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The New Euro Area Inflation Indicator and Target: The Right Reset?



Policy Department for Economic, Scientific and Quality of Life Policies
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Abstract

This paper clarifies the main features of the European Central Bank's revised inflation target in light of international practices, discusses the role of financial stability in the medium-term orientation of monetary policy decisions, and quantifies the possible impacts of the inclusion of the costs related to owner-occupied housing on the inflation indicator which is subject to the inflation target.

This paper was provided by the Policy Department for Economic, Scientific and Quality of Life Policies at the request of the committee on Economic and Monetary Affairs (ECON) ahead of the Monetary Dialogue with the ECB President on 15 November 2021.

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CONTENTS

LIST OF FIGURES	4
LIST OF TABLES	4
LIST OF ABBREVIATIONS	5
EXECUTIVE SUMMARY	6
1. INTRODUCTION	7
2. THE ECB'S INFLATION OBJECTIVES	10
2.1. The previous inflation objective	10
2.2. The new ECB monetary policy framework and inflation target	11
2.3. Comparing central bank inflation targets	12
3. THE ROLE OF FINANCIAL STABILITY IN THE MEDIUM-TERM ORIENTATION OF MONETARY POLICY DECISIONS	15
4. THE AUGMENTED INFLATION INDICATOR	18
4.1. Options for including owner-occupied housing costs in price indices	18
4.2. Currently available European indicators for owner-occupied housing costs	21
5. IS THE ECB'S NEW MONETARY FRAMEWORK FUTURE-PROOF?	24
REFERENCES	25

LIST OF FIGURES

Figure 1:	ECB staff macroeconomic projections for euro area core inflation (moving 12-month average rate of change)	8
Figure 2:	Market-based five-year average headline inflation expectations	11
Figure 3:	Evolution of the Consumer Price Index (CPI) and the Personal Consumption Expenditure Price Index (PCEPI) for the United States	19
Figure 4:	Evolution of various housing-related price indices for the euro area (% change per year)	22
Figure 5:	Exercise deriving an OOH-augmented HICP using different approaches (% change per year)	23

LIST OF TABLES

Table 1:	Average annual inflation in 2014-2019	7
Table 2:	Comparison of inflation targets and indicators of major central banks	14
Table 3:	Comparison the current housing-related components of euro area HICP and US PCEPI	21

LIST OF ABBREVIATIONS

BoE	Bank of England
BoJ	Bank of Japan
CPI	Consumer price index
ECB	European Central Bank
FED	Federal Reserve
HICP	Harmonised index of consumer prices
NAWRU	Non-accelerating wage rate of unemployment
OOH	Owner-occupied housing
PCE	Personal consumption expenditures
PCEPI	Personal consumption expenditure price index

EXECUTIVE SUMMARY

- **The 2021 European Central Bank's (ECB) monetary policy strategy review resulted in useful changes to the monetary policy framework, informed by numerous thorough analyses done by ECB staff.**
- **The ECB's justification for the monetary policy review was significant structural changes in the economy** since the previous review of 2003. These changes include a declining equilibrium rate of growth and lower equilibrium interest rates, which reduce the scope for interest cuts in a cyclical downturn. In our view, the ECB's systematic forecasting failure was an even more important justification for a review and revision of models.
- **The most important change arising from the review has been the replacement of the earlier ambiguous inflation objective by a clear 2 % symmetric inflation target.** The previous objective might have been perceived as asymmetric, resulting in more forceful monetary actions in case inflation overshoot 2 % than when inflation fell short of 2 %. In fact, both actual inflation and expected long-term inflation were close to 2 % for about a decade after the previous review in 2003, suggesting that the 2014-2019 inferior inflation outcome cannot be attributed to perceived asymmetry alone.
- **While the US Federal Reserve (Fed) decided for average inflation targeting in its 2020 monetary policy review, the ECB has not.** The ECB's new target resembles the Fed's previous target. The Fed's main justification for an average inflation target is the anchoring of long-term expectations. ECB staff research presented an analysis of average inflation targeting, yet it is unclear why the ECB Governing Council did not opt for average inflation targeting.
- **The strategy review maintained the medium-term horizon for maintaining price stability, but did not define what "medium term" means, and added an extra layer to the reasoning.** Financial stability concerns could be a factor influencing the actual time horizon of the medium term. While there are synergies between monetary and financial stability policies, the two policy areas need different tools. More clarity is needed on the influence of financial stability concerns on monetary policy and its time horizon, also to ensure ECB accountability.
- **The ECB plans to include costs related to owner-occupied housing (OOH) in the inflation indicator.** In the US, the "rental equivalence" method is used to include OOH costs, while Eurostat and ECB seem to favour the "net acquisition" approach. The latter might involve an asset price component in the inflation indicator. We calculate that adding an OOH price index which is based on the net acquisition approach to the HICP would have increased annual inflation by 0.23 % points on average from 2016 to 2020, but adding an OOH price index which is based on the rental equivalence method would have left HICP practically unchanged.
- **Whether the revised inflation target will be future-proof depends primarily on whether inflation can be kept close to 2 %.** Nevertheless, the new framework has many forward-looking elements, including the incorporation of OOH in the inflation indicator, the formal inclusion of financial analysis, the incorporation of climate factors in monetary assessments and in the design of certain instruments, and the revised communication strategy to reach the wider public. The date set for the next review (2025) is a form of insurance for changes if the newly-adopted framework proves to have deficiencies.

1. INTRODUCTION

Despite the European Central Bank's (ECB) deployment of a massive monetary policy arsenal, inflation in the euro area has remained relatively low in the past decade. The period from 2014 to 2019 – following the euro area crisis and before the outbreak of the COVID-19 pandemic – was characterised by strengthened growth and job creation, yet annual inflation was 0.9% on average, below the values observed in the United States and the United Kingdom (Table 1). While there was some ambiguity in the ECB's inflation objective (as we discuss in section 2), actual euro area inflation outcome was clearly below that objective.

Table 1: Average annual inflation in 2014-2019

	Headline inflation	Core inflation
Euro area (HICP)	0.9 %	1.0 %
United States (CPI)	1.6 %	2.0 %
United Kingdom (CPI)	1.6 %	1.7 %

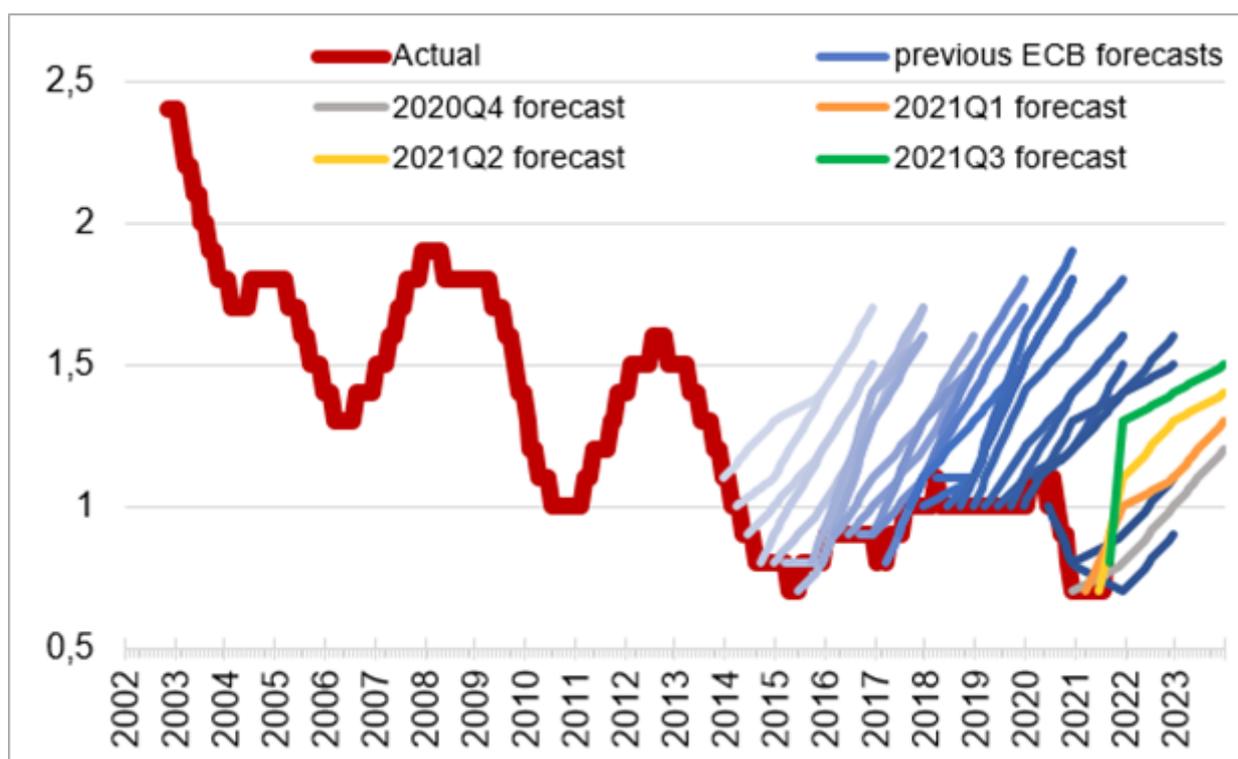
Source: OECD, Eurostat.

Note: For comparability, we use the consumer price index (CPI) for the United States, even though the Federal Reserve targets the price index of personal consumption expenditures (PCE). See section 3 for a comparison of US CPI and PCE.

Low actual inflation has possibly contributed to a decline in inflation expectations, risking a vicious circle between lower inflation, lower inflation expectations and lower economic activity. Thus, a review of the ECB's monetary policy strategy, which was started in January 2020, was warranted.

Besides low inflation, the ECB's systematic forecasting failure also justified a review of the monetary strategy – a crucial factor in our view, which was not emphasised in the outcome of the strategy review. Figure 1 shows that since 2014, when the ECB started to publish its core inflation forecasts, these forecasts turned out to be systematically biased. Between 2014 and 2019, ECB staff repeatedly predicted that core inflation would start to rise quite substantially, but this did not happen; the rate of core inflation remained stuck at close to, and often below, 1%.

Figure 1: ECB staff macroeconomic projections for euro area core inflation (moving 12-month average rate of change)



Source: Updated from Darvas (2018) using data from Eurostat and various vintages of ECB forecasts. Available at: <https://www.ecb.europa.eu/pub/projections/html/index.en.html>.

Note: Actual data is the thick red line (moving 12-month average), while the thin colourful lines show the ECB forecasts made in each quarter. ECB forecasts are available for annual values. That is why we use the 12-month average rate of change for the actual data. Such moving average data is (practically) equal the annual average in December of each year. In the chart the end observation (December of various years) of each forecast curve corresponds to the annual average forecast numbers published by the ECB. We have linearly interpolated the annual average forecast data and the data in the month of the date of the forecast. Note that the actual data for the month when the forecast is made is not yet known at the time of the forecast, given data publication delays.

Possible explanations for the forecasting failure could include unexpectedly fast expansion of the labour force, overestimation of the non-accelerating wage rate of unemployment (NAWRU), underestimation of labour market slack, and overestimation of the relationship between excess unemployment and wage and price growth (i.e. the Phillips curve relationship). Such estimation errors would be unfortunate by themselves, and they had to be persistent to explain systematic forecast errors.

In Darvas (2018), we found that market participants might disregard forward guidance after large systematic forecast errors, as shown by the systematic interest rate forecast errors made by the Sveriges Riksbank. Forward guidance is also an important ECB policy tool and might contribute to the bank not reaching its goals when forecast errors are systemic. Thus, at least a review of forecasting models, but also more generally a review of monetary policy strategy, is necessary after a long period of too-low inflation and systematic forecast errors.

Formally, the ECB's justification for the monetary policy review was significant structural changes in the economy since the previous review in 2003. Changes included a declining equilibrium rate of economic growth, slowing productivity, the ageing population, the legacy of the financial crisis and low interest rates which reduce the scope for central banks to ease monetary policy using conventional instruments

in the face of adverse cyclical developments¹. The outcome of the review was announced on 8 July 2021, and included, among other elements, the definition of the ECB's new inflation target: 2% inflation over the medium term, with the target being symmetric². The inflation indicator is expected to be modified at some point in the future by inclusion of costs related to owner-occupied housing (OOH).

The goal of this paper is to clarify the main features of the ECB's revised inflation target in light of international experiences. To this end, we compare the ECB's new target with its previous objective and with the new target of the Federal Reserve, which was announced in 2020. We briefly analyse the challenges related to, and implications of, the inclusion of the costs related to owner-occupied housing in the inflation indicator. Finally, we offer some concluding remarks on whether the new ECB monetary policy framework is future-proof.

¹ ECB Press Release: [ECB launches review of its monetary policy strategy](#).

² ECB Press Release: [The ECB's monetary policy strategy statement](#).

2. THE ECB'S INFLATION OBJECTIVES

2.1. The previous inflation objective

The ECB's previous inflation objective consisted of a quantitative definition of price stability, adopted in 1998:

"Price stability is defined as a year-on-year increase in the Harmonised Index of Consumer Prices (HICP) for the euro area of below 2 %."

and a clarification issued in 2003:

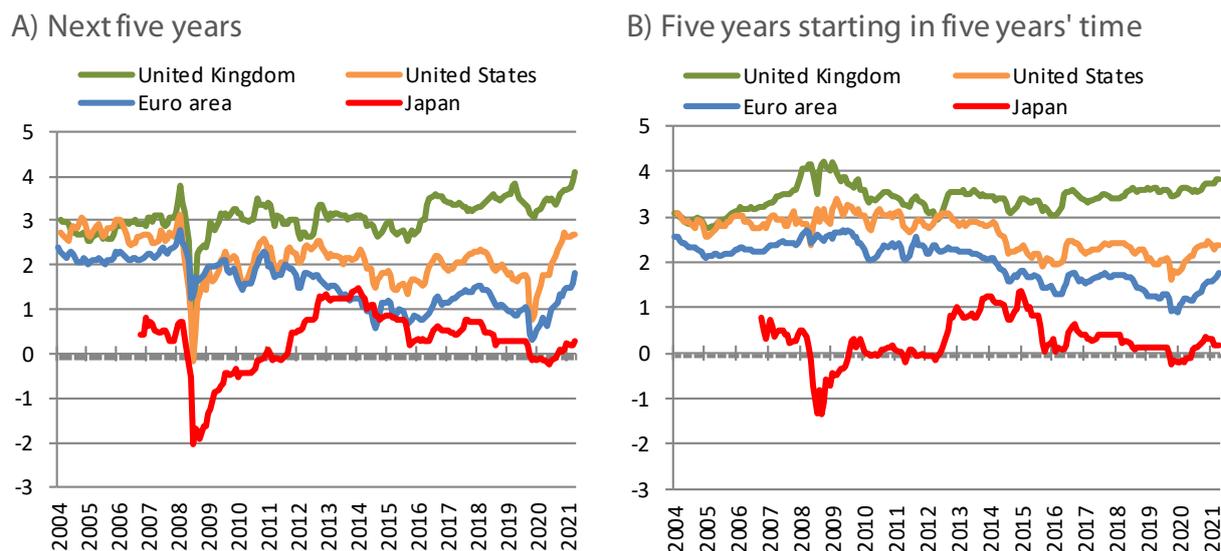
"The Governing Council clarified in 2003 that in the pursuit of price stability it aims to maintain inflation rates below, but close to, 2 % over the medium term."

According to ECB (2021b), the 1998 definition was maintained for reputational reasons in 2003, as then-ECB President Wim Duisenberg said at a press seminar that changing it would have created *"a big credibility problem"*. The ECB's inflation objective was unique among central banks, as it included a numerical range (inflation below 2 % implies the range of 0.1 %-1.9 %) and a non-precisely defined focal point (below, but close to, 2 %). Other central banks typically adopted a well-defined numerical target, which gives a clearer understanding of the objective of the central bank.

The ECB's unique inflation objective has been the subject of debates and controversies since the 2003 clarification was issued. A particularly important issue was whether this objective was symmetric or asymmetric. Perceived asymmetry could have itself introduced a downward inflation bias. This is because as inflation nears 2 %, the probability of overshooting 2 % becomes greater, which can lead to a forceful monetary policy reaction. But no such mechanism would be triggered for downside deviations. This could have implied that, even if the actual inflation aim was, say, 1.9 %, the likelihood of positive deviations from it was smaller (because of forceful monetary policy actions) than the likelihood of negative deviations from it (because of less forceful monetary policy actions). This in turn could have resulted in an inflation rate of less than 1.9 % on average, influencing inflation expectations. As ECB (2021b) summarised, the academic literature achieved mixed results on the empirical measurement of whether the earlier inflation objective was symmetric or not. Using a text-mining technique to analyse the introductory statements at ECB press conferences, Paloviita et al. (2020) concluded that the policy response to inflation above the target was stronger than the policy response to inflation below the target. Rostagno et al. (2019) could not distinguish between an asymmetric reaction around 2 % and a symmetric reaction around 1.6 %, and Maih et al. (2021) concluded that the ECB behaviour was asymmetric before 2014, but became more symmetric thereafter.

Thus, the perceived asymmetry might have contributed to a downward drift in long-term inflation expectations. Nevertheless, longer-term inflationary expectations (measured as the expected five-year average inflation rate five years from now) remained well-anchored until the mid-2010s, and fell below 2 % in 2014 (Figure 2, Panel B), which is just the opposite of what one would have expected from the above-mentioned findings of Maih et al. (2021). The downward drift continued after 2014, reaching a low point of below but close to 1 % in late 2019, just before the launch of the ECB's monetary strategy review. Therefore, perceived asymmetry, by itself, cannot explain the downward drift of actual inflation and inflation expectations since 2014, because long-term inflation expectations were well anchored from 2003 to 2014 when the same (asymmetric) inflation objective was in place. We cannot exclude the hypothesis that actual inflation developments influenced even long-term inflation expectations, while low actual inflation from 2014 to 2019 could have been the outcome of weak demand during the recovery from the euro area crisis, and larger negative output gaps than what were estimated.

Figure 2: Market-based five-year average headline inflation expectations



Source: Bloomberg.

2.2. The new ECB monetary policy framework and inflation target

The outcome of the ECB Strategy Review was announced on 8 July 2021 by ECB President Christine Lagarde, concluding a process that had been ongoing for around one and a half years, after being postponed because of the pandemic crisis.

Among the various changes announced by the ECB Governing Council, the quantitative definition of price stability – the ECB's primary objective – was one:

"The Governing Council considers that price stability is best maintained by aiming for two per cent inflation over the medium term. The Governing Council's commitment to this target is symmetric. Symmetry means that the Governing Council considers negative and positive deviations from this target as equally undesirable."

President Lagarde made clear that symmetry does not mean average inflation targeting, which was the strategy the Federal Reserve System recently decided to pursue, as the outcome of their strategy review announced in August 2020. In addition, *"especially forceful or persistent monetary policy measures"* are to be expected if the economy moves closer to its effective lower bound, which could lead to periods in which inflation overshoots the target.

The medium-term remains the assessment horizon preferred for taking monetary policy decisions aimed at maintaining price stability. This time horizon allows the central bank to analyse the transmission of its monetary policy to the economy and ultimately to inflation rates, while tolerating short-term deviations from the target. The key ECB policy rates remain the main monetary policy instrument to achieve the primary objective, but the set of tools available to maintain a 2% inflation rate is not limited to that. The so-called *"non-conventional"* instruments – forward guidance, asset purchases and longer-term refinancing operations – are options available to the ECB to deploy, especially in view of the effective lower bound on interest rates.

The inflation indicator to measure the achievement of the target will be augmented:

"The Governing Council confirms that the Harmonised Index of Consumer Prices (HICP) remains the appropriate price measure for assessing the achievement of the

price stability objective. However, the Governing Council recognises that the inclusion of the costs related to owner-occupied housing in the HICP would better represent the inflation rate that is relevant for households."

We analyse the significance and implications of this change in the next section.

Another change to the framework used as a foundation for monetary policy decisions is the explicit inclusion of a financial component. Financial analysis has already been included in ECB assessments due to the recognition of the price stability implications of financial instability, and there was even the creation of the European Systemic Risk Board in 2010, in which the ECB plays a dominant role. The ECB was also tasked with supervising euro area banks and has played a role in micro-prudential policies since 2013 in the EU's Banking Union. Nevertheless, the formal pillars supporting ECB monetary policy decision-making were since 1998 the economic analysis and the monetary analysis. These have now been broadened to economic analysis and the monetary and financial analysis.

Moreover, the newly announced revision of the ECB strategy touched upon a topic which has been at the centre of discussions in the past months: climate change. The Governing Council concluded that climate change has consequences for price stability and has delineated a plan³ to integrate climate change into its monetary policy framework. It was acknowledged that both the impact of the ongoing changes in climatic conditions and the current transition towards a greener economy have implications for the economy and affect key macroeconomic indicators, among them inflation and interest rates. As part of the ECB action plan to incorporate climate considerations, disclosure requirements, risk assessments, corporate sector asset purchases and the collateral framework might be tilted towards achievement of climate objectives. Macroeconomic modelling is expected to assess the implications of climate change.

An important question is to what degree these changes can be considered a novelty. While a new review following the 2003 one was definitely worthwhile, nobody expected that the ECB would completely change its monetary policy framework. Several useful analyses were prepared for the review, which themselves help in better understanding the challenges the ECB faces. Nonetheless, the changes to the framework might not be very major. A clear definition of the inflation target is certainly a welcome change, though some observers argued that in practice, the ECB was already aiming for 2% and thus the new inflation target reflects just a change of wording. Incorporation of costs related to owner-occupied housing is again a welcomed decision, which will have some impact on the achievement of the price stability mandate (see section 3). Beyond the primary role of interest rates as a monetary policy tool, the toolkit has in recent years included forward guidance, asset purchases and longer-term refinancing operations. These will continue to be used. Financial stability concerns were already assessed by the ECB, so the inclusion of financial stability among the pillars is a formality. The incorporation of climate change will likely be an evolving issue, and its impact on both climate objectives and the conduct of monetary policy is unclear at the moment.

2.3. Comparing central bank inflation targets

Safeguarding price stability is the main concern of central banks around the world. Several central banks have adopted versions of inflation targeting since the early 1990s. The numerical target is 2% annual inflation for many advanced economies' central banks, including the United States, United Kingdom, Japan and (since July 2021) the euro area (Table 2).

³ ECB Press Release: [ECB presents action plan to include climate change considerations in its monetary policy strategy](#).

Beyond the common 2 % goal, there are differences. In particular, the Federal Reserve decided in August 2020 for average inflation targeting:

"In order to anchor longer-term inflation expectations at this level, the Committee seeks to achieve inflation that averages 2 percent overtime, and therefore judges 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."

In contrast, the ECB has not decided for such a regime, but in essence the ECB's new inflation target is the same as Fed's previous inflation target. It is therefore important to understand the reasons for the different choices of the Fed and the ECB.

The main purpose of the Fed's introduction of average inflation targeting is to anchor expectations at 2 %. As the Fed's statement argues:

"Inflation averaging less than 2 percent over time can lead to an unwelcome fall in longer-term inflation expectations, which in turn can pull actual inflation lower, resulting in an adverse cycle of lower inflation and inflation expectations. With lower expected inflation, the nominal level of interest rates will be lower too, leaving less room for the FOMC to cut interest rates when needed to support the economy in a downturn."

Thus, the primary aim of the average inflation targeting regime is to anchor longer-run inflation expectations at 2 %. As Federal Reserve Chair Jerome H. Powell explained⁴:

"In seeking to achieve inflation that averages 2 percent over time, we are not tying ourselves to a particular mathematical formula that defines the average. Thus, our approach could be viewed as a flexible form of average inflation targeting. Our decisions about appropriate monetary policy will continue to reflect a broad array of considerations and will not be dictated by any formula."

⁴ Federal Reserve Chair Jerome H. Powell speech, 27 August 2020. Available at: <https://www.federalreserve.gov/newsevents/speech/powell20200827a.htm>.

Table 2: Comparison of inflation targets and indicators of major central banks

	ECB (2021)	Fed (2020)	BoE	BoJ (2013)
Numerical target	2 %	2 %	2 % (set by the government)	2 %
Type of targeting	Symmetry	Averaging	Symmetry with bands (+/- 1 %)	No explicit reference to symmetry
Time horizon	Medium term	Longer term	Earliest possible time	Earliest possible time
Main measure	Harmonized Index of Consumer Prices (HICP)	Personal Consumption Expenditures Price Index (PCEPI)	Consumer Price Index (CPI)	Consumer Price Index (CPI)
Inflation measure includes OOH	In the future	Yes	No	Yes
Concept for measuring inflation	Cost of goods index	Cost of living index	Cost of goods index	Cost of goods index

Source: European Central Bank, Federal Reserve, Bank of England, Bank of Japan.

Note: The abbreviations in the last two columns of the table should be read as Bank of England (BoE) and Bank of Japan (BoJ).

The ECB's official statement described the new monetary policy framework and, understandably, did not set out reasons for not adopting something else, such as average inflation targeting. Yet ECB (2021b), a report that reflects the views of ECB staff⁵, compared alternative monetary policy frameworks using various economic models. The report concluded that average inflation targeting, as well as other similar strategies including price-level targeting and nominal GDP targeting, are effective tools to reduce negative biases in inflation and economic activity, and also to reduce macro volatility, but only if three important conditions are met: (1) the strategy is credible and well understood by the private sector, (2) private sector expectations are forward-looking and stable, and (3) the economic behaviour of the private sector is consistent. When these conditions are not met, average inflation targeting brings fewer benefits and is not superior to simple inflation targeting. Nevertheless, the report also noted that some findings are sensitive to the modelling framework, suggesting that results are not that clear cut, and the systematic inflation forecast errors of the past decade suggest that the results of modelling should be taken cautiously.

⁵ The full disclaimer is the following: "This paper constitutes staff input into the Governing Council's deliberation in the context of the ECB's monetary policy strategy review. This paper should not be reported as representing the views of the Eurosystem. The views expressed are those of the authors and do not necessarily reflect those of the Eurosystem."

3. THE ROLE OF FINANCIAL STABILITY IN THE MEDIUM-TERM ORIENTATION OF MONETARY POLICY DECISIONS

One of the changes that has perhaps received less attention in the new ECB monetary policy strategy is the expanded framework that now, in addition to the economic and monetary analysis, includes a financial component. The formal acknowledgement of the importance of financial considerations by the ECB is no surprise, given the efforts made since the global financial crisis to put in place macro and micro-prudential mechanisms to support financial stability. However, the implications that this financial component may have for the time horizon considered in monetary policy decision-making should be carefully managed and understood.

In the 2003 Strategy Review, the medium-term horizon for maintaining price stability was justified on that basis that it would allow for sufficient time for monetary policy to transmit to the economy and that it would allow for the ECB to adapt its reactions to different types of shocks, whether from the supply or demand side⁶. The 2021 strategy review maintains the medium-term horizon but adds an extra layer to the reasoning behind the choice of this time horizon. ECB President Lagarde on 8 July said⁷:

"The Governing Council confirms the medium-term orientation of its monetary policy strategy. [...] The flexibility of the medium-term orientation takes into account that the appropriate monetary policy response to a deviation of inflation from the target is context-specific and depends on the origin, magnitude and persistence of the deviation. It also allows the Governing Council in its monetary policy decisions to cater for other considerations relevant to the pursuit of price stability."

The considerations that the Governing Council deems relevant for achieving price stability are not explicitly indicated, leaving room for discretion. No guidelines have been given about the factors that could influence the length of the time horizon. This discretionary component means that monetary policy decisions could have an additional element of uncertainty, which might adversely influence inflation expectations and make accountability more difficult.

Given the addition of financial analysis to the ECB framework, one could suppose that one of these "considerations" is financial stability. A background paper prepared for the strategy review (ECB, 2021c) investigated precisely the relationship between the medium-term orientation and financial stability considerations. The paper highlighted that there are some challenges for implementation, starting with the lack of a clear measure for financial imbalances, as exists, for instance, for the quantification of price stability. Also, the fact that financial cycles tend to be much longer than business cycles poses difficulties in terms of pursuing a medium-term monetary policy that addresses financial stability concerns. For instance, if in order to ensure financial stability, inflation has to be kept low and below target for too long, there could be a risk of adverse side-effects and de-anchoring of inflation expectations.

This risk materialised in Sweden after the global financial and economic crisis, when the Riksbank used the main monetary policy tool, the interest rate, to address some financial stability issues, which led to high costs in terms of economic activity and a major undershooting of its inflation target, as highlighted by Svensson (2019). Faced with a rising household debt-to-income ratio, the Riksbank increased its

⁶ More details can be found in the speech delivered by Jean-Claude Trichet in November 2003. Available at: <https://www.ecb.europa.eu/press/key/date/2003/html/sp031120.en.html>.

⁷ Speech by Jean-Claude Trichet delivered at the Center for Financial Studies' key event, Frankfurt am Main, 20 November 2003. Available at: <https://www.ecb.europa.eu/press/key/date/2003/html/sp031120.en.html>.

policy rate from 0.25 % in July 2010 to 2 % in July 2011. As a result, inflation fell quickly and was around zero for more than two years, well below the 2 percent target, ultimately forcing the central bank to reverse its actions. Moreover, although the Riksbank initially aimed to ward off the threat to financial stability from household over-indebtedness, the household debt-to-income ratio was not affected by the 2010-11 policy of tightening. In fact, the ratio continued to increase in real terms because of the very low or even negative inflation rates.

Additionally, the lack of a synchronised financial cycle across euro area countries makes it harder for an area-wide response to deliver the necessary stabilising effect⁸. More targeted responses from the national competent authorities, including micro- and macroprudential supervision, fiscal policy and regulation of bubble-prone sectors (such as construction), seem to be the preferred and adequate way to respond to such financial imbalances, as argued by Claeys and Darvas (2015).

Nevertheless, financial stability concerns should be included in monetary policy assessments for four main reasons (ECB, 2021c). First, financial instability can have an adverse impact on price stability. For example, the consequences of financial crises for price stability were evident after the global financial crisis: financial instability resulted in economic fluctuations, which in turn led to inflation-rate fluctuations. Second, coordinated macroprudential and monetary policies could complement and strengthen each other, in particular when business and financial cycles are aligned. Third, assessing the effects that monetary policy can have on financial stability (or instability) is important so that efforts can be made to reduce some of the side effects. An example is the implementation of the two-tier system in an attempt to mitigate the costs for banks of the negative interest rate policy. Fourth, monetary policy can be important to support macroprudential policy, especially when the macroprudential framework is still young and not fully developed.

Fed staff also investigated the financial stability component in their preparatory work leading to the revision of the Fed's monetary policy strategy in 2020. The paper specifically addressing this topic (Goldberg et al, 2020) identified arguments for and against the inclusion of financial stability considerations in monetary policy. It concluded that macroprudential and supervision policies are better positioned than monetary policy to address financial vulnerabilities. Also, the use of separate tools for monetary and financial stability policies would avoid any potential conflicts that could arise when including one more goal – financial stability – in a mandate that is already focusing on achieving two objectives: price stability and maximum employment (which make up the Fed's dual mandate). However, Goldberg et al (2020) recognised that monetary policy intervention may be necessary to complement macroprudential tools. For instance, monetary policy might reach a broader set of agents than macroprudential policy, and thereby the former can support the latter. Moreover, monetary policy can be readily implemented to foster financial stability, while the other set of tools requires time and coordination before being ready to deploy.

To sum up, there are synergies between monetary and financial stability policies, but the toolkit should be different. The priority should be to define guidelines on how to include financial stability concerns in ECB monetary policy decision-making, and to what extent the medium-term horizon for price stability could be influenced by financial considerations, which currently remains unclear. The lack of clarity makes ensuring accountability of the ECB more difficult. For now, it seems that factoring in financial stability will involve a careful monitoring of warning signals in the financial sector, and hence

⁸ Merler (2015) concluded that before the global financial and economic crisis, monetary policy unification and interest rate convergence resulted in the divergence of euro area countries' financial cycles. This divergence is deeply rooted in the financial integration spurred by currency union and strongly correlated with intra-euro area capital flows.

the formal inclusion of financial stability concerns in price stability decisions could evolve in a learning-by-doing process.

4. THE AUGMENTED INFLATION INDICATOR

The second set of the November 2021 Monetary Dialogue Papers deal with the issue of owner-occupied housing and its inclusion in the HICP in great detail. Here we will briefly summarise the issue and quantify the possible impacts of such a change on the inflation indicator which is subject to the inflation target. This change in the indicator can have an impact on the numerical inflation target (i.e. the new 2 % inflation target based on the new indicator could prove to result in a lower inflation target than the previous "close to but below 2 %" inflation objective, when considering comparable inflation indicators). Moreover, the new inflation indicator could involve an asset price component, thereby blurring the lines between financial stability policy and monetary policy.

While the HICP remains the selected indicator to measure inflationary developments⁹, the ECB Governing Council called for the inclusion of the costs related to owner-occupied housing. Given that 66 % of euro area households are owner-occupiers¹⁰, neglecting costs related to home ownership is a major deficiency¹¹. At this point, an OOH-augmented HICP indicator is not available, but a multi-year roadmap has been recommended by the Governing Council to compile such a measure¹², with the goal of Eurostat starting to release an official quarterly HICP including OOH costs by 2026, while a monthly index is planned for later. In the meantime, separate OOH indicators will be taken into account as a complement to HICP. OOH costs are included in the indicators considered by the Federal Reserve and the Bank of Japan, but not by the Bank of England (Table 2).

4.1. Options for including owner-occupied housing costs in price indices

The way OOH can be included in a price index also depends on how it is conceptualised, whether the index is designed to capture price changes in a basket of goods and services purchased by households (cost-of-goods index, like Eurostat's HICP and the US CPI), or is envisioned to measure the cost to households of achieving a certain level of utility (cost-of-living-index, like the US Personal Consumption Expenditure Price Index, PCEPI)¹³. For a particular country, the two indices can deviate, as the example of the United States demonstrates (Figure 3). The deviation partly results from differences in the revision of the weights (more frequent for PCEPI than for CPI), and partly because the PCEPI includes expenses that are not directly incurred by households but that benefit households, such as the contributions of employers to their workers' health insurance.

On average, CPI grew by 0.4 percentage points per year faster than PCEPI in the United States from 1990 to 2020. This implies that a 2 % target for the PCEPI by the Federal Reserve is equivalent to a 2.4 % target for the CPI. Since US CPI is comparable to the euro area HICP, the gap between the two indicators implies the US inflation target is somewhat higher than the euro area inflation target, when considering comparable indicators.

In the United States, the "rental equivalence" approach is used when including OOH costs both in PCEPI (which is a cost-of-living-index) and the CPI (which is a cost-of-goods-index). This means estimating

⁹ An important reason for this choice is that the HICP is considered to have four essential characteristics: comparability, reliability, timeliness and credibility.

¹⁰ End of 2019 figures retrieved from Eurostat (online data code: ILC_LVHO02).

¹¹ Certain housing-related costs have been included in the HICP under the category "Housing, water, electricity, gas and other fuels", with an average weight of 16 % in 2001-2020, but not specific costs related to owner-occupied housing.

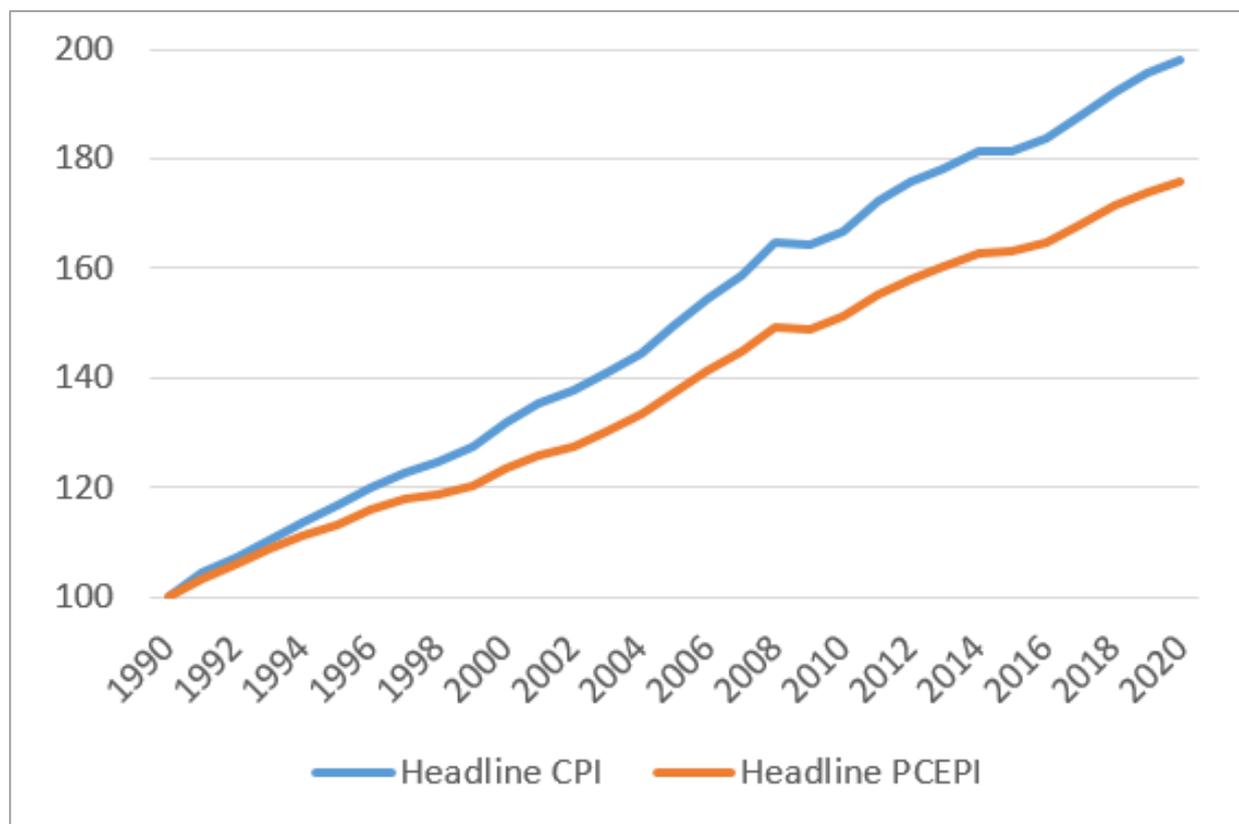
¹² More details on the recommended roadmap can be found in Chapter 3 of the note accompanying the ECB Strategy Review documentation. Available at:

https://www.ecb.europa.eu/home/search/review/html/ecb.strategyreview_monopol_strategy_overview.en.html.

¹³ More on this can be found in Chapter 2 of the Methodological Manual for the HICP (Eurostat, 2018).

what the market rent would be for an equivalent dwelling in the same area (also called owners' equivalent rent).

Figure 3: Evolution of the Consumer Price Index (CPI) and the Personal Consumption Expenditure Price Index (PCEPI) for the United States



Source: Federal Reserve Economic Data (FRED).

The rental equivalence approach is also used in Europe in national accounts statistics for the computation of consumption expenditure of households and its price index. ECB (2021a, page 59) notes that "A fairly harmonised approach exists in national accounts. However, this approach is not granular enough to fully capture the changes in housing costs within the different locations in each country". Some euro area countries also use the rental equivalence approach to include OOH in their national CPI (not in the HICP).

A problem of the rental equivalence approach is that it is difficult to apply when rental markets are thin, while the lack of comparability between the rental and owner-occupied housing markets poses further challenges. Moreover, when rental market regulation imposes controls on rental price changes for sitting tenants, the rental price index might not reflect market developments. An advantage is that the implied costs of all households living in their own properties are taken into account.

For the euro area HICP, which is a cost-of-goods-index, the ECB (2021a), reflecting the views of ECB staff, advocates a net acquisition approach, in line with the conceptual basis of the HICP, while calling for further investigation of how to treat the consumption and investment components inherent in house purchasing.

According to the acquisition approach, "the purchase of a dwelling is recorded as consumption at the time the transaction takes place, as is done with other durable goods" in the HICP (ECB, 2021a, p51). Hence, this approach disregards the fact that the consumption of the good takes place over time. "Net acquisition" in this context means purchases minus sales of dwellings of the household sector from/to other sectors,

while transactions among household entities are excluded. Thus, a drawback of this approach is that it considers only that small subset of households that purchase a new dwelling from the non-household sector, or build on their own¹⁴.

An even more critical issue is the separation of the investment and consumption purposes of new house purchases, since only the consumption element should be included in HICP. With the purchase and owner-occupation of a dwelling, the household benefits from both: (1) having a place to live, meaning not having to rent a dwelling, even though the dwelling has to be maintained and sometimes renovated, and (2) possible capital gains from ownership, since house prices tend to increase over time. ECB President Christine Lagarde highlighted that only the consumption element should be included in the inflation indicator¹⁵:

"What was decided by the Governing Council was to account for the consumer cost of the owner-occupied house. So, it has nothing to do with the investment cost that an owner incurs; it has to do with the consumer cost that the owner of a house actually incurs. It is that particular portion that we want to take into account in order to respond to the frustration of many of the Europeans that we have consulted, and that reached out to us, that the cost of housing was not properly accounted for in the inflation measurements, as they saw it."

However, the separation of the consumption and investment components of homeownership is an unresolved issue. The net acquisition approach advocated by ECB staff implicitly assumes that housing-related consumer costs follow the fluctuations of house prices, an assumption which is not justified. On the contrary, house price changes determine the capital gain (or loss) resulting from investing in a house and thus the house price index reflects the results of the investment motive for home ownership. The inclusion of an investment component via house prices would introduce an asset-price component to the inflation measure, which in turn would weaken the role of price stability and increase the role of financial stability in monetary policy. As ECB (2021a) notes, it *"might blur the lines between macroprudential and monetary policy and imply some trade-off between having a more representative inflation measure and its informational content for the conduct of monetary policy"*¹⁶.

Comparing the current measures used by the ECB and the Fed to analyse inflation developments, we see that the share of housing-related costs in US PCEPI is currently higher (20%) than in the euro area HICP (18%), but the euro area HICP does not include OOH (Table 3). When it is added, the share of housing-related costs will be most likely be higher in the euro area than in the US. In the US, OOH inflation differs from rental inflation, suggesting that the rental equivalence approach indeed makes adjustments in the calculation of OOH costs. It is interesting to note that the average inflation over 2001-2020 of non-housing items (named "other items" in the last but one line of Table 3) was the same in the euro area and the US, and thus the housing component made the overall US inflation indicator higher¹⁷. In the US, OOH costs grew faster than non-housing related inflation. If this would be the case in the euro area, then the inclusion of OOH costs in the HICP could lead to an upward shift in the HICP inflation figure.

¹⁴ Vehicle purchases are treated similarly in the HICP. Vehicles are durable goods, the consumption of which spans through time. However, they are counted in the HICP when the monetary transaction happens. HICP includes only net purchases of new cars and second-hand cars by households from the non-household sector, but does not include sales of used cars within the household sector.

¹⁵ See the questions and answers section of the 8 July 2021 ECB press conference. Available at: <https://www.ecb.europa.eu/press/pressconf/2021/html/ecb.sp210708~ab68c3bd9d.en.html#ga>.

¹⁶ See Box 11 of ECB (2021a).

¹⁷ A direct comparison between these two indicators should be made with caution given the difference in the computation of the two indicators.

Table 3: Comparison the current housing-related components of euro area HICP and US PCEPI

	Weights (2021)		Average inflation (2001 - 2020)		Standard deviation (2001 - 2020)	
	EA HICP	US PCEPI	EA HICP	US PCEPI	EA HICP	US PCEPI
Rentals (tenant-occupied housing)	7.5 %	4 %	1.6	3.1	0.3	0.9
Owner occupied housing costs	0 %	12 %	-	2.6	-	1.0
Water supply and others	3.1 %	1 %	2.3	4.4	0.9	1.1
Electricity, gas and others	5.9 %	2 %	3.0	2.4	5.0	4.8
Dwelling maintenance	1.3 %	0 %	2.3	-	0.9	-
Other items	82.3 %	80 %	1.3	1.3	0.7	0.8
All items	100 %	100 %	1.6	1.8	0.9	0.9

Source: Eurostat, FRED, US Bureau of Economic Analysis.

4.2. Currently available European indicators for owner-occupied housing costs

An OOH price index is available in the national accounts dataset using the rental equivalence approach. In addition, since 2014, Eurostat has released an OOH Price Index using the net acquisition approach, on a quarterly basis, with a delay of approximately one quarter in the data. This index is not yet suitable for inclusion in the HICP, partly because its composition is very different in different euro area countries. According to the roadmap presented by the ECB, it is not possible at this point to foresee a date for monthly releases of an OOH-augmented HICP to be used as the main index for monetary policy purposes, but the roadmap foresees that a quarterly OOH-augmented HICP will be published by Eurostat from 2026. In the case of the US PCEPI, which includes OOH costs using a rental equivalence approach, the release of this data is done on a monthly basis¹⁸.

The OOH Price Index computed by the Eurostat follows a net acquisition approach and has two components: an acquisition component (accounting for around 80 % for the euro area) and an ownership component (around 20 %). The first contains the acquisition of dwellings from the non-household sector and self-building of dwellings, plus related costs, while the second includes expenditures related to owning and maintaining the dwelling¹⁹.

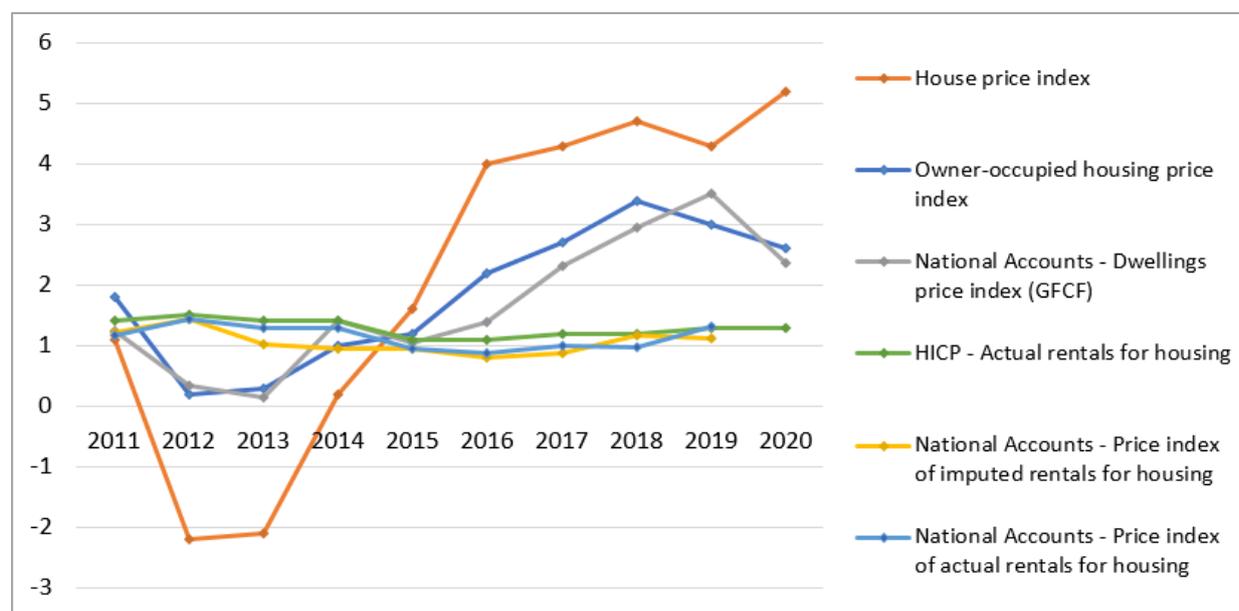
Figure 4 clearly shows the different behaviour of dwelling acquisition price indices (first three in legend) and rental price indices (last three in legend) for the euro area. Rental price inflation tends to be relatively stable over time, in contrast with indices capturing house prices, which fluctuate more visibly.

¹⁸ For more details, see US Bureau of Economic Analysis (2020).

¹⁹ Note that the repair and maintenance included in the OOH and what is already included in the HICP under the component "Maintenance and repair of the dwelling" refer to different non-overlapping costs.

This difference is particularly relevant considering that the inclusion of price developments of one or the other in the HICP depends on the choice of approach to measure OOH costs.

Figure 4: Evolution of various housing-related price indices for the euro area (% change per year)



Source: Eurostat.

Note: The house price index captures price changes of all kinds of residential property purchased by households (flats, detached houses, terraced houses, etc.), both new and existing. Only market prices are considered, self-built dwellings are excluded. The owner-occupied housing price index measures the price changes of dwellings that were purchased for own-use and the cost of all goods and services that households purchase in their role as owners occupiers of dwellings. As this index is based on the net acquisitions approach, only purchased dwellings that are new to the household sector are covered, while transactions between households are excluded. The price index of dwellings from the national accounts is obtained from the section 'Gross fixed capital formation by AN_F6 asset type' [nama_10_an6]. The imputed and actual rentals for housing from the national accounts are obtained from the section 'Final consumption expenditure of households by consumption purpose (COICOP 3 digit)' [nama_10_co3_p3].

We calculate the impact of adding two alternative measures of owner-occupied housing costs to the HICP. The first is the owner-occupied housing price index (based on the net acquisition approach), while the second is the price index of imputed rents for housing from the national accounts. According to national accounts, OOH costs are estimated to represent around 13 % of households' final consumption expenditure in the euro area²⁰. This is fairly similar to the 12 % weight verified for the US CPE, as shown in Table 3, even though this share is likely to be smaller when introduced to the HICP²¹. Assuming a 13 % weight of OOH costs in the HICP, we derive two OOH-augmented HICP versions. When including the owner-occupied housing price index, the augmented HICP would be on average 0.08 percentage points higher than the actual HICP over the period from 2011 to 2020, and 0.23 percentage points higher over the period from 2016 to 2020 (Figure 5)²². When including the price index of imputed rents for housing from the national accounts, the augmented HICP would be, on average, practically the same as the existing HICP (just 0.03 percentage points lower in 2011-2019 and 0.02 percentage

²⁰ Figure retrieved from the Eurostat table [nama_10_co3_p3] "Final consumption expenditure of households by consumption purpose (COICOP 3 digit)", percentage of total for the item "Imputed rentals for housing". The average share from 2011 to 2019 is 13 %.

²¹ According to ECB (2021a) an OOH component included in the HICP would have a lower weight of around 9 % or less.

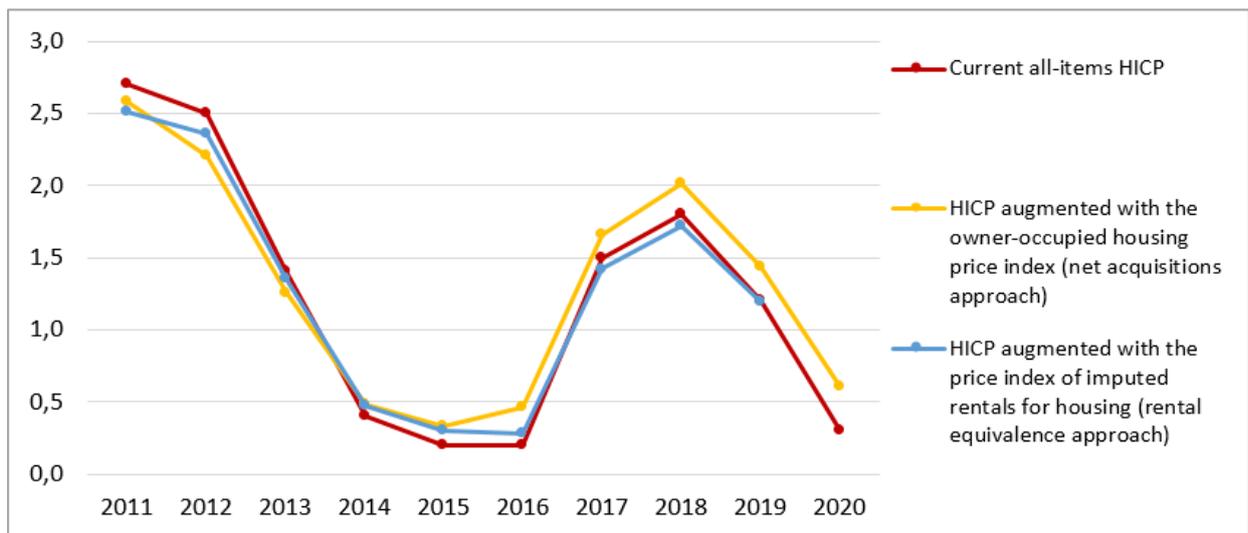
²² ECB (2021a) showed the results of similar analyses and the results obtained are aligned with our exercise.

points lower in 2016-2019). These results do not come as a surprise given the different evolutions seen in Figure 4 for rents and housing prices.

These findings emphasise the importance of discussing the most adequate approach when quantifying OOH costs. The inclusion of OOH costs in the HICP using the net acquisition approach would have reduced the gap between reported inflation and the ECB's "below but close to 2%" objective in the past, whereas there wouldn't be a material difference if the measure had been computed using a rental equivalence approach.

Naturally, a change in the reference inflation indicator used by the ECB in the future will have implications for the quantification of the success in achieving its inflation target, and should therefore be clearly communicated and justified to the general public.

Figure 5: Exercise deriving an OOH-augmented HICP using different approaches (% change per year)



Source: Bruegel calculations based on Eurostat data.

5. IS THE ECB'S NEW MONETARY FRAMEWORK FUTURE-PROOF?

In our view, the success of the new framework will depend primarily on how close inflation stays to 2%. The previous framework also served well until both actual inflation and expected future inflation were close to 2% and questions started to emerge as both actual and expected inflation started to drift downwards. In this regard, the inflation spike of 2021, resulting from renewed demand after the recession and supply bottlenecks brought about by the COVID-19 pandemic, can be an important factor supporting the sustainability of the new monetary framework, since price developments have overshoot the 2% target and long-term inflation expectations have also started to move closer to 2% (Figure 2). This started well before the publication of the ECB strategy review results.

Nonetheless the new framework has a number of positive elements which increase the chance they will become lasting features of ECB monetary policy:

- Before 2021, the ECB's ambiguous inflation aim was unique. The new symmetric 2% target is in line with international practice. A key question is whether the new framework can anchor long-term inflation expectations at 2%, or if a new target, like the Federal Reserve's average inflation targeting, will need to be introduced later.
- The formal inclusion of financial analysis confirms a crucial existing practice.
- The inclusion of costs of owner-occupied housing will result in an indicator more relevant for households.
- Climate change has implications for price stability and the fight against climate change will likely be a central challenge for policymaking in the decades to come; thus closer monitoring of this issue by central banks is also expected.
- A revised communication strategy which aims at better communication geared towards the wider public is another element which will likely long remain important.
- Finally, setting a date for the next strategy review, 2025, works as insurance against maintaining the framework for too long if new circumstances arise or if the inflation target is not met.

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This paper clarifies the main features of the European Central Bank's revised inflation target in light of international practices, discusses the role of financial stability in the medium-term orientation of monetary policy decisions, and quantifies the possible impacts of the inclusion of the costs related to owner-occupied housing on the inflation indicator which is subject to the inflation target.

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