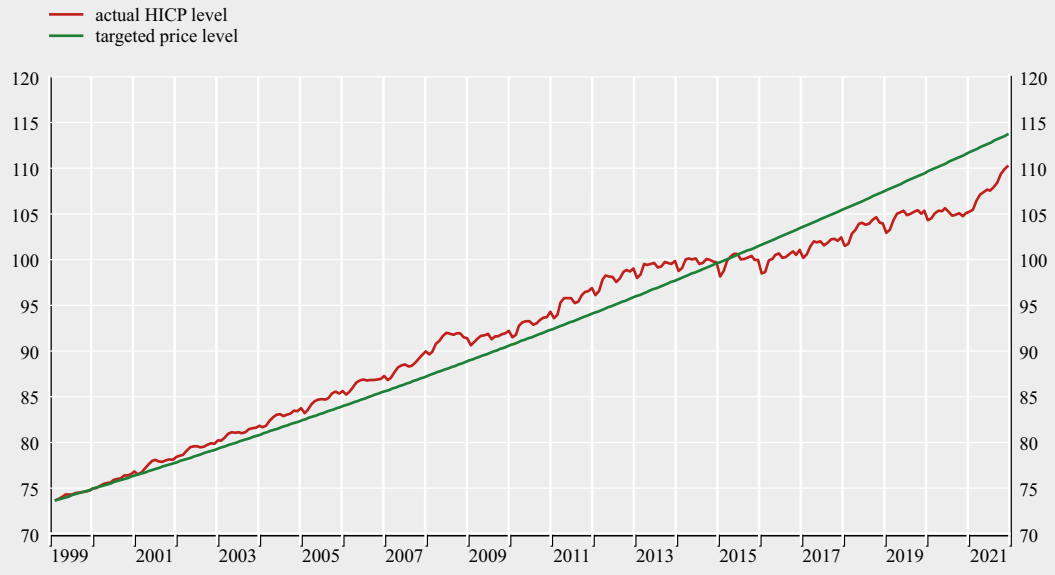
Symmetric inflation aim

Aiming at a single, focal point inflation rate is straightforward, easy to communicate and well equipped to steer inflation expectations to levels consistent with the inflation target. Although short-lived and moderate fluctuations of inflation around its target are unavoidable and acceptable, large sustained deviations in either direction require a monetary policy

12 See Andrade et al. (2019 and 2021), Adam (2021) and Fiorentini et al. (2018).
13 See Schmidt (2016).
14 See Abbritti et al. (2021).

Chart 5 Euro area actual price level versus price level assuming an inflation target of 1.9%

(index 2015=100, monthly data)



Source: Eurostat and authors' own calculations.

response. The Governing Council has thus long considered[15] deviations of inflation both above and below its target equally undesirable and had in the years closer to the strategy review communicated that its inflation target is symmetric.[16] The new formulation provides clarity, removes any ambiguity and corrects previous perceptions that the ECB was following an asymmetric inflation-targeting regime.

Market participants used to interpret the 2% aim as a ceiling (Paloviita et al. 2020 and 2021). Inflation rates above that level were seen as undesirable and needed to be addressed by monetary policy tightening. At the same time, low inflation rates were considered as acceptable and consistent with the price stability definition. Therefore, in case of disinflationary shocks, either there was no monetary policy response, or monetary policy easing was too late and too timid to help inflation, both actual and expected, escape from their low levels. Examples of such asymmetric response were witnessed in 2008 and 2011 (see Chart 3), when the Governing Council decided to prematurely increase its policy rates in response to rising prices, although inflationary pressures were not sustained. In contrast, at the outbreak of the global financial crisis, the ECB's reaction to falling inflation had been both delayed and weaker compared with other major central banks. Unconventional monetary policy tools were adopted in response to persistently low inflation only with a delay and at high cost, in terms of reduced output and employment.

As a result, public confidence in the ECB's ability to deliver on its mandate was seriously harmed and inflation expectations had de-anchored (see Chart 2), contributing to inflation persistently falling below the ECB's

15 See Introductory statement to the press conference (with Q&A), February 2014 (https://www.ecb.europa.eu/press/pressconf/2014/html/is140206.en.html), and speech by the former ECB President M. Draghi in June 2016 entitled "Delivering a symmetric mandate with asymmetric tools: monetary policy in a context of low interest rates" (https://www.ecb.europa.eu/press/key/date/2016/html/sp160602.en.html).

16 See speech by the former ECB President M. Draghi in June 2019 entitled "Twenty Years of the ECB's monetary policy" (https://www.ecb.europa.eu/press/key/date/2019/html/ecb.sp190618~ec4cd2443b.en.html).

objective. Cecioni et al. (2021) have estimated[17] an improvement in terms of average inflation (around 1 percentage point) and output gap (above 1 percentage point) from the adoption of a symmetric response around a focal point, in comparison with an asymmetric range. It is illustrative (see Chart 5) to see the difference between the actual evolution of prices in the euro area and the potential development of prices under an inflation rate of 1.9% that would be consistent with the previous inflation objective. Inflation had been falling short of its target for most of the period from 2009 to mid-2021 (see Chart 1). The index in July 2021 (just before the inflationary surge observed from August that year onwards) was almost 5% below the level it would have prevailed, had an 1.9% inflation rate been persistently achieved throughout the euro era.

Monetary policy tools

In order to reinforce its credibility under the new strategy, the Governing Council has committed to maintaining the symmetry of its inflation target with decisive actions. In particular, it acknowledges the effectiveness of unconventional monetary policy instruments[18] introduced during past crises in counteracting deflationary pressures, addressing market fragmentation and impairments in the monetary policy transmission mechanism, as well as affirming the irreversibility of the euro. In particular, given that the effective lower bound is expected to continue to impose constraints on the conventional interest rate policy, the use of forward guidance, asset purchases and longer-term refinancing operations will continue to be imperative to safeguarding price stability. Importantly, a key lesson learnt from the use of unconventional monetary policy tools is that a well-calibrated combination of instruments is more effective than any single instrument implementation. Their joint impact on financial market conditions has been remarkable.[19] Relevant research[20] shows significant impact of the unconventional measures on sovereign yields. The upward trend of government bond yields in vulnerable jurisdictions had been successfully reversed at times when bold measures were introduced (see Chart 6), whereas their spreads from the yields of respective assets issued by core countries had to a large extent been contained. In turn, benign financing conditions for the public and the private sector helped boost prices and economic activity. According to ECB estimates,[21] average economic growth and inflation would have been markedly lower in the absence of such measures. In addition, appropriate adjustments of the standard counterparty and collateral frameworks, as well as measures to mitigate unintended side effects, have been implemented in order to enhance the efficiency of the unconventional monetary policy measures. The Governing Council has also committed to responding flexibly to new challenges and to considering employing new policy instruments if needed. At the same time, it will perform thorough proportionality assessments with a view to minimising possible side effects of the monetary policy instruments, without compromising price stability.

Inflation overshooting

With a view to anchoring inflation expectations in an efficient way and to ensuring that inflation remains at levels consistent with the price

17 See also presentation by ECB Executive Board Member I. Schnabel in November 2021 entitled "A new strategy for a changing world" (https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp211124_1~98461a44c7.en.pdf).

18 See related research ECB (2021b), Andrade and Ferroni (2021), Coenen et al. (2021), Altavilla et al. (2019) and Rostagno et al. (2021).

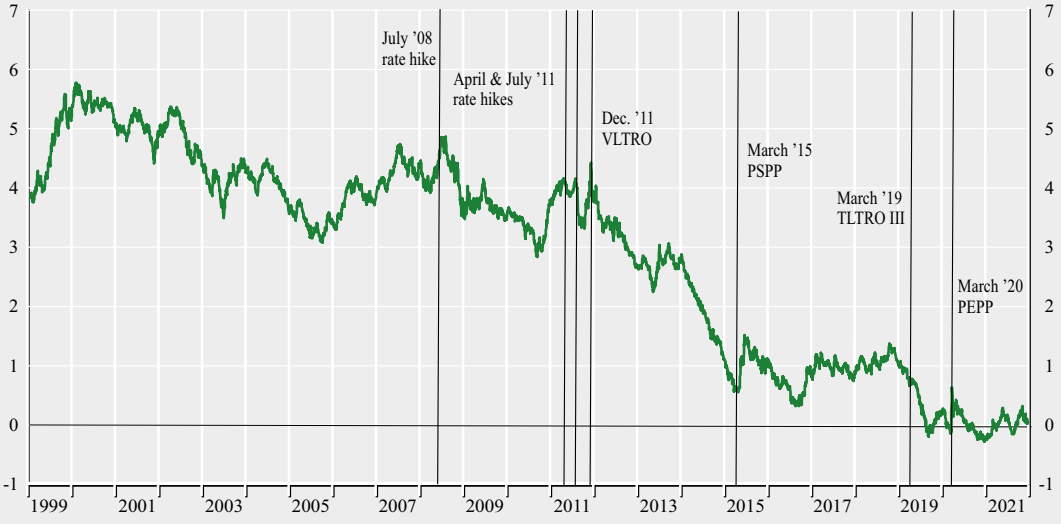
19 See estimations of the effects on the yield curve in the speech by ECB Executive Board Member P. Lane in November 2019 entitled "The yield curve and monetary policy" (https://www.ecb.europa.eu/press/key/date/2019/html/ecb.sp191125~b0ecc8e6f0.en.html).

20 Including, inter alia, Altavilla et al. (2021), De Santis and Holm-Hadulla (2020), Eser et al. (2019) and Rostagno et al. (2019).

21 As presented in the speech by ECB Executive Board Member P. Lane in February 2020 entitled "The monetary policy toolbox: evidence from the euro area" (https://www.ecb.europa.eu/press/key/date/2020/html/ecb.sp200221~d147a71a37.en.html), the average annual contribution of the unconventional measures taken in the period from 2015 to 2019 to inflation is between 0.3 and 0.5 percentage point. At the end of 2019, the level of real GDP would have been lower by between 2.5 and 3 percentage points in case unconventional measures had not been implemented. Significant positive impact was also reported for the pandemic measures in the speech by ECB Executive Board Member P. Lane in November 2020 entitled "Monetary policy in a pandemic: ensuring favourable financing conditions" (https://www.ecb.europa.eu/press/key/date/2020/html/ecb.sp201126~c5c1036327.en.html), although, at that time, the inflation outlook had been completely different from that observed in late 2021. Similar results are found, among others, by Hutchinson and Mee (2020), Coenen et al. (2020) and Aguilar et al. (2020).

Chart 6 Euro area benchmark 10-year government bond yield

(percentages, daily data)



Source: ECB.

stability objective in the medium term, the Eurosystem allows inflation to temporarily overshoot its target, after a period of undershooting. In this regard, the shortcomings associated with the effective lower bound are counterbalanced by a stronger monetary policy response to negative deviations of inflation from its target than to positive ones. The explicit allowance for temporary and moderate inflation overshooting is an effective mechanism in steering inflation expectations and preserving price stability over the medium term. Had the commitment to allow temporary overshooting of inflation been an element of the previous strategy, decisions of premature tightening during the past crises (as mentioned above) would likely have been avoided. Unconventional monetary policy easing measures could probably have been introduced without delay in response to extensive inflation undershooting in the past.

Medium-term horizon

The new definition re-confirms the medium-term horizon for the attainment of the inflation target. Such an orientation is justified on the grounds of short-term uncertainties and lags in the mechanism of monetary policy transmission to the economy and inflation. The medium-term orientation provides central banks with the flexibility to assess the origin, the magnitude and the persistence of shocks hitting the real economy and prices, and to look through temporary deviations of inflation from its target that may dissipate over time. The Governing Council is, therefore, enabled to respond in a prudent and proper way to economic disturbances. At the same time, the medium-term orientation facilitates the ECB's monetary policy to cater for other considerations that are relevant for the pursuit of price stability. Such considerations[22] involve, inter alia, financial stability, given its importance for the smooth functioning of the monetary policy transmission mechanism, as well as economic activity, employment, welfare and climate change risks.

4.2 THE INTEGRATED ANALYTICAL FRAMEWORK

The ECB's monetary policy deliberations are to be based on an integrated analytical frame-

22 See Section 4.3 for more details.

work that combines two interdependent types of analysis: the *economic analysis*, and the *monetary and financial analysis*. Both analyses provide useful insights into economic, monetary and financial developments; together they contribute to a comprehensive assessment of the economic outlook and the risks to price stability.

The economic analysis maintains its focus on developments in economic growth, employment and inflation, as well as on the macroeconomic projections of key variables over a medium-term horizon. It further involves evaluation of the shocks that may hit the euro area economy and the risks to price stability, as well as thorough analyses of structural trends and their implications for inflation, potential output and the natural rate of interest. Adjustments in the economic analysis also reflect the use of newly available and higher-frequency data, improvements in modelling techniques and progress with the inclusion in the relevant models of the effects driven by demographic transition, climate change, globalisation and digitalisation on economic developments.

The monetary and financial analysis emphasises the transmission mechanism of the monetary policy (acknowledging the empirical weakening of the relationship between monetary aggregates and inflation in recent years) and recognises that financial stability should be assigned a more prominent role. After all, financial stability is inherently linked to monetary policy transmission. Under the monetary and financial analysis, financial vulnerabilities and their implications for output and inflation, as well as the possible side effects of monetary policy on financial stability, are assessed. The analysis examines monetary and credit aggregates, developments in the money, bond and stock markets, as well as financial indicators. Data on the banking system and on the financing conditions for households and firms are also important inputs. The analysis helps identify market tensions and impairments in the transmission mechanism, owing, for instance, to fragmentation across jurisdictions and sectors.

In addition, the analytical framework incorporates a careful *proportionality assessment* of the monetary policy measures. This assessment includes an analysis of the benefits and the side effects of the monetary policy instruments and their interactions. It involves evaluating the positive impact on financing conditions and, in turn, the effect on inflation. At the same time, it examines the possible unintended effects on the real economy and the financial system. The proportionality assessment takes into account the uncertainty about the efficiency of policy instruments, as well as the risks of de-anchoring of longer-term inflation expectations. It constitutes a substantial input for consideration by the ECB upon deciding the adoption of monetary policy measures and the calibration of their modalities, to limit undesirable side effects. Such side effects have been taken into account in the past:

- The footprint of the Eurosystem in the financial markets has increased. Since the start of the Asset Purchase Programme (APP) in 2015, Eurosystem government bond holdings have risen noticeably.[23] Still, the cautious implementation of purchases on behalf of the Eurosystem is thought to have minimised the likelihood of market distortions. In particular, both an issue and an issuer limit have been imposed in order to restrict the amounts of bonds held by the Eurosystem.

- Asset purchases could lead to temporary asset scarcity in repo markets. This phenomenon has been mitigated by the deployment of Eurosystem securities lending facilities and by accepting cash as collateral in securities lending.

23 Currently, the Eurosystem holds close to 25% of the outstanding euro area public sector bonds, i.e. more than 22% of US Treasury securities held by the Federal Reserve, but less than 35% of UK government securities held by the Bank of England and 43% of Japanese government securities held by the Bank of Japan, according to the estimates of the French Economic Observatory (OFCE) as of January 2021 (see https://www.ofce.sciences-po.fr/blog/public-debt-central-banks-to-the-rescue/).

- The exclusion of household mortgages from the loans eligible under the Targeted Longer-Term Refinancing Operations (TLTROs) aimed at avoiding to fuel house prices. TLTROs managed to safeguard credit provision to the real economy and boost economic activity, without causing unwarranted overvaluation of assets.

- The Negative Interest Rate Policy (NIRP) has, other things being equal, reduced the profitability of banks, by narrowing their lending margins. However, the increase in output driven by the APP has boosted banks' earnings. Thus, overall, banks are seen to have benefited from ECB measures. Moreover, credit risk has subsided and borrower creditworthiness has improved. The very favourable pricing rates for the third series of the TLTROs and the two-tier system for remunerating excess reserve holdings have also provided meaningful sources of support to banks' profits.

- The expansionary monetary policy has been beneficial for vulnerable households. Despite the fact that lower interest rates reduced gross interest income for net savers, they triggered a reduction in the cost of servicing both variable- and fixed-rate debt for net borrowers. In addition to these direct effects, benign macroeconomic conditions brought about an increase in employment, which benefited especially low-income households. This has led to a marginal reduction in income inequality.

- Regarding firms, the accommodative monetary policy stance, by stimulating demand and economic activity and by easing financial conditions, has been supporting investment. It has thus facilitated the entry of new firms and the recovery of firms under temporary financial constraints. Although it may have contributed to prolonging the survival of some otherwise distressed firms, the overall impact on aggregate productivity and economic growth has been positive.

4.3 CATERING FOR ADDITIONAL CONSIDERATIONS

The comprehensive analysis of a broad range of indicators is justified by the need to cater for additional considerations that are relevant for the pursuit of price stability over the medium term. According to Article 127 of the Treaty on the Functioning of the European Union, "*without prejudice to the objective of price stability*", the Eurosystem "*shall support the general economic policies in the Union with a view to contributing to the achievement of the objectives of the Union as laid down in Article 3 of the Treaty on European Union*". Article 3 specifies in particular that such objectives include balanced economic growth, a highly competitive social market economy, aiming at full employment and social progress, and a high level of protection and improvement of the quality of the environment. Balanced economic growth, full employment and price stability are complementary objectives. When inflation remains close to its target, agents are able to make better plans for the future, knowing the value of their money, and take more efficient decisions, thus strengthening economic activity and employment. In this regard, maintaining price stability is the best contribution that monetary policy can make to economic welfare.

At the same time, fiscal and structural policies are important drivers of macroeconomic stabilisation. In particular, countercyclical fiscal policy supports the economy during recessions and amplifies the effectiveness of monetary policy, especially when interest rates are in the proximity of the effective lower bound (see the ECB's monetary policy strategy overview note[24] published in July 2021). Evidence from past euro area crises, where tight fiscal consolidation has yielded self-defeating effects, underscores the need for alignment of monetary and fiscal policy objectives. In addition, the complementarity between monetary and fiscal measures during the pandemic period is an example of their successful interaction in

24 See footnote 4.

providing confidence and spurring economic recovery. The effectiveness of each policy in restoring sustainable economic, price and financial stability has been maximised. Moreover, the reform of the European fiscal rules and growth-enhancing measures supported by structural policies and productive investment (especially through Next Generation EU (NGEU) funding) continue to be critical for ensuring that the interest rate-growth differential —the so-called snowball effect[25]— remains beneficial (i.e. negative). In that case, concerns about debt sustainability are mitigated and favourable debt dynamics are provided (ECB 2009).

The Eurosystem is also competent for the prudential supervision of credit institutions and the stability of the financial system. Financial stability is a precondition for the achievement of price stability. The global financial crisis is a typical example of how the excessive risk appetite and the unregulated exposure to subprime mortgages revealed weaknesses in the financial markets and weighed on their functioning. Although macroprudential policy, along with microprudential supervision, is the first line of defence against the build-up of financial imbalances, the monetary policy response was significant in identifying and alleviating the doom loops that were underway and contributed to addressing market imperfections in an efficient way. Nevertheless, during the past crises, the transmission of monetary policy had been impaired in many jurisdictions of the euro area, with serious repercussions for financial stability, and market fragmentation has been one of the main challenges that was not fully coped with.

To the contrary, during the pandemic, impairments in the transmission mechanism and signs of fragmentation were identified early on and addressed effectively through the incorporation of valuable flexibility in the monetary policy instruments. For instance, the possibility of short-term deviations from the capital key allocation, the allocation of purchases over time, across asset classes and among jurisdictions, and the introduction of a waiver of the rating requirements for the eligibility of Greek government securities were some of the main features introduced in the Pandemic Emergency Purchase Programme (PEPP) to preserve the smooth transmission of monetary policy and avert fragmentation. Furthermore, the Eurosystem introduced mitigating measures to facilitate the availability of eligible collateral pledged by its counterparties in order to safeguard their participation in its liquidity providing operations. Easing the conditions under which credit claims are accepted as collateral, increasing the Eurosystem's risk tolerance in credit operations, and granting a waiver of the minimum credit quality requirements for Greek government assets have managed, among other things, to prevent a tightening of financial conditions and an unwarranted fragmentation. In order to further ensure collateral adequacy, additional measures were taken to temporarily grandfather the eligibility of counterparties' marketable assets used as collateral, in the event that they fall below minimum credit quality rating requirements, due to possible rating downgrades arising from the economic fallout from the pandemic.

At the same time, the possible implications of monetary policy measures for financial conditions have been, and will continue to be, taken into account. The non-eligibility of housing loans granted by banks for their participation in the TLTROs and the introduction of the two-tier system for remunerating banks' excess reserves held with central banks are characteristic examples of the importance attributed by the Eurosystem in limiting the side effects of the monetary policy decisions on the functioning of the financial system.

Finally, climate change[26] plays an important role for the fulfilment of the ECB's primary objective, as it affects the structure and the cyclical dynamics of the economy, prices and

25 The snowball effect indicates that a debt ratio tends to rise (decline) if the GDP growth rate is lower (higher) than the interest rate paid on government debt.
26 See ECB (2021c), Boneva et al. (2021), Andersson et al. (2020) and references therein.

the financial system. In line with the European Union (EU) climate goals and objectives, the Eurosystem, within its mandate, fully takes into account the implications of climate change and carbon transition policies in its monetary policy-making. Accordingly, in the context of its new strategy, the Governing Council has committed to an ambitious climate-related action plan, which focuses on two pillars. First, the ECB aims to improve estimating the macroeconomic impact of climate change; it is in the process of enhancing its analytical and macroeconomic modelling capacities and developing statistical indicators and tools to measure the carbon footprint of financial institutions and their exposures to risks related to climate change. Second, the ECB considers adapting the operational framework of monetary policy in relation to environmental sustainability disclosures, risk assessment methodology, corporate sector asset purchases and collateral framework. Section 5.2 provides a detailed presentation of the key areas of ongoing and planned actions.

Box

RATIONALE FOR THE INCORPORATION OF CLIMATE CHANGE CONSIDERATIONS IN THE NEW MONETARY POLICY STRATEGY OF THE EUROSYSTEM

The climate crisis is one of the world's top threats to humanity, according to the United Nations.[1] Risks related to climate change can cause economic instability and financial vulnerability, impair the monetary policy transmission channel and compromise price stability. Climate change is thus an issue that has in recent years been gaining increasing prominence in the agendas and workings of central banks and supervisors around the world. The Network of Central Banks and Supervisors for Greening the Financial System (NGFS),[2] which has been tasked with accelerating the greening of the world financial system, comprised just eight members in 2017 when it was established. Its membership grew to 100 members in November 2021.[3] This box aims to shed some light on the rationale underlying the greater involvement of central banks, and the Eurosystem in particular within its price stability mandate, with the issue of climate change.

There are two main channels through which climate change poses challenges for the core or dominant objective of central banks, which is to achieve price stability. First, through physical risks, that is the risks emerging from the incidence itself of more frequent and more severe weather events. Natural disasters such as floods and droughts or the rise in the sea level can directly damage the capital stock of an economy, bearing implications for production in certain economic sectors (for instance agriculture) and in turn for employment, income, consumption and therefore prices. Second, through transition risks, which emerge from the implementation of policies geared towards a carbon neutral economy. The most illustrative example is the introduction of carbon pricing, which affects production costs and thus prices. Both these avenues pose risks to price stability, an issue which lies at the heart of the mandate of central banks.

Climate change also affects the efficient transmission of monetary policy. Physical risks can cause significant damage to productive infrastructure or create stranded assets. Affected firms and households may face hardship in servicing their debt obligations, exposing the financial system to increased credit risk. In a similar vein, the delayed or abrupt implementation of mitigation

1 As highlighted in the keynote speech by Bank of Greece Governor Y. Stournaras at the Conference of the Parties (COP26) EU Side Event in November 2021 entitled "Climate crisis: Action in central banking" (https://www.bankofgreece.gr/en/news-and-media/press-office/news-list/news?announcement=96b3e9b0-4595-4dee-b072-340e9b99c694).
2 See https://www.ngfs.net/en/first-comprehensive-report-call-action.
3 See https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp211103_1~981d1ed885.en.html.

policies may also severely affect carbon intensive sectors, which could in turn imply an increased probability of default for firms in that sector. The impact of higher loan defaults and asset valuation losses on bank balance sheets could on the one hand impair credit provision to the real economy, with significant implications for the smooth transmission of monetary policy, and on the other hand give rise to financial system losses posing a threat to financial stability.[4]

Climate change also has implications for the monetary policy space. Expectations regarding the materialisation of climate change-related risks imply a downward pressure on the natural rate of interest. Such pressure needs to be seen over and above that already posed on the rate due to structural factors, most notably globalisation and population ageing. At the same time, other forces such as increased demand for investment to replace damaged infrastructures or higher productivity due to clean energy innovation imply an upward pressure on the natural rate of interest. The balance of these forces has significant ramifications for monetary policy. In case the net effect is negative, the policy space for conventional monetary policy would be narrowed, while the effective lower bound may become binding more often (see ECB 2021c, p. 108).

Central banks are also directly exposed to risks due to climate change, as it affects the value and risk profile of the assets held in their balance sheets acquired mainly in the context of their asset purchase programmes, but also for other purposes, including own funds investment, potentially leading to an unwanted accumulation of climate-related financial risks.[5]

The European Union (EU) Treaties provide the legal underpinnings that justify the involvement of the ECB in addressing climate change. Without prejudice to its primary objective, the Treaties give the Eurosystem the obligation to contribute to the achievement of the objectives of the EU (as laid down in Article 3 of the Treaty on the European Union) that include "*high level of protection and improvement of the quality of the environment*". As highlighted by F. Elderson in an ECB blog post[6] that attempts to provide a close reading of the Treaties to underline the rationale for the ECB to act, "*this mandate, which is sometimes referred to as the ECB's 'secondary objective' stipulates a duty, not an option, for the ECB to provide its support*".

Apart from the monetary policy and legal considerations outlined above, which justify the contribution of the Eurosystem, without prejudice to its price stability objective, to the need to tackle climate change, there are additional considerations that call for central bank involvement. "*Greenhouse gas emissions are externalities and represent the biggest market failure the world has seen*", as Lord Nicholas Stern put it (Stern 2008, p. 1). The two prominent market failures linked to climate change are discussed below, with a view to shedding some light on their mechanisms in discouraging action to address climate change by those contributing to it and on the potential role of central banks in addressing these failures.

The first such failure relates to the "tragedy of the horizon", a term used by Mark Carney[7] in a 2015 speech to explain the lack of incentive for action today to address the catastrophic impact of climate change, which is mostly seen as relevant for the longer term. Given that the horizon of monetary policy only extends 2 or 3 years ahead, monetary policy action is seen as irrelevant

4 For a further elaboration, see https://www.ecb.europa.eu/pub/pdf/other/ecb.climateriskfinancialstability202107~87822fae81.en.pdf, https://www.bis.org/review/r210429h.htm, https://www.imf.org/external/pubs/ft/fandd/2021/09/isabel-schnabel-ECB-climate-change.htm, and https://www.ecb.europa.eu/press/blog/date/2021/html/ecb.blog210318~3bbc68ffc5.en.html.
5 See https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr210708_1~f104919225.en.html.
6 See https://www.ecb.europa.eu/press/blog/date/2021/html/ecb.blog210213~7e26af8606.en.html.
7 See https://www.bankofengland.co.uk/speech/2015/breaking-the-tragedy-of-the-horizon-climate-change-and-financial-stability.

for climate change on the grounds of this "horizon mismatch".[8] Such a stance can have irreversible consequences, the main reason being that, as Carney put it in his 2015 speech, once climate change becomes a detrimental issue for price or financial stability, "*it may already be too late*". It is, therefore, imperative that central banks take action today, in order to mitigate these long-run repercussions. Otherwise, it will be hard, if possible, to reverse the course of climate change.

The second failure relates to the "tragedy of the commons". Individuals or firms that generate negative effects on the environment out of self-interest can reap the benefits from such exploitation, while the cost is born by society. As individuals or firms do not internalise the cost of their actions on the environment, their short-sighted strategy cannot be optimal for society in the longer term. It is important to devise a pricing mechanism that internalises the costs implied for society by those contributing to climate change. Central banks can play an important role in ensuring that climate externalities are correctly priced in the financial system.

Addressing these externalities calls for collective action. It is important that central banks do not turn away from this public responsibility, but actively engage in the effort to correct, to the extent possible and within their mandate, prevailing market failures.[9] Although the main responsibility for addressing climate change lies with governments, central banks "*cannot just stand on the sidelines*".[10] Climate change poses a threat to price stability and financial stability, allowing no room for complacency for central banks to act, within their mandate.

On these grounds, the Eurosystem decided to elevate climate change to an issue of utmost importance in the context of its strategic review. The Governing Council agreed on the need to explicitly account for the implications of climate change and the carbon transition when designing and implementing its monetary policy. In July 2021, it developed and announced a detailed action plan that sets out an ambitious timeline with the aim to integrate climate change considerations into its monetary policy framework.[11] Such work is expected to progress along three major milestones, which are discussed in Section 5.2.

8 See https://www.eba.europa.eu/sites/default/documents/files/document_library/Final%20EBA%20report%20on%20undue%20short-term%20pressures%20from%20the%20financial%20sector%20v2_0.pdf.
9 As stated by ECB Executive Board Member I. Schnabel in a September 2020 speech entitled "When markets fail – the need for collective action in tackling climate change" (https://www.ecb.europa.eu/press/key/date/2020/html/ecb.sp200928_1~268b0b672f.en.html).
10 See inter alia interview with *Focus* by ECB Executive Board Member I. Schnabel in August 2021 (https://www.ecb.europa.eu/press/inter/date/2021/html/ecb.in210821~186713780d.en.html).
11 See footnote 5 herein.

4.4 COMMUNICATION AND NEXT REVIEW

Given the significant role of financial market expectations in the transmission mechanism of monetary policy, central bank communication has traditionally been tailored to steer efficiently the views of expert audiences. This focus has already borne fruit for the Eurosystem. Extensive research[27] has shown that ECB policy announcements, with forward guidance being the most prominent tool, have had a significant impact on interest rates at all maturities and on anchoring inflation expectations. The new strategy emphasises that consistent, coherent and clear communication of the narrative motivating the monetary policy decisions facilitates the transmission of the policy signal, eliminates misinterpretations and unwarranted financial volatility, and reinforces the credibility of the ECB. A streamlining of the useful communication tools currently in use —namely

27 See ECB (2021d), Goodhead (2021), Altavilla et al. (2019), Rostagno et al. (2021), Andrade and Ferroni (2021) and Ehrmann et al. (2019).

monetary policy statements, press releases, monetary policy accounts and the *Economic Bulletin*— has been warranted in order to make them more easily and better understood. In particular, the structure of the monetary policy statements has been aligned with the integrated analytical framework and sets out the narrative, drawing on the information assessed under the economic, monetary and financial analyses. The monetary policy accounts and the *Economic Bulletin* present the full range of arguments underlying monetary policy deliberations and the proportionality assessment considered at the monetary policy meetings of the Governing Council, improving the transparency of the decision-making process and accountability.

The new strategy also places emphasis on drawing the attention of the general public[28] and improving its understanding and trust in the ECB's monetary policy decisions. Therefore, the reformulated communication is complemented by layered and visualised versions, which are more readable and engaging for the wider public. To advance interaction with the general public, it is deemed useful to expand the focus of the ECB's communication to issues beyond its primary objective, which are of special importance to the public, most notably disposable income, unemployment and climate change. Moreover, outreach events are scheduled to take place across the euro area countries, drawing on the success of the listening events hosted by national central banks during the strategy review period. Strengthening financial literacy is a further step in the much-needed direction to enhance public understanding and trust. This can be achieved by organising educational seminars for students and citizens and by making available relevant material to a broader audience, furthering the presence of the central bank not only in traditional media, but also on social media platforms.

As a final point of the strategy review, the periodical assessment of the appropriateness of the ECB's monetary policy strategy is warranted in view of the rapidly evolving economic and financial environment. Further structural changes, developments in the financial landscape and advances in digitalisation, as well as possible new economic shocks and financial disturbances, are factors that may affect the inflation process and the transmission mechanism of the monetary policy in unknown and unexpected ways. Presently, the next strategy review is expected to be carried out in 2025.

5 OPERATIONALISING THE NEW MONETARY POLICY STRATEGY

5.1 FORMULATION OF FORWARD GUIDANCE AND CALIBRATION OF ASSET PURCHASES

The new strategy brought innovations to the actual implementation of monetary policy. Just a couple of weeks after the conclusion of the review in July 2021, the Governing Council[29] reformulated its forward guidance on policy rates accordingly to reflect the new definition for price stability. In particular, the forward guidance adopted in late July clarified three conditions that must be met before the interest rates got raised.

- The first two conditions for (i) "*inflation reaching 2% well ahead of the end of our projection horizon*" and (ii) "*durably for the rest of the projection horizon*" provided reassurance that inflation should have converged towards its new target in a sufficiently advanced and sustained way at the time of rate lift-off. This hedged monetary policy against the risk of reacting to forecast errors and to transitory price pressures that were expected to fade away before the end of the projection horizon. Further clarification was provided by ECB President Lagarde[30] at the press conference following the July monetary policy

28 See Coibion et al. (2020a, 2020b and 2020c) and Ehrmann and Wabitsch (2021).
29 See July 2021 monetary policy decision (https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.mp210722~48dc3b436b.en.html).
30 See July 2021 Press conference (https://www.ecb.europa.eu/press/pressconf/2021/html/ecb.is210722~13e7f5e795.en.html).

meeting that inflation had to reach the 2% target by the midpoint of the 3-year projection horizon and stay at this level for the rest of the horizon.

- The third condition required that "*progress in underlying inflation is sufficiently advanced to be consistent with inflation stabilising at 2% over the medium term*" and refers to monitoring core measures of inflation that exclude volatile (notably energy-related) components. In this respect, this condition safeguarded against a potential policy tightening in the face of cost-push shocks that might elevate headline inflation temporarily but then fade.

- Finally, in consistency with the revised strategy, the reformulated forward guidance reaffirmed that "*a transitory period in which inflation is moderately above target*" can be tolerated when monetary policy is constrained by the effective lower bound.

As in the previous formulation, the forward guidance continued to be outcome-based. Recent studies[31] provide evidence that state-contingent formulations of forward guidance about future interest rates, which are kept at easing levels for longer than suggested by a standard interest-rate rule conditional on the state of the economy, are more efficient in steering markets' expectations and shielding yield rates from overreaction to economic developments. In turn, they exhibit stronger macroeconomic stabilisation properties. Initial evidence following the reformulation of the forward guidance suggested that market expectations on future interest rates had been effectively steered. Markets had adjusted the date of the expected Eurosystem interest rate lift-off in tandem with the forward guidance. At the same time, market-based inflation expectations rose towards levels consistent with the new definition of price stability and got anchored (see Chart 2). Markets' expectations moved in line with what could be expected following the modifications in the ECB's strategy and forward guidance. The alignment of the forward guidance with the new strategy succeeded in eliminating past perceptions of asymmetry and established firmer conditions in terms of inflation convergence to its new higher target.

In the second half of 2021, the Governing Council was carefully assessing the inflation surge since mid-2021 —inflation met the 2% target in May and reached 5% in December, i.e. its highest level since the establishment of the euro area— and highlighted three largely transitory factors that have pushed up prices.[32] First, the base effect due to the extremely low prices during 2020, driven by the sharp drop in economic activity related to the pandemic. Second, supply bottleneck pressures and demand-supply mismatches following the re-opening of the economy and a stronger than expected economic recovery. Third, an unexpectedly large increase in global energy prices. Although there was a risk that price rises could become more permanent and feed into labour negotiations, such a risk has been thus far considered to be contained as wage developments remained subdued. These three factors were anticipated to wane over the medium term and inflation to decelerate in the course of 2022. According to the results of the December 2021 Eurosystem staff macroeconomic projections, inflation was anticipated to average 2.6% in 2021 and 3.2% in 2022, before decelerating to 1.8% in both 2023 and 2024. Therefore, over the medium-term horizon, inflation was expected to fall short of its target. As a result, the index of prices at the end of the projection horizon was anticipated to stand below the level it could have reached if the inflation target had been achieved throughout the euro era.

The Governing Council has concluded in its monetary policy meeting in December 2021 that the outlook for inflation over the medium term remained subdued and the three conditions, as

31 See ECB (2021d), Altavilla et al. (2021), Ehrmann et al. (2019), Coenen et al. (2020) and Rostagno et al. (2021).
32 See welcome address by ECB Executive Board Member P. Lane in November 2021 entitled "Inflation in the short term and in the medium term" (https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp211108~c915d47d4c.en.html).

prescribed in the reformulated forward guidance mentioned above, would be hardly met in the near term. In the face of supply-driven shocks that are not expected to be sustained in the medium term, monetary policy must not overreact. Persistent and patient monetary accommodation is required to ensure that inflation dynamics build up in a robust way in order to safeguard price stability over the medium term and a sustained economic recovery. Showing its commitment[33] to the new strategy and the reformulated forward guidance, the ECB kept its interest rate policy stance unchanged in the face of inflationary pressures that were expected to fade away in the medium term. Any premature normalisation of the monetary policy stance would be inconsistent with the commitment to allow temporary overshooting of the inflation objective over some period. It might de-anchor inflation expectations and raise credibility issues.[34] Thus, an unwarranted contractionary response to transitory price pressures could risk derailing the still fragile economic recovery from the pandemic, amplifying the downward impact on output as inflation would start to decelerate.

Moreover, the Governing Council assessed that the progress of economic recovery and of inflation towards its medium-term target permitted an unwinding in the pace of its net asset purchases in 2022. The PEPP would be discontinued at the end of March 2022, as scheduled. In the second and the third quarter of 2022, the monthly pace of purchases under the APP would increase in order to ensure that the monetary policy stance continues to be accommodative and consistent with inflation stabilising at its target. Thereafter, the Governing Council would continue net asset purchases at a lower level for as long as necessary, and until shortly before it started raising the key ECB interest rates.

However, monetary accommodation was considered still warranted in order to safeguard favourable financing conditions and ensure that funding costs for households, firms and the public sector do not increase unduly. It must be kept in mind that financial conditions, amid heightened uncertainty, are characterised by large volatility and are highly dependent on consistent monetary policy support. A premature tightening of financing conditions could not be justified in times when purchasing power is already under pressure by high costs. In this regard, the flexibility with which the pandemic-related measures were implemented, on the basis of a joint assessment of financing conditions and the inflation outlook, continues to play a significant role in ensuring the smooth transmission of monetary policy, as well as in limiting market inefficiencies and fragmentation risks that could weigh on the sustained attainment of the price stability objective and put a drag on the economic rebound.

In view of the heightened uncertainty, the Governing Council decided to maintain flexibility and optionality in the conduct of asset purchases to counter threats to the monetary policy transmission that jeopardise the attainment of its price stability objective. It therefore committed that reinvestments under the PEPP could be adjusted flexibly across time, asset classes and jurisdictions in the event of renewed market fragmentation related to the pandemic. This could entail purchases of Greek government securities over and above rollovers of redemptions in order to avoid an interruption of purchases in Greece, for as long as the country did not hold an investment-grade rating, which would allow the inclusion of Greek government securities in the Public Sector Purchase Programme (PSPP). The Governing Council strongly supported the importance of safeguarding the smooth transmission of monetary policy to the Greek economy while it was still recovering from the fallout of the pandemic. If needed, net purchases under the PEPP could also be resumed to counter negative shocks related to the pandemic.

33 See speech by ECB President C. Lagarde in November 2021 entitled "Commitment and persistence: monetary policy in the economic recovery" (https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp211119~3749d3556c.en.html).

34 As illustrated by Coenen and Schmidt (2016), asset purchase programmes have been crucial in forestalling a de-anchoring of expectations by credibly signalling the ECB's commitment to deliver price stability.

5.2 COURSE OF ACTION ON CLIMATE CHANGE

Turning to climate change, one of the main results of the ECB strategic review has been the construction of an ambitious roadmap[35] to outline the intended course of action for the Eurosystem over the next two to three years with respect to the further integration of climate change considerations into its monetary policy operational framework. Such work is expected to progress along three major milestones[36] elaborated below.

The first milestone focuses on the expansion of the analytical capacity of the Eurosystem in macroeconomic modelling and statistics with regard to climate change. This work intends to address the major impediment for the Eurosystem in understanding and assessing the impact of climate change risks on the economy, which is the lack of availability of sufficient high quality data and modelling tools necessary for assessing climate change risks. Accordingly, the first leg of this milestone will focus on gathering consistent, reliable and comparable data, and on developing indicators to assess the carbon footprint of financial institutions and measure their exposure to climate-related risks. The second leg will aim to fill the gap in the present Eurosystem workhorse macroeconomic models with respect to capturing the transmission channels of climate risks. Building on the progress with data availability, the Eurosystem central banks will develop new analytical tools and review and adapt existing ones, to simulate the complex interactions of climate change with the economy. Through this process, the Eurosystem will gain better understanding of the implications for the transmission of monetary policy and ultimately for price stability as well as for financial stability. The resulting assessment based on the enhanced modelling and forecasting capabilities will feed into enhanced decision-making process for the Governing Council.

In a second milestone, the Governing Council will work towards enriching its knowledge on climate change-related issues. Work will progress along three directions. First, towards gaining better knowledge of the Eurosystem's own exposure to climate risks. The Eurosystem will start conducting climate stress tests of its own balance sheet, the first such exercise being scheduled for 2022. Through this exercise, the Eurosystem central banks will gain better insight into the extent to which physical and transition risks related to climate change may imply potential losses on their balance sheets. Second, the Eurosystem will aim to better understand the exposure of banks it supervises and of other companies to climate risks. As a first step, the Eurosystem already conducted an economy-wide stress test[37] in 2021, which showed that the costs of an orderly and gradual transition to a greener economy are lower to those related to deferring the handling of the impact of natural disasters in the future.[38] The exercise also revealed that in a scenario in which climate change is not further addressed, the most vulnerable banks could see the default probabilities of their corporate loan portfolios rise by 30%.[39] In a next step, the ECB will conduct a supervisory climate stress test exercise of individual banks in 2022, to identify potential vulnerabilities in the banking sector related to climate change. Third, in a major building block of this second milestone, the Eurosystem will introduce climate-related disclosures as a requirement for private sector assets to be made eligible as collateral in its credit oper-

35 See the action plan "Detailed roadmap of climate change-related actions" (https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr210708_1_annex~f84ab35968.en.pdf), which accompanied the July ECB announcement on the new ECB strategy, and "ECB presents action plan to include climate change considerations in its monetary policy strategy" (https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr210708_1~f104919225.en.html).

36 See "What's our roadmap to greening monetary policy?" (https://www.ecb.europa.eu/ecb/climate/roadmap/html/index.en.html).

37 See "Firms and banks to benefit from early adoption of green policies, ECB's economy-wide climate stress test shows" (https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr210922~59ade4710b.en.html).

38 See blog post by ECB Vice-President L. de Guidos in March 2021 entitled "Shining a light on climate risks: the ECB's economy-wide climate stress test" (https://www.ecb.europa.eu/press/blog/date/2021/html/ecb.blog210318~3bbc68ffc5.en.html).

39 See remarks by ECB President C. Lagarde in her welcome address at the ECB Forum on Banking Supervision in November 2021 (https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp211109_1~6cdc943638.en.html) and her speech at the Finance at Countdown event in October 2021 entitled "The contribution of finance to combating climate change" (https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp211012~bfe7738d35.en.html).

ations and to qualify for purchase under its asset purchase programmes. Such requirements will take into account EU policies in sustainability reporting. Fourth, the Eurosystem will review the extent to which climate change risk is duly and consistently reflected in internal and external credit ratings.

The third milestone builds on the two preceding milestones and outlines the action to be considered by the Eurosystem on the basis of the data and knowledge it will have gathered. The first leg of such action refers to the collateral framework and will explore the prospect of differential treatment of assets with higher climate risks when mobilised as collateral in Eurosystem credit operations. Accordingly, the valuation and risk control frameworks for such assets may become more restrictive relative to assets with lower climate risks. As a further step, the Eurosystem could also consider whether the risks and externalities arising from climate change require an adjustment of the eligibility criteria for the collateral framework (Deutsche Bundesbank 2021). The second leg of such action will encompass the Corporate Sector Purchase Programme (CSPP). The Eurosystem plans to adjust the framework guiding the allocation of corporate bond purchases to incorporate climate change criteria, in line with its mandate. This may potentially translate to a tilting approach to purchases, according to which the CSPP could be adjusted on the basis of sustainability considerations. Such considerations involve the alignment of issuers with, at a minimum, EU legislation implementing the Paris Agreement through climate change-related metrics or commitments of the issuers to such goals.[40]

With this action plan the ECB has "*acknowledged that climate change is an essential challenge for the world and is of strategic importance for the ECB's mandate*", as recognised by ECB President Lagarde[41] at the press conference following the announcement of the strategy review. In this context, the ECB and a number of euro area central banks, including the Bank of Greece, have elevated climate change work to a strategic priority, without prejudice to their price stability mandate. Already in January 2021, the ECB established a Climate Change Centre[42] to shape and steer its climate agenda and help coordinate action across the various disciplines involved. In turn, the Bank of Greece, one of the first central banks globally to respond to the issue of climate change, set up in 2021 a Climate Change and Sustainability Centre,[43] to design, coordinate, support and implement the climate and sustainability activities of the Bank in the future.

6 THE IMPLICATIONS OF THE NEW STRATEGY FOR THE EURO AREA AND ITS MEMBERS – A COUNTERFACTUAL ANALYSIS

The new monetary policy strategy of the Eurosystem has aimed to adapt the "philosophy" of the Eurosystem to the fundamental challenges facing the euro area economy in the period since the 2003 review. A period that was determined, first, by the incidence of the twin crises and, more recently, by the pandemic crisis. The country affected most by these challenging crisis times has been Greece. A question that therefore deserves consideration is whether the consequences for the euro area and for its individual members, with the focus on Greece where relevant, would have been different had the new strategy been in place during the crisis years. This section will touch upon the situation for the euro area and will explore the major implications of the new strategy against the performance of the previous formulation. Useful insight is gained from the recent Eurosystem response to the pandemic crisis, which can largely be seen as a showcase of the effectiveness of certain strategy elements in addressing a crisis situation, although such elements were only formalised as part of the new strategy in the summer of 2021.

40 See also page 152 of ECB (2021c).
41 See the opening remarks to the press conference of 8 July 2021 (https://www.ecb.europa.eu/press/pressconf/2021/html/ecb.sp210708~ab68c3bd9d.en.html).
42 See "ECB sets up climate change centre" (https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr210125_1~3fc4ebb4c6.en.html).
43 See https://www.bankofgreece.gr/en/the-bank/organisation/climate-change-and-sustainability-centre.

A counterfactual analysis for the euro area

To set the stage, the situation facing the euro area since the previous review in 2003 needs to be recalled. As nicely put by Rostagno et al. (2019, p. 6),[44] the history of the first two decades of the euro is largely "*a tale of two regimes: one —stretching slightly beyond the ECB's mid-point— marked by decent growth in real incomes and a distribution of shocks to inflation almost universally to the upside; and the second —starting well into the post-Lehman period— characterised by endemic instability and crisis, with the distribution of shocks eventually switching from inflationary to continuously disinflationary*". The focus of the discussion in this section will be on this latter period, as achieving the mandate of price stability has proved to be a moving target for successive years. Given that the euro area economy was facing "tectonic plate" changes over this period, it would be oversimplistic to argue that monetary policy on its own, even in a different configuration, would have played a determinant role in resolving the crisis. Acknowledging the multifaceted, unique and deep-rooted challenges facing the euro area economy, this section will take an ex-post perspective to touch upon certain dominant features of the new strategy and discuss in what ways these features could have helped in alleviating the consequences of the crisis on euro area inflation and growth. It will also shed some light on the deficiencies of the previous strategy, which the new one has aimed to fix. What should be kept in mind is that the new strategy in essence builds on and consolidates the lessons learnt from the crisis, to ensure that the Eurosystem remains well equipped to fulfil its price stability mandate in a sustained manner and to effectively respond to future contingencies.

Implications of a clear, symmetric inflation target and a higher inflation buffer

To begin with, as discussed under Section 4.1, the old formulation of price stability entailed a lower and ambiguous inflation aim. The non-specification of a point target has from the early years of the euro sparked a debate as to the exact numerical value of the price stability objective. According to Paloviita et al. (2021, p. 127), different interpretations of the inflation target may have increased inefficiency in monetary policy-making, posing risks to the anchoring of inflation expectations and to the effective transmission of monetary policy. Moreover, according to the same study, the price stability formulation in the previous strategy was consistent with a lower *de facto* inflation aim: drawing from real time data from the ECB/Eurosystem quarterly macroeconomic projection exercises, the authors suggest that the previous formulation set a *de facto* inflation target of between 1.6% and 1.8%. A low *de facto* inflation aim may have made it more difficult for the ECB to steer actual inflation towards 2%, an important reason being that it may have led to shaping inflation expectations to lower than intended levels. In turn, pronounced negative deficits of inflation expectations from the inflation target contributed to a decline in nominal rates and to record-low, below-zero since the summer of 2014, levels of the policy rate. The lower inflation target in the previous strategy formulation is thus thought to have led to a higher probability of hitting the effective lower bound, reducing the monetary policy space and the leeway for the Eurosystem to respond to negative shocks. This is also illustrated in Cecioni et al. (2021), who show that a lower inflation target is associated with larger disinflationary bias, higher volatility of inflation and more frequent incidence of effective lower bound episodes. The commitment to a higher inflation target in the new strategy widens the safety margin above the effective lower bound and, thus, reduces the likelihood of hitting it (Deutsche Bundesbank 2021).

Moreover, the double-key formulation of price stability in the context of the previous strategy entailed an inherent *asymmetry* in the reaction function. Negative deviations from the inflation target were seen to be in line with the price stability objective and called for a weaker monetary policy response relative to positive

44 For an additional assessment of the 20 years of the ECB monetary policy, see Hartmann and Smets (2018).

deviations, to which the ECB was seen as prone to react more proactively and aggressively. This led to a misperception of low-inflation bias in the ECB's monetary policy, with implications for both inflation and output. According to Cecioni et al. (2021), in the presence of a binding effective lower bound, an asymmetric range target with a focal point ceiling produces approximately three times lower average inflation and double (negative) output gap relative to a symmetric response around the same focal point. Clarity with regard to a specific *point symmetric* target in the new strategy is seen to provide the ECB with the impetus for strong action in response to both positive and negative deviations, with favourable effects on inflation and output.

The presence of downward wage rigidities in the euro area also supports the case for a higher inflation target. When wage contracts are sticky, firms and workers often show resistance to reductions in nominal wages, even when faced with large adverse shocks. Since nominal wages do not easily decline when warranted by economic conditions, firms respond to sluggish demand and compressed profit margins through depressed hiring rates, leading to higher or more protracted unemployment, with negative implications for output. In other words, when downward wage rigidities become binding, macroeconomic adjustment is managed in terms of quantities (unemployment) rather than in terms of prices (Consolo et al. 2021).

An increase in the inflation target could offer the advantage of less frequent episodes of binding downward wage rigidities and, by implication, lower unemployment and higher output levels. Abbritti et al. (2021) provide evidence that the constraint on downward wage rigidity becomes more binding in an environment of low growth, low inflation and high volatility, advocating the case for a high inflation target in such context. Benigno and Ricci (2011) examine the macroeconomic implications of downward wage rigidities in a low inflation environment. They show that at high inflation the inflation-output trade-off is virtually vertical, but becomes flatter at low inflation, which indicates that increasing inflation would imply gradually lower output costs. Fahr and Smets (2010) show that at low steady state inflation rates adverse shocks imply larger costs for downward wage adjustments than at higher inflation rates. Accordingly, a positive but low inflation rate target can be seen to provide an insufficient safety margin against adverse and persistent effects on unemployment and output. Brought to the euro area context, these findings are consistent with the view that had a higher inflation target of 2% been sought and achieved in the crisis years, more room for downward adjustments to prices and wages would have been made available, before rigidities became binding. This would have implied that some of the costs in terms of higher unemployment and lower output growth for the region as a whole (and for Greece in particular) would have been alleviated.

Implications of a forceful and persistent use of monetary policy instruments

The new strategy would have called for the timely adoption, as well as the forceful and persistent use of a combination of unconventional monetary policy instruments earlier in the crisis. By guiding the Governing Council towards an unconventional policy toolkit, and notably towards earlier recourse to large-scale purchases of government bonds, such a strategy could have contained to some extent the fallout on the euro area economy and persistent deflation. As explained by Altavilla et al. (2021, p. 21), a pronounced downward drift in inflation expectations took place in the euro area, "*partly due to a perceived reluctance on the side of the ECB to embark on unconventional policy early in the post Great Financial Crisis phase and with sufficient conviction*".[45]

The public sector arm of the expanded asset purchase programme (i.e. the PSPP) was only

45 Inflation developments in the euro area over this period reflect various developments, including – but not limited to – persistent weakness in oil prices, the tight fiscal stance and the euro exchange rate (see Altavilla et al. 2021).

announced in January 2015, at a time when euro area headline inflation had already turned negative for the second consecutive month, after hovering at around 1% on average over the preceding 2.5 years. ECB purchases of government bonds under the Securities Markets Programme (SMP) implemented earlier in the crisis (from May 2010)[46] were targeted at restoring the impaired monetary policy transmission mechanism in certain stressed jurisdictions (including Greece) but did not affect the stance, as the liquidity provided through these operations was sterilised. As noted in Hartmann and Smets (2018, p. 48), SMP interventions were seen to be timid by market participants and "*did not succeed in stemming the rise in sovereign spreads*".[47]

The effects of this delayed implementation on the euro area economy were exacerbated by various factors, including a restrictive fiscal stance, unprecedented market uncertainty, banking vulnerabilities, structural weaknesses, the incomplete institutional set-up of the euro area, and country-specific policy decisions, the analysis of which is beyond the scope of this paper. A different constellation of monetary policy, as bestowed upon the new strategy and first tested in the context of the pandemic, could have to a certain extent contained the fallout, as it would have supported:

i. The timely adaptation of the unconventional monetary policy toolkit in an innovative and flexible way. A major innovation included the design of the new TLTRO-III series during the pandemic: depending on their lending performance, banks could receive longer-term funding under the TLTRO-IIIs at interest rates below the negative deposit facility rate.[48]

ii. The forceful or persistent implementation of unconventional monetary policy. The ECB embarked on the PEPP, a private and public sector asset purchase programme unprecedented in size, already in March 2020, illustrating its strong conviction and determination to counter early on the acute phase of the crisis.

iii. Leaning against financial market fragmentation and impaired monetary policy transmission, via implementing more flexible asset and country allocation. The PEPP was equipped with the flexibility to adjust the volume of purchases over time, across asset classes and among jurisdictions.[49] Event-study evidence reviewed by Altavilla et al. (2021, p. 13) shows that the greater flexibility imbedded in the PEPP may have contributed to its stronger impact on sovereign yields compared with the APP, for a given envelope.

iv. Flexibility across assets and jurisdictions under the PEPP has implied that Greek government securities were made eligible for purchase under the programme, despite the fact that these assets did not meet the minimum credit quality requirements at the time. This decision has been instrumental in containing more adverse dynamics that might have otherwise occurred in Greek markets. Eligibility for purchase under the PEPP defused the risk of fragmentation in the Greek bond market and averted a pronounced tightening in financing conditions.

In essence, the new strategy would have allowed the Eurosystem to embark early enough and with sufficient resolve on unconventional monetary policy. Euro area countries could have seen faster and more sustained convergence of inflation to its target,

46 SMP interventions started in May 2010 and faded out in the relatively stable first half of 2011, but as the sovereign debt crisis negatively affected Italy and Spain in July 2011, a reactivation of the SMP was effected on 7 August 2011 (Hartmann and Smets 2018). The termination of the programme was announced in August 2012.

47 The Outright Monetary Transactions (OMTs) announcement in September 2012 managed to address impairments in the transmission channel and euro redenomination fears, although OMTs have never been activated.

48 See speech by ECB Executive Board Member I. Schnabel in October 2021 entitled "Lessons from an unusual crisis" (https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp211001~ca589c6afc.en.html).

49 For more information on the PEPP, see https://www.ecb.europa.eu/mopo/implement/pepp/html/index.en.html and https://www.ecb.europa.eu/mopo/implement/pepp/html/pepp-qa.en.html.

more favourable financing conditions and bolder economic recovery. The commitment to an especially forceful or persistent monetary policy action would have alleviated the fallout on the economy from the severe shocks experienced in many jurisdictions, most notably Greece, paving the way for macroeconomic stabilisation and growth. Such a response would have showcased the flexibility, potency and determination of the ECB to react to the past crisis in a timely, forceful and persistent manner.

Implications of patience and commitment

The new strategy provides a device for the Governing Council to commit itself to avoiding a premature tightening, which, as laid down in the monetary policy strategy statement, "*may imply that inflation runs moderately above the target for a temporary period*".[50] On certain occasions, once in 2008 and twice in 2011, the Governing Council was confronted with the situation of supply-side disturbances, causing inflation to rise above target in the short term, while projections indicated inflation subsiding to below mandate levels in the medium term. The Governing Council opted for a rate hike in all these episodes of transitory inflation spikes, decisions which were reversed shortly afterwards. Had the explicit allowance catered for in the new strategy for a temporary overshooting of the inflation objective been considered then, the Governing Council could have been inclined to look through the build-up of temporary price pressures on these occasions, thereby avoiding the premature tightening of rates, which posed downside risks to the economic activity.

Implications for fiscal and monetary policy interactions

The interactions between fiscal and monetary policies in the euro area need to be seen through the lens of the unique establishment offered by the European Monetary Union with single monetary policy that lacks a single fiscal counterpart. Under this set-up, monetary policy has been mandated by the EU Treaty[51] with the primary objective of price stability, and was not made subject to any other considerations. Fiscal policy on the other hand, which remained under decentralised responsibility, was made subject to specific rules, which intended to stabilise fiscal behaviour. The euro has been based on monetary dominance, out of concerns that fiscal dominance would compromise central bank independence, a prerequisite for currency stability. As I. Schnabel (2020) has put it, the principle of monetary dominance is "*buttressed by far-reaching political dominance, the prohibition of monetary financing of public debt and a comprehensive fiscal framework*".[52]

The strict interpretation of this principle, however, has in practice led to the perception that fiscal and monetary policy had to work separately to achieve their targets, and not in complement to each other. When monetary policy became constrained by the effective lower bound for much of the past decade, it was left with relatively little room for manoeuvre to stabilise the economy and lift inflation. Fiscal policy, which could have played a significant stabilisation role, remained overly restrictive, as governments strived to correct large fiscal imbalances, a process which further fuelled deflationary pressures. According to Bini Smaghi (2021), the overall fiscal stance in the euro area tightened between 2013 and 2019 from a primary deficit of 0.6% of GDP to a surplus of 0.8% of GDP. Greece, in particular, went through one of the toughest fiscal consolidation efforts ever experienced in an OECD country, turning a deficit of 15.1% of GDP in 2009 into a surplus of 1.1% of GDP in 2019.

To illustrate the impact on euro area inflation, had the fiscal stance been supportive to the monetary policy stance in the context of the sovereign debt crisis, Bańkowski et al. (2021) have examined a simple counterfactual

50 See "An overview of the ECB's monetary policy strategy", p. 10.
51 See the Treaty on the Functioning of the European Union, Article 127(1).
52 See the opinion piece by ECB Executive Board Member I. Schnabel published in *Frankfurter Allgemeine Zeitung* in October 2021 entitled "The ECB's independence in times of mounting public debt" (https://www.ecb.europa.eu/press/inter/date/2020/html/ecb.in201010~438af28894.en.html).

scenario. The results indicate that had a patient and countercyclical fiscal policy accompanied the implementation of the APP on the part of the ECB from 2015 onwards, a large part of the second downturn in the euro area associated with the sovereign debt crisis would have been alleviated and inflation could have been closer to the 2% target.[53] What is more, rates would have hit the lower bound with a delay of almost two years (by end-2017, instead of the actual mid-2015). Fiscal policy would thus have augmented monetary space with positive implications for growth and employment, on average, for Europe and notably for Greece, considering the fiscal multipliers that prevailed.

The pandemic has marked a break with the tradition prevailing in the preceding decade. It has provided a remarkable showcase of the great potential that monetary and fiscal policies can deliver when they complement one another, especially at the zero lower bound. On the one hand, the ECB has made forceful use of its unconventional monetary policy tools safeguarding favourable financing conditions and enabling the smooth functioning of the transmission mechanism. The commitment through the forward guidance that policy rates will not increase until inflation rises to its medium-term target in a durable manner produces higher fiscal multipliers.[54] Asset purchases in turn, by shifting the sovereign yield curve lower, reduce borrowing costs for governments and add fiscal space. On the other hand, the fiscal response to the pandemic, unprecedented in size and scale, has played a major stabilisation role. Such combined policy implementation, which puts emphasis on macroeconomic stabilisation, ultimately enhances the sustainability of sovereign debt, since it allows the economy to grow. In this way, fiscal policy makes its best contribution to price stability, complementing the scope of monetary policy and amplifying its effectiveness.

The new ECB strategy has built on this circumstance. It has acknowledged the importance in complementarity —as opposed to substitutability— of monetary and fiscal policies, especially in crisis situations. As recognised in the strategy overview note,[55] "*countercyclical discretionary fiscal policy is important in times of crisis and especially in proximity to the lower bound*". The implications of this recognition are important for all euro area countries. For as long as the real natural interest rate remains very low and the growth rate is positive, the difference between the two, which is the relationship that drives debt dynamics, will be close to zero or negative. Therefore, the debt ratio can be less of a source of concern. Fiscal policy could use the increased fiscal space to support the recovery and raise inflation.

Going forward, and outside of the strategic review, the call for more fiscal coordination among national authorities needs to be pursued further. This has been especially evident from the success that the euro area governments have seen in coordinating their policies to combat the economic effects of the pandemic. Moreover, stronger fiscal integration at the European level can be effected. The NGEU recovery instrument has been a critical step towards this direction and should be complemented by further similar initiatives in a more permanent way. Finally, the introduction of a Eurobond would be a significant step towards the enhancement of safe assets availability and serve as a milestone in the completion of the euro area architecture. Through these avenues, better stabilisation outcomes can be achieved, with positive indirect repercussions for price stability.

Implications for the adjustment of macroeconomic imbalances across member countries

The accumulation of weaknesses across several euro area countries in the run up to the global financial and sovereign debt crises, including current account deficits but also fiscal and financial imbalances, was followed by

53 See also keynote speech by ECB Executive Board Member F. Panetta in June 2021 entitled "Monetary-fiscal interactions on the way out of the crisis" (https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp210628~695f98b30c.en.html).
54 See footnote 53.
55 See footnote 50.

significant adjustment efforts in the second decade of the euro. As Gibson et al. (2013, p. 13) highlight, monetary unions are faced with "*reduced flexibility to adjust to asymmetric shocks. In the face of such shocks, real-exchange-rate adjustments in individual countries need to be brought about entirely through adjustments of domestic prices and wages, that is, through internal devaluations.*" In the context of the euro area crisis, the effort to achieve the required adjustment was further hampered by the low-inflation, low interest-rate environment prevailing in the euro area over this period. With the decline in average inflation to low and even negative rates in the aftermath of the sovereign debt crisis, it became more difficult for some countries to achieve the required internal devaluation. As discussed in Rostagno et al. (2019, p. 71), "*in a currency union the union-wide inflation rate sets the bar around which cross-country relative price adjustments need to take place*". A bar set to very low levels implies that some countries would actually need to run into deflation to be able to regain their competitiveness.

Greece can provide the prime example of this circumstance. As illustrated in Consolo et al. (2021) in a simple purely mechanical counterfactual analysis, had the euro area-wide inflation target objective of "below, but close to, 2%" been reached in the second decade of the euro, the periods with negative inflation rates would have been less prolonged (although not altogether avoided). Prolonged negative inflation in the context of this exercise is defined[56] as negative inflation of four or more consecutive quarters. Over the 2009-2019 period, prolonged periods of negative core inflation were actually experienced in Ireland, Slovenia, Greece, Spain and Cyprus. Assuming that euro area inflation had stood at 1.9% over this period, the exercise shows that only Greece and Ireland would have experienced prolonged periods of negative core inflation, still of lower duration. By implication, in the new strategy context, assuming that the target of 2% had been achieved, the Governing Council would have been required to calibrate its monetary policy in line with an even more accommodative stance, implying that negative headline and core inflation rates could have been less protracted and prevailed for even shorter periods of time.

Accordingly, a higher inflation target, as embedded in the new strategy, would have offered a wider safety margin against deflation risks for Greece and, more broadly, for the euro area. On this premise, the overview note of the ECB's new monetary policy strategy states explicitly that "*an inflation buffer allows for a smoother adjustment of macroeconomic imbalances, avoiding inflation in individual countries persistently falling into negative territory*".[57] The debate on how to ameliorate adjustment costs is still vibrant, and calls to complete the euro area architecture and increase risk sharing have received great attention. In this direction, topics like a common fiscal capacity, the advancement of the capital markets union and a common European deposit insurance scheme need to feature more prominently in the European agenda.

7 ASSESSMENT OF THE STRATEGY REVIEW

The outcome of the strategy review was overall positively received by market participants and analysts. The majority were content with the more transparent and ambitious inflation target, its symmetric formulation and the introduction of the overshooting clause. According to the special ECB survey of professional forecasters on the new monetary policy strategy,[58] three-quarters of the respondents considered the new strategy to be an improvement and to make it easier for the ECB to meet its mandate. Around one-third of the respondents had

56 To distinguish with transitory periods of up to three consecutive quarters.
57 See footnote 4.
58 See the results of a special survey of professional forecasters on the ECB's new monetary policy strategy (https://www.ecb.europa.eu/stats/ecb_surveys/survey_of_professional_forecasters/html/ecb.spf202111_specialsurvey~a0b43ca7b3.en.html).

changed or would change their expectations following the announcement of the strategy review. Their forecasts regarding the ECB's policy measures were revised in the direction of an easing of the policy stance. Results from the survey from the Deutsche Bundesbank Online Panel Households[59] show that the new definition of the inflation target is associated with moderately higher inflation expectations in the next years.

Still, a share of people was less satisfied; some would have preferred the ECB to aim a higher inflation target and to compensate for past negative deviations of inflation from its target, by explicitly allowing inflation to overshoot rates consistent with the definition of price stability, while others saw risks associated with inflation exceeding its target even temporarily. In the survey conducted by the Centre for Macroeconomics (CFM) – Centre for Economic Policy Research (CEPR),[60] 60% of the experts questioned argued that the ECB should systematically allow inflation to exceed its target in order to make up for periods of below target inflation, i.e. to adopt an average inflation targeting regime. 40% of the experts preferred the current policy of standard inflation targeting, under which present monetary policy decisions are not dependent on past inflation outcomes – as the saying goes, "let bygones be bygones".

Average inflation targeting is an alternative strategy for maintaining price stability, classified under history-dependent monetary policy regimes, that aims to stabilise an average rate of inflation over a specific period. The Federal Reserve System adopted an asymmetric type of average inflation targeting regime in its 2020 strategy review. In particular, the Federal Reserve Board announced[61] that "*following periods when inflation has been running persistently below 2 percent, appropriate monetary policy will likely aim to achieve inflation moderately above 2 percent for some time.*" Under this regime, the Federal Reserve Board commits to compensating only for negative past deviations from the inflation target in order to keep average inflation on target – although without specifying the time period over which the average of the inflation rate is calculated.

Reichlin et al. (2021) have suggested that if the ECB followed the Fed's approach, it would be better equipped to manage inflation shortfalls and to ensure that inflation is, on average, consistent with its numerical objective. Average inflation targeting strategies, which are credible and well understood by market participants, can be successful in steering expectations for future inflation in the right direction towards levels consistent with the desired target. Households and firms are basing their consumption, saving and investment decisions on their expectations about future economic conditions and policy rates, thus influencing overall economic activity and price setting. Therefore, under make-up strategies, it is easier to undo the negative biases in inflation induced by the effective lower bound and requires less forceful intervention. Empirical research[62] compares the macroeconomic stabilisation properties of standard inflation targeting and history-dependent strategies, namely average inflation targeting and price level targeting. According to their findings, average inflation targeting is more successful, compared with inflation targeting regime, in reducing distortions of inflation and generating fewer episodes where the effective lower bound becomes binding. The inclusion of a make-up component in the formulation of the price stability objective could contribute to better inflation performance in the euro area. Even the mere announcement could be sufficient to drive market and public expectations on future inflation to levels consistent with price stability, without the central bank having to take actual policy actions.

59 See https://www.bundesbank.de/en/publications/research/research-brief/2021-43-inflation-target-881212.
60 See https://cfmsurvey.org/surveys/ecb-monetary-policy-and-catch-inflation.
61 See the Fed's statement on longer-run goals and monetary policy strategy (https://www.federalreserve.gov/monetarypolicy/files/fomc_longerrungoals.pdf).
62 See ECB (2021b), Deutsche Bundesbank (2021) and Busetti et al. (2020).

However, several studies[63] point out that the effectiveness of make-up strategies in general hinges on the degree to which they are credible and well understood by the private sector, the extent to which market expectations are forward-looking and rational, and the consistency in households' and firms' economic behaviour. Such regimes are subject to weak credibility, since market participants may speculate that the central bank will refrain from allowing inflation to overshoot its target once it is achieved. Moreover, it is difficult to justify a monetary policy stance that is not aligned with economic developments. For instance, a central bank may find it hard, in case inflation had been above target in the previous period, to not adopt an expansionary monetary policy in response to falling inflation during a recession, and vice versa. In order to be efficient, make-up strategies have to be carefully communicated and provide specific information on the period over which average inflation is calculated, as well as on the size of acceptable deviations from the target.

What is also worth exploring further is the adaptation of the standard ECB toolbox. The unconventional measures introduced during the crises need to remain available under normal times and not only in the vicinity of the effective lower bound. Especially, the flexibility embedded in the measures adopted during the pandemic crisis must be incorporated into the permanent tools. The wide inclusion of bonds across asset classes and among jurisdictions under the PEPP has been successful in limiting segmentation and fragmentation, and in safeguarding the smooth transmission of the monetary policy (Costain et al. 2021). Thus, there is scope for lowering the minimum credit quality thresholds to enable a wider range of government securities to qualify for purchase under the APP, in the spirit of the PEPP. It is crucial to guarantee adequate representativeness of all member countries in the purchase programmes and the credit operations, and to safeguard favourable financing conditions in every jurisdiction. This could be further enhanced by restraining reliance on external rating agencies, for instance by defining eligibility criteria based on in-house credit assessment systems.

Moreover, the imposition of limits may come to the detriment of the effectiveness of the asset purchase programmes. The issue and issuer limits under the PSPP, imposed to prevent the central banks from holding the largest share of public debt, have restricted the potential amount of assets that could be purchased and hence the potential monetary policy accommodation. Simulations by the Deutsche Bundesbank (2021) provide evidence of a marked increase in inflation towards its 2% target if purchase programmes had been implemented without limits.

Furthermore, inclusion of additional asset classes, also across the entire maturity spectrum, may be required to ensure adequacy of purchasable securities and effective targeting of the yield curve. Flexibility in terms of allocation of purchases over time and provision of sufficient leeway facilitates a regular and consistent presence in the markets and preserves benign market conditions in the face of potential short-term market tensions. The possibility to step up the pace of purchases in the event of unwarranted tightening in financing conditions, but also to decelerate purchases if not deemed necessary, is key to strengthening the ability of the central bank to safeguard price stability. Needless to say, flexibility could compensate for higher volumes of purchases. The less flexible the purchase programme, the larger its envelope would have to be. Conversely, a smaller envelope would be sufficient if the purchase programme is flexible enough.

Regarding the temporary easing measures that were adopted under the collateral framework, they have managed to augment the eligible collateral pledged by banks to participate in the Eurosystem's refinancing operations. In combination with the amendments of the

63 See Coibion et al. (2020b), Coenen et al. (2021) and Candia et al. (2020).

modalities of the third series of the TLTROs, the ECB succeeded in ensuring wide participation and high take-up in its liquidity-providing operations, as well as in providing ample liquidity to the financial sector. Streamlining the eligibility criteria for securities posted as collateral and further enlarging the available collateral pool is thus essential in order to address financial pressures and limit market inefficiencies. At the same time, it can contribute to maintaining favourable financing conditions for the real economy and continue to support banks' credit provision to households and firms.

Finally, prudent and clear communication remains a fundamental tool to anchor expectations about future policy actions and has a significant impact on interest rates at all maturities. There is still some potential for improvement. Financial markets have sometimes misinterpreted the ECB's policy statements, leading to more volatility than justified. One reason for this misinterpretation is the existence of cacophony. Dissenting voices are detrimental to the efficient transmission of the policy signal. In addition, on certain occasions, the ECB's messages could have benefited from more precision and clarity. Therefore, coherent communication by all Governing Council members would reinforce the credibility of the decisions taken and improve the public interpretation of the policy messages. Accurate and clear communication is necessary to enhance markets' understanding of complex central banking issues. In particular, expanding the focus of the central bank communication to include issues that matter most to the public —especially wealth, unemployment and inequality— would help explain the ECB's insights into these matters, but also clarify the limits of what the Eurosystem can achieve in these areas. Furthering the presence of national central banks that constitute part of the Eurosystem in general-interest local media, as well as on social media platforms could also help directly reach out for a broader audience, especially younger people.

8 EPILOGUE

The strategy review marks a historic shift for the monetary policy of the Eurosystem. In practice, the changes reflect the legacy of the previous crises; they systematise the lessons learnt from past mistakes and misachievements. They also consolidate the successful use of the policy instruments employed to overcome the effective lower bound and to restore the transmission mechanism. As Jean Monnet wrote in his memoirs in 1976, "*Europe will be forged in crises, and will be the sum of the solutions adopted for those crises*". In this connection, the new elements of the monetary policy strategy mirror the necessary adaptations made in the conduct of monetary policy with a view to empowering the Governing Council to deliver on its price stability mandate. A first testament to the success of the new strategy was the response of the Eurosystem to the pandemic emergency. What remains to be seen is how the new strategy will take on new challenges, such as the further incorporation of financial stability and climate change considerations into its monetary policy framework.

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