



24-2 The Inflation Surge in Europe

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May 2024

Note: This Policy Brief is part of a series titled *Understanding the COVID Era Inflation*. PIIE gratefully acknowledges the financial support from a donor who wishes to remain anonymous for the research presented in this Policy Brief. The research was conducted independently. Funders are never given the right to final review of a publication before its release. The author thanks Josh Bivens, Karen Dynan, Heidi Shierholz, and David Wilcox for helpful comments and suggestions and Julieta Contreras for eagle-eyed research assistance.

INTRODUCTION

For most of the decade before the COVID-19 pandemic, undershooting rather than overshooting had been the main inflation problem of the European Central Bank (ECB). During 2020, consumer prices in the euro area were falling; by the end of that year, average inflation since the start of the euro two decades earlier stood at only 1.6 percent per year. Things began to snowball in 2021. The 12-month inflation rate steadily accelerated. It reached double digits in the final quarter of 2022—more than twice the level it had ever reached since the euro's introduction in 1999.

Four striking features emerge from a review of the unexpected surge in European inflation since 2021:

- The ECB's monetary policy response lagged behind that of the Federal Reserve, reflecting the more gradual evolution of inflation in the euro area and its distinct pattern of causes.
- The range of inflation rates across different euro area countries has been unprecedented. This largely reflects the differential impact of war-related energy shocks (especially for natural gas piped from Russia) as well as the differential fiscal response by national governments partially insulating consumers from these shocks.
- Not all households were net losers from the inflation, with some benefiting from the fact that inflation reduced the real value of their indebtedness.
- The speed with which inflation was returning toward target during 2023 prompted concerns that the ECB's monetary tightening might have been pushed too far, prolonging the output slowdown.

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Given the dominance within Europe of the euro—the home currency for about 350 million people—the main focus of this brief review is on the euro area. I also make some reference to the three next-largest advanced economies of the continent, namely those of the United Kingdom, Switzerland, and Sweden.

THE PATTERN OF THE INFLATION SURGE IN EUROPE

Although some of the preconditions and some of the drivers of euro area inflation were similar to those in the United States, the timing was different, reflecting transatlantic contrasts. The lag between the increase in inflation in the United States and that in the euro area was about half a year. For example, euro area 12-month inflation remained below 5 percent until December 2021, whereas that level had already been breached in the corresponding US (HICP) index six months previously.¹ Peak 12-month inflation in the euro area at 10.6 percent was slightly higher in the euro area than in the US (10.1 percent) and was reached only in October 2022. (As discussed later, some individual small euro area countries registered much higher peaks).²

To take a broad view, it is informative to look at the *cumulative* inflation between the end of 2019 and the end of 2023. In the euro area, cumulative inflation over those 48 months was 17.7 percent, compared with 18.8 percent in the United States.

Of the other advanced European economies outside the euro area, the United Kingdom recorded somewhat higher cumulative inflation (21.8 percent) than the euro area. At 18.7 percent, Sweden was closer to the euro area average. In sharp contrast was the price stability maintained by Switzerland, where cumulative inflation during the four years to end-2023 was only 5.2 percent (figure 1).

CAUSES

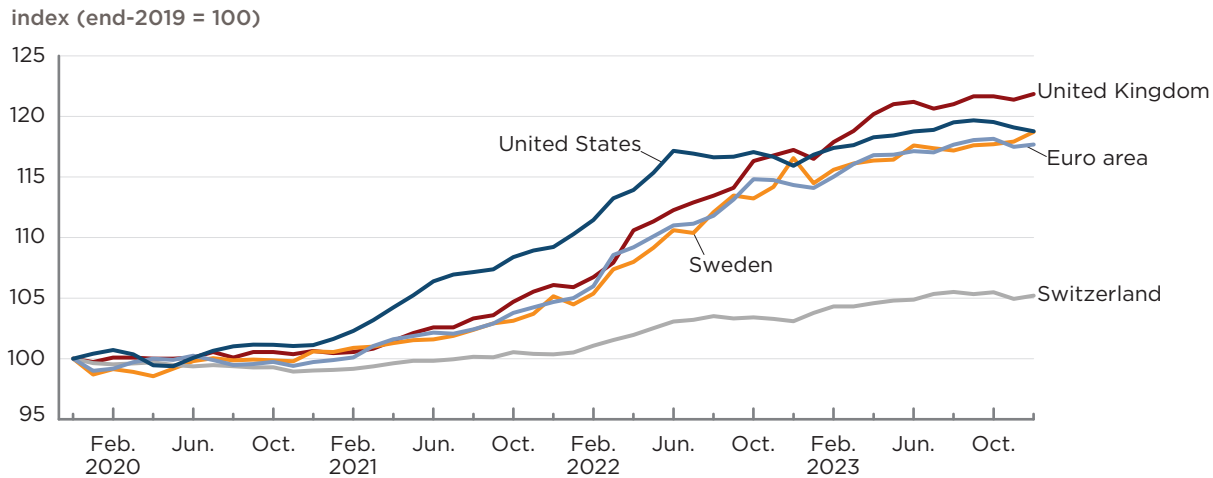
The most striking impulses to inflation in Europe during 2021 and 2022 came from the supply side: global pandemic-related disruption to supply chains, energy price increases, and exchange rate changes.

The *supply chain bottlenecks* were similar to those in the United States. Some came directly from the pandemic, including constraints on manufacturing from shutdowns in China and other supplier countries. The global supply response to shifting demand patterns for semiconductors and some other products was sluggish. Further factors included the shift in demand during 2020–21 from (partly unavailable) services to goods, especially durables, and the transportation bottlenecks to deliver the increased quantity of manufactured goods now demanded. These shifts in the structure of demand happened in Europe as

1 We use the European Harmonized Index of Consumer Prices (HICP) concept. For the United States, this is the research series R-HICP constructed by the US Bureau of Labor Statistics (<https://www.bls.gov/cpi/research-series/r-hicp-home.htm>). It differs from the US consumer price index (CPI) mainly in the treatment of owner-occupier housing (which the HICP largely excludes). But the uptick in the R-HICP and in the US CPI occurred at the same time. The US price index targeted by the Federal Reserve, namely for personal consumption expenditures (PCEPI), rose less, but with a similar time pattern to that of the R-HICP. The United Kingdom no longer publishes the HICP, but its CPI is based on the same definition.

2 Central and eastern European countries outside the euro area also registered high 12-month peaks, for example, 26 percent for Hungary and 19 percent for Czechia.

Figure 1

Consumer price index (HICP) relative to end-2019 US and selected European currencies

HICP = Harmonized Index of Consumer Prices

Note: The euro area is defined as the 20 countries that used the euro as of December 2023: Austria, Belgium, Croatia, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Portugal, Slovakia, Slovenia, and Spain.

Source: Eurostat.

well as in the United States (Bobasu and Gareis 2023). The global supply chain bottlenecks contributed to inflation on both sides of the Atlantic, even though European ports were not as congested as those in the United States. Whether measured by the Federal Reserve Bank of New York's Global Supply Chain Pressure Index or the ECB's bottleneck indicators, supply chain bottlenecks increased fairly steadily from late 2020 until late 2021 or early 2022.

Reflecting these supply chain bottlenecks, it was the price of goods that first accelerated; indeed, in Europe, services inflation was much slower to catch up with that in goods than was the case in the United States.

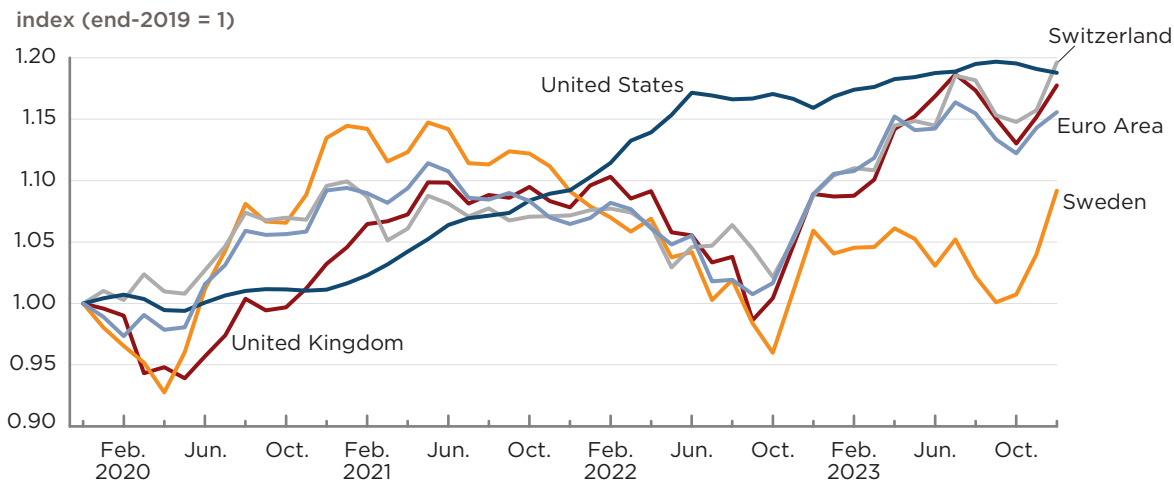
Supply-side effects show up partly in rising unit costs but also in a growing net operating surplus of the euro area business sector during 2022 (Hahn 2023, Hansen et al. 2023).

After 2022, supply chain bottlenecks eased considerably.

Exogenous *energy price* increases, already evident throughout 2021, spiked after Russia's invasion of Ukraine in February 2022. They contributed to a much stronger inflation surge in Europe than in the United States. This was due to Europe's higher dependence on natural gas imported in pipelines from Russia, for which close substitutes were not immediately available. Increases in food prices in global markets (also partly associated with the war in Ukraine) added a further upward supply pressure on consumer prices from mid-2022 (ECB 2024, figure 9).

Thus, a major contrast with the United States is the fact that Europe's aggregate terms of trade deteriorated during this period due to its dependence on imported fossil fuels. The decline was most pronounced in 2021 and early 2022, with some rebound in 2023. (In contrast, the sharp increase in the relative price of energy meant that the terms of trade favored the energy-rich United States.) Average living standards in the euro area barely changed in 2021-23 (this being another contrast with the United States). The development of alternative

Figure 2

Consumer prices measured in a common currency (US dollars) in the euro area, United States, and other selected countries, 2020–23

Note: In this figure, the euro area excludes Croatia, which adopted the common currency only in 2023.

Source: Author's calculations based on Eurostat.

energy sources and the lowering of prices during 2023 eased this situation considerably and contributed to disinflation.

Exchange rate movements must be taken into account to understand European inflation dynamics. Of course, this is a two-way process, with actual and expected inflation, as well as interest rate differentials, influencing the market determination of exchange rates. But safe-haven flows, exogenous to European inflation, contributed to the appreciation of the US dollar against the euro and sterling.

These exchange rate movements seem to have added an additional nominal cost-push in European countries with depreciating currencies from mid-2021 through late 2022. (Here, too, there was a subsequent partial reversal.)

The much lower inflation recorded by Switzerland may also be partly due to a safe-haven exchange rate effect in 2022. Indeed, deviations from purchasing power parity between the euro, the Swiss franc, and the pound sterling over the four years 2020–23 were remarkably small. For example, figure 2 shows that, despite much lower inflation in Switzerland, its price level in a common currency closely tracks those in the larger euro area and UK economies during this four-year period, showing the operation of a purchasing power parity mechanism).

Demand factors were also relevant to the inflation surge, but they were a greater driving factor in the United States. As relative prices changed, the accumulation of household savings (fueled in part by sizable unspent fiscal supports during the pandemic) and the ample bank liquidity (thanks to a decade of monetary ease) created an accommodating environment for price increases on both sides of the Atlantic. This meant that there was little or no countervailing demand limitation to dampen overall inflation.

Still, whereas the continuation of expansive fiscal policy in the United States in 2021 likely contributed an important inflationary impulse in that country, this channel was less prominent in the euro area because of its lower fiscal

impulse. Thus, the excess household savings that accumulated in Europe were somewhat smaller and were not substantially drawn down during 2021–22 (Battistini, Di Nino, and Gareis 2023; Jordà and Nechio 2023).³ Based on European Commission staff estimates, the euro area output gap in 2022–23 was close to zero.

A number of econometric studies have sought to pinpoint the relative importance of various components of supply and demand in euro area inflation, fitting their models to data running back some decades. For example, Bańbura, Bobeica, and Martínez Hernández (2023) use a vector autoregressive (VAR) structure with zero and sign restrictions designed to identify the different types of shock. Their findings in regard to which shocks have contributed most to the 2021–23 surge are qualitatively consistent with the above narrative emphasizing supply shocks and exchange rate movements, especially because “demand shocks” in their methodology include all shocks that have an effect through the exchange rate. Interestingly, they find that energy price shocks have a considerable impact on *core* inflation even though energy prices are not directly measured in the core.⁴

DISTRIBUTIONAL ASPECTS AND SECTORAL ASPIRATIONS

Despite 20 European countries sharing a common currency, there was considerable variation between the experience of different euro area countries.

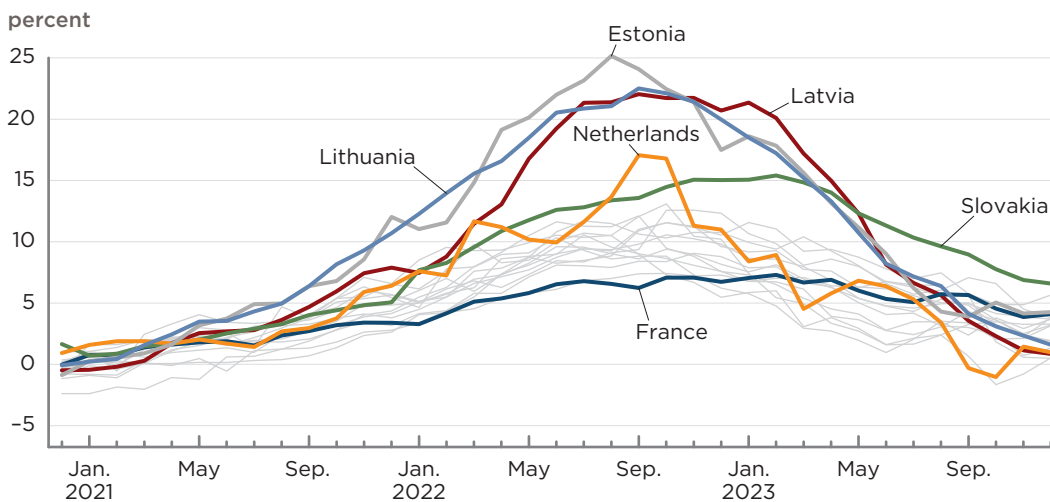
In August 2022, the 12-month inflation rate in Estonia was 25.2 percent, but it was only 6.6 percent in France, a remarkable and unprecedented gap of almost 19 percentage points. And Estonia was not alone: Latvia and Lithuania recorded 12-month peaks of more than 22 percent. By end-2023 the spread had shrunk, but only to just below 6 percentage points (now the largest gap is between Slovakia and Italy; figure 3). (The standard deviation increased across the euro area countries, from below 1 percentage point before the inflation surge to 5 percentage points in September 2022, before falling back to below 2 percentage points by end-2023).

These inflation differentials between euro area countries were also sustained. The countries with the lowest cumulative inflation in the euro area during the four years from end-2019 were Greece and Finland, with less than 14 percent. Once again, smaller euro area countries in central and eastern Europe recorded much higher cumulatives: 36 percent for Estonia (just across the gulf from Finland) and over 30 percent for Lithuania, Slovakia, and Latvia.

3 The potential role of fiscal policy is stressed by Bianchi and Barro (2023); their regressions do not show a significant effect of individual country fiscal impacts in the euro area, but only of the aggregate euro area fiscal stance.

4 Likewise, the econometric models of di Giovanni et al. (2022, 2023) find that supply shocks were relatively more important in the euro area than in the US inflation. De Santis (2024) finds that supply chain disruption shocks contributed more than a third of the increase in euro area inflation (to September 2022), and retail energy shocks 12 percent. Work in progress by Ascari et al. (2024) suggests an even smaller contribution of demand factors to euro area inflation at its peak in late 2022. The estimates of Bernanke and Blanchard (2024) imply that supply shocks dominated the inflation burst not only in the euro area and the United Kingdom but also in the United States.

Figure 3
Twelve-month inflation rates in euro area member states, 2020-23



Note: For each date, the figure shows the percentage increase in the Harmonized Index of Consumer Prices over the previous 12 months. In Estonia, prices increased by 25.2 percent between August 2021 and August 2022; in France over the same period, the increase was 6.6 percent.

Source: Eurostat.

Much of the differential was attributable to cross-country differences in dependence on energy supplies from Russia. The impact of the price increases for energy sourced from Russia on energy costs also differed. The differences reflected technical imperfections in the cross-country transmission of energy supplies as well as the differential energy intensiveness of different economies, and in particular the differing degree to which preconditions made it difficult to substitute away from natural gas imported from Russia (Coutinho and Licchetta 2023; Coutinho et al. 2023; Müller 2023). Baltic countries were particularly dependent on imported natural gas.⁵

Inflation differentials were also significantly affected by different national approaches to fiscal subsidization of retail energy costs. Fiscal measures designed to cushion households from some of the energy price increases were introduced in most European countries. Some of these measures resulted in subsidized prices, thereby directly lowering the measured inflation, whereas others came in the form of lump sums not affecting measured inflation. Energy subsidies could have indirect effects also, some of them deflationary (by obviating explicit or implicit wage indexation), some inflationary (by increasing aggregate demand).

The amount of funding allocated by national governments in the euro area to shield households and firms from the energy price increases of 2021-22 varied considerably from country to country, with a high of almost 7.0 percent of GDP in Malta down to about 0.5 percent in Finland (Sgaravatti et al. 2023). About two-thirds of the sums involved in measures targeting households were used to reduce prices, with the remainder used for income support measures. Almost

⁵ In contrast, the wholesale market for electricity is better integrated and an active market established a common marginal wholesale electricity price across the European Union.

four-fifths applied universally, meaning they were not targeted to particular classes of income levels (Sgaravatti et al. 2023). If they expanded aggregate demand, borrowing-financed fiscal energy subsidies could have an indirect expenditure effect on inflation, partly offsetting reductions in consumer prices of energy products. This does not seem to have been a large effect in Europe, partly because most of the subsidies were time limited. Instead, without the subsidies, it has been estimated that peak euro area 12-month inflation would have been almost 3 percentage points higher (Dao, Gourinchas, and Leigh 2023).⁶

How the welfare of households has been impacted by the unexpected surge of inflation has varied not only by country but also by other characteristics, which can be much more important.⁷ A detailed recent study (Pallotti et al. 2023) examined this issue for the four largest euro area countries. For example, the study considered the way in which inflation lowers the real value of nominal assets and liabilities in a way that is unlikely to be reversed when inflation returns to target, thereby shifting the distribution of net wealth from lenders in nominal assets (such as bank deposits and government bonds) to borrowers (such as mortgagees—especially younger households—and governments). The interest rate increases that have followed have only partially offset this effect for those on floating interest rates. Real interest rate increases engineered to dampen inflation also tend to lower the market capital value of other assets, but they are less likely to be irreversible. Drawing on household surveys, the analysis of Pallotti et al. revealed a remarkable degree of heterogeneity, especially with regard to age. It confirmed that older households tended to suffer more than younger households; indeed, because of their higher nominal indebtedness, many of the 25–44 age group were net gainers from the inflation. The degree of national fiscal support was an important factor. Still, the authors reckoned that the average welfare loss for households in these four countries was very high, equivalent to a disposable income decline of about 3 percent in France and Spain, 4 percent in Germany, and over 8 percent in Italy. Although lower-income households were more exposed to the direct effect of the energy and food price increases, they tended to be sheltered by the sluggishness of housing rental increases.

As with previous large shocks, such as that generated by the global financial crisis, the heterogeneity of the effects of the inflation surge across countries evidently presents policy and political challenges to the European Union's institutions. In particular, communication of ECB policy in stabilizing euro area average inflation has needed to address multiple audiences affected to different degrees by shifting national inflation rates.

6 Baba et al. (2023) suggest further factors: Transmission of shocks into consumer price inflation operates with different speeds in different European countries, and the slope of the Phillips curve also greatly varies, being steeper in emerging euro area economies.

7 One distributional dimension relates to the share of labor income in GDP (though the importance of nonlabor household income at all levels must be borne in mind). In the euro area, this share jumped during the pandemic largely due to government subsidies to wages. It subsequently fell steadily to the end of 2022, dipping well below the long-term average because wages absorbed the terms of trade effect of energy price increases to a greater extent than capital (there was a small recovery in 2023) (Bodnár and Mohr 2023). Labor share movements in the United Kingdom in recent years have been less pronounced, and the 2022 share was close to its long-run average (see the UK Office of National Statistics, <https://www.ons.gov.uk/economy/economicoutputandproductivity/productivitymeasures/datasets/labourcostsandlabourshare>).

THE MONETARY POLICY REACTION

Monetary policy was tightened across Europe in response to rising inflation. Of the world's major central banks, the Bank of England was the first to increase its policy *interest rate* in response to the inflation, doing so in December 2021, thus well before the Federal Reserve.

The ECB waited some months after the Fed before raising its policy rates, reflecting that the rise in price (and wage) inflation in the euro area was also several months behind that in the United States (Lane 2024). The ECB's policy rate increase in 2021–23 was somewhat lower than that of the Fed, and it was slower to wind down its asset purchase program.

The ECB waited until July 2022 to adjust rates, though long-term yields on euro area government securities increased much earlier because markets responded to the official indications that a policy response would not be delayed indefinitely (Evdokimova et al. 2023, 12). (Indeed, the 10-year yield on German *bunds*, which had been negative for over 2.5 years, turned positive in late January 2022, passed 1.0 percent in early May, and exceeded 1.7 percent in June—before any ECB rate increases.⁸) By that time, responding to its higher inflation rates, the Fed had already made three successive increases (figure 4).

ECB and Fed rate increases then kept in step for the remainder of 2022, with the ECB's deposit rate staying more than 2.25 percent below the midpoint of the Fed's funds rate target. By steadily ramping up its rates, the ECB partially reversed the exchange rate depreciation that had occurred during 2021–22. In 2023 both the Fed and the ECB continued to increase rates, but now the ECB was increasing more, thereby narrowing the differential to about 1.25 percent by the end of 2023.

At that point the Bank of England had brought its rate up to 5.25 percent—about the same level as the Fed.

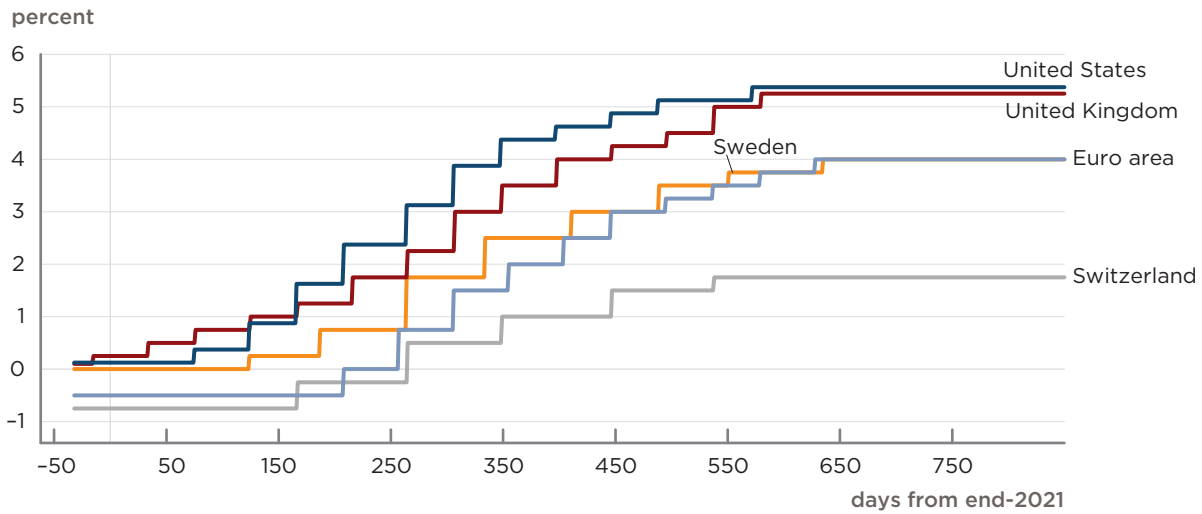
Of two smaller European non-euro area countries, Sweden's Riksbank steered a course roughly midway between the Fed and the ECB, whereas the Swiss National Bank (SNB), enjoying a much lower inflation rate, increased rates on a much more gradual trajectory, reaching only 1.75 percent by end-2023.

Having reached an effective lower bound of short-term interest rates, the main European central banks had ramped up their *asset purchases* in response to the money market turmoil and decline in economic activity associated with the COVID pandemic in March 2020. All of the central banks slowed or terminated their asset purchase programs during 2021.

The largest asset purchase program—and the last to be terminated—was that of the ECB. It had restarted its program in late 2019 but ramped up purchases dramatically from March 2020 in response to the pandemic in the supplementary so-called pandemic emergency purchase program. Figure 5 shows that monthly net purchases under the two programs combined peaked at €159 billion in June 2020 and were running in excess of €100 billion per month in July 2021; monthly net purchases slowed steadily after this time, becoming negative in July 2022 (thus, about the time of the first interest rate increase). By then, net purchases since end-2019 totaled €2.4 trillion, or about 20 percent of euro area GDP in 2020.

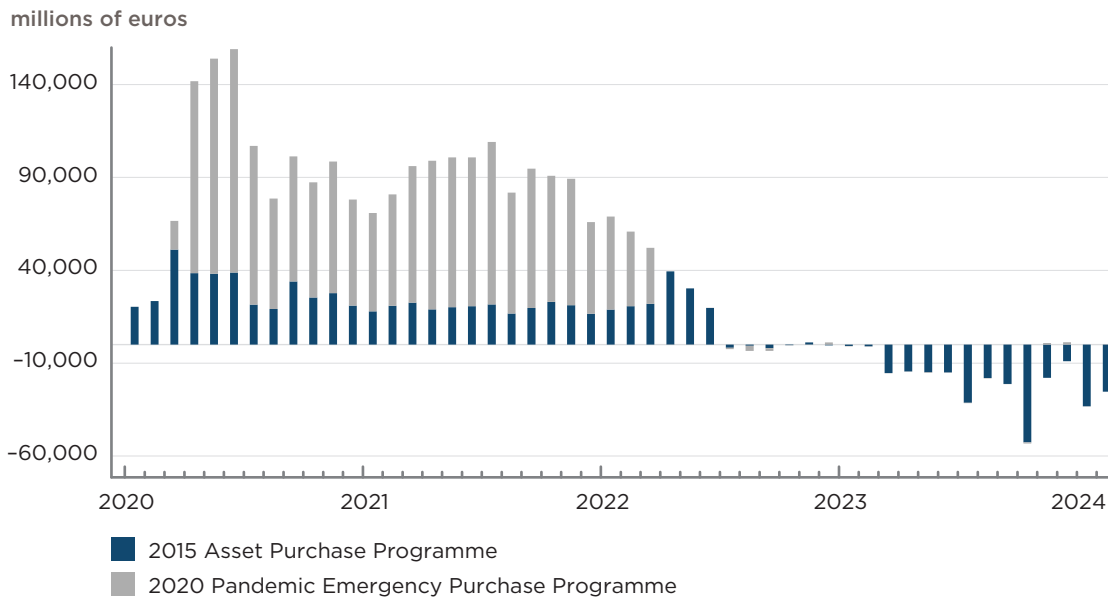
8 Whereas US 10-year yields remained below 2 percent until March 2022, rising over 3 percent in early May, and not reaching 4 percent until October. Indeed, the spread of US over German yields showed no clear trend during 2022.

Figure 4
Policy interest rates in selected countries, December 2021-April 2024



Source: Central banks of the economies shown in the figure.

Figure 5
Net monthly asset purchases by the European Central Bank, January 2020–February 2024



Source: European Central Bank.

The United Kingdom and Sweden had both terminated net asset purchases by the end of 2021, and both stopped full reinvestment of maturing assets during 2022.⁹ The SNB's purchases of foreign exchange followed a broadly similar pattern, with net sales on average from the start of 2022.

IMPACT OF MONETARY POLICY

How effective was the monetary policy response in Europe to the rise in inflation? Given the importance of one-off supply shocks in driving the surge, is it conceivable that, even without the interest rate increases, medium-term inflation expectations might have remained reasonably anchored? Might inflation have gradually returned close to target without such sizable interest rate increases? After all, global energy price reversals took a lot of the oxygen out of the inflation. Furthermore, the fall in inflation by the end of 2023 occurred before any increase in euro area unemployment rates. And the dynamic through compensatory wage increases has been weaker than during the 1970s.¹⁰ Still, this would be a heterodox view.

More plausible is the conventional view (Amatyakul et al. 2023). According to this viewpoint, the continued anchoring of inflation expectations required the central bankers to demonstrate and confirm their determination to bring inflation back to target. They accomplished this by increasing interest rates, despite this being a generally unpopular step and one that was likely to slow the postpandemic recovery of economic activity. After all, as shown by Acharya et al. (2023), the way in which household expectations of increased inflation from the supply shocks combined with firms' pricing power had the potential to generalize into a broad-based inflation in Europe during 2022. Nevertheless, it is worth noting that median consumer inflation expectations for three years ahead in the euro area moved up from 2 percent to 3 percent only in March 2022 and was still at 3 percent when the ECB raised rates in July. This allows us to conclude that the ECB started to increase rates before consumer inflation expectations had drifted very far from its 2 percent target.

The cost of protection against long-term euro area inflation (for between 5 and 10 years ahead, as indicated by the "5y5y" inflation-linked swap rates in financial markets) did spike from below 2.0 percent to about 2.5 percent immediately after the invasion of Ukraine. An ECB model suggested that most of this spike reflected a risk premium rather than a shift in expectation. As inflation accelerated, swap rates increased again during 2023, occasionally going as high as 2.6 percent.

9 The Bank of England's announced decision toward the end of 2022 to actively sell some of its holdings was not derailed by the decision to resume net purchases for a couple of weeks following the poorly received government budget of September 2022 (Andrew Hauser, "Thirteen Days in October: How Central Bank Balance Sheets Can Support Monetary and Financial Stability," speech at the European Central Bank's 2022 Conference on Money Markets, Frankfurt, November 4, 2022, available at <https://www.bankofengland.co.uk/speech/2022/november/andrew-hauser-keynote-speech-at-the-european-central-bank-conference-on-money-markets>).

10 Of these European countries, the one with the earliest and biggest increase in interest rates was the United Kingdom. Despite that tightening of monetary policy, the United Kingdom experienced the highest cumulative inflation. This might also be seen as an indication of the limited and delayed impact of interest rate movements on aggregate inflation.

Should the ECB have raised interest rates sooner—for example, as soon as the invasion of Ukraine sent energy prices much higher? Those with long memories will recall that the ECB had a reputation of tightening too soon. Its previous interest rate increases (in 2008 and 2011) are both criticized as an overreaction to global energy price increases. Both of those increases were quickly reversed and are now generally seen as having been mistakes. During the global financial crisis, the ECB was also widely criticized for being too slow to lower interest rates and too slow in moving to large-scale asset purchases (quantitative easing), though that cannot be said of its reaction to the pandemic.

Clearly, inflation was slower to get under way in Europe than in the United States, and that fact alone can excuse much of the delay in tightening monetary policy. All in all, there is little basis for any assertion that the 2022–23 euro area inflation surge would have been much shorter or had a much lower amplitude if the ECB had moved a few months earlier.¹¹ Perhaps the main channel of transmission would have been through a stronger exchange rate.

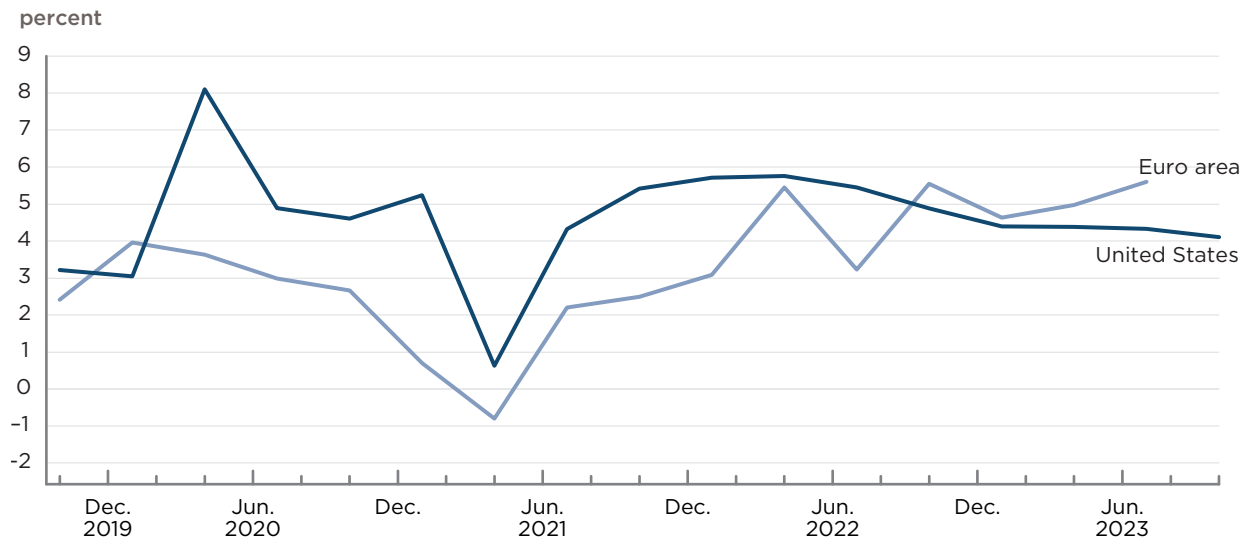
Once it began to move, the ECB continued to raise rates at a brisk pace for over a year. Did it persist in this tightening for too long, bringing interest rates to too high a level? Would inflation have slowed sufficiently, and with less damage to the level of economic activity if the ECB's action had been less aggressive? To the extent that the rate increases were likely important in confirming the ECB's reputation as an inflation fighter, it is possible that this could have been achieved with a smaller overall increase, especially if it had begun earlier. Estimating the likely scale and timing of the adverse effect of euro area interest rate increases on output is an uncertain business, not least because of how low interest rates have been over a long period during which there has been considerable structural change. It is therefore too early to settle this question, given the likely duration of the impact of the rate rises on economic activity. To answer it, we will need the outturn of 2024 and 2025. Certainly, there has been a growth slowdown in much of the euro area, most notably Germany, with zero growth overall during 2023. But a lot of the slowdown can be attributed to the adaptation that was necessary to cope with higher energy costs and with a far smaller flow of natural gas from Russia, as well as weaker demand in China for European exports, rather than just being a consequence of the interest rate increases.

THE FULL UNRAVELLING OF THE PRICE SHOCK

Yet it is also too soon to state categorically that second-round effects of the price increases will be contained, considering the sharp fall in real wages that occurred in 2021–23 and the continued tightness of labor markets. Average unemployment in the euro area fell to its lowest-ever rate of 6.4 percent in late 2023. The tendency for profits to increase at the outset of the inflation means the business sector will be able to absorb some clawback of real wage losses without much of a further increase in prices. Like prices, wage rates were much slower to

11 For instance, the model of Bańbura et al. (2023), mentioned earlier, finds only a small impact of interest rate policy. The approach of Bernanke and Blanchard (2023) does not explicitly examine an interest rate effect, this being implicitly captured through their labor market tightness variable.

Figure 6
Hourly earnings in the United States and euro area, 12-month inflation, 2019–23



Source: Author's calculations based on OECD Main Economic Indicators and US Bureau of Labor Statistics via Federal Reserve Economic Data.

increase in the euro area than in the United States.¹² With nominal wage increases becoming more prevalent during 2023, it remains to be seen how large second-round inflation effects resulting from the attempt of workers to restore former real income levels will result, causing a persistence of inflation. All in all, the medium-term outcome of the contest between labor and capital unleashed by the unexpected surge in prices cannot yet be forecast with certainty (figure 6).

Econometric studies seeking to use data on past experiences to measure the degree to which real wage shocks are likely to pass through to second-round effects on price inflation reach varying conclusions. ECB staff projections as of March 2024 foresee inflation at 2.3 percent in 2024 and averaging below 2 percent in 2025–26.

If the conflict in Ukraine and other geopolitical forces that have increased energy and food prices are resolved soon, the volatile noncore prices could fall back, reversing some of the inflation and thereby easing or even eliminating the pressure on real wages. But that too remains to be seen.

Notably, using a Bayesian approach to estimating a neo-Keynesian model of wage and price determination to see how the euro area economy has reacted to demand and supply shocks in the period up to the middle of 2023, Galstyan (2023) presents projections of the degree to which real wage adjustments might occur in future years if the economy is to return to the initial preshock steady state, clawing back the losses that occurred up to then.¹³ The point estimates

12 Wage inflation has varied widely across the euro area and ran well below the consumer price inflation of 2021–23 (Górnicka and Koester 2024).

13 Galstyan's model has generic similarities to that of Blanchard and Bernanke (2023) for the United States but employs a more elaborate dynamic structure as well as the Bayesian approach to parameter estimation.

obtained suggest only a small degree of clawback of about 0.5 percentage points per annum. Bernanke and Blanchard (2024) also find little evidence of catch-up in their 11-economy analysis.

But to the extent that a terms of trade loss is permanent, the new long-term equilibrium will mean that the real wage losses may not be fully reversed (except from such extraneous factors as productivity growth). In that case, the potential of a more persistent inflationary impulse from a struggle between capital and labor for output share cannot be ruled out (Corsetti et al. 2023). But nor can data from the euro's quarter century of history provide much evidence on how large or prolonged this tussle might be.

CONCLUDING REMARKS

After a decade during which the main price stability challenge for the main European central banks was to avoid deflation, the sudden and sharp surge in prices came as a shock. A certain degree of complacency from the years of the “Great Moderation” had led many policymakers as well as independent observers to suppose that the tools of modern central banking would enable any upward pressure on prices to be rapidly suppressed. The independence of the central bank in the use of these tools (notably, and to an unmatched degree, at the ECB) reinforced this view. An expectation that any threat to price stability would come from fiscal indiscipline bolstered this attitude.

Things worked out rather differently. The shocks, at least in Europe, were sudden and came mainly from the supply side; savings and liquidity conditions were so easy that the economy was able to absorb supply-side-driven nominal price increases without much compression of demand. The combined effect was a relatively brief but severe inflation reaching double digits on an annual basis—a rate that had not been seen for half a century in advanced economies.

The sense that the energy price increases associated with Russia's invasion of Ukraine might be short-lived likely stayed the monetary policy reaction by a couple of months, but that is not likely to have greatly affected the scale of the surge. To what extent the monetary tightening will have limited economic activity in Europe when the full effect has worked through remains to be seen; in early 2024, with euro area GDP flat for almost a year, it is not clear that a technical recession will be avoided.

The impact of these shocks has differed both within and across different European countries, even in the euro area, reflecting differing preexisting economic structures as well as differing national fiscal policy responses. In this respect, as in so many others, Europe demonstrates itself to be a more complicated polity than the United States.

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