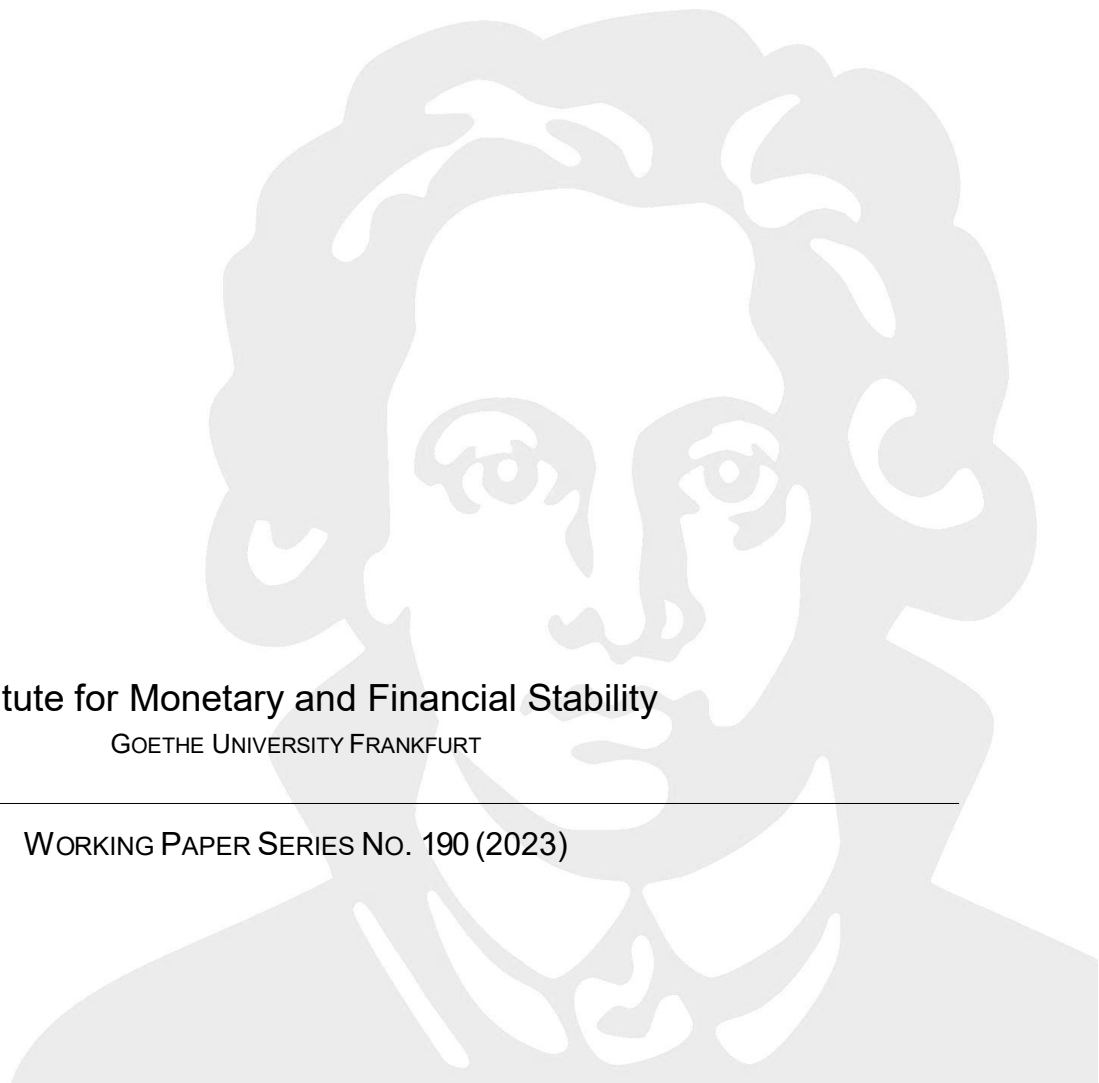ATHANASIOS ORPHANIDES

The Forward Guidance Trap

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Abstract

This paper examines the policy experience of the Fed, ECB and BOJ during and after the Covid-19 pandemic and draws lessons for monetary policy strategy and its communication. All three central banks provided appropriate accommodation during the pandemic but two failed to unwind this accommodation in a timely manner. The Fed and ECB guided real interest rates to inappropriately negative levels as the economy recovered from the pandemic, fueling high inflation. The policy error can be traced to decisions regarding forward guidance on policy rates that delayed lift-off while the two central banks continued to expand their balance sheets. The Fed and the ECB fell into the forward guidance trap. This could have been avoided if policy were guided by a forward-looking rule that properly adjusted the nominal interest rate with the evolution of the inflation outlook.

Keywords: Monetary policy strategy, forward guidance, policy rules.

JEL Classification: E52, E58, E61.

I.   Introduction

The recent past has been a tumultuous period for central banks. In 2020, the pandemic posed an unprecedented challenge that could have led to a catastrophic collapse in economic activity beyond what was mandated by shutdowns. Thankfully, this was averted with an unprecedented and decisive fiscal and monetary policy response around the world. In the 2021 BOJ-IMES Conference which was held virtually, we discussed how central banks unleashed the power of their balance sheets to provide critical monetary support that cushioned the economic blow (Orphanides, 2021). Central banks earned praise for this policy success.

A year later, sentiment started to change. In his keynote address at the BOJ-IMES Conference in 2022, Carl Walsh discussed the cost-benefit calculus of a delayed exit from accommodative policy in the context of the inflation surge experienced in most advanced economies (Walsh, 2022). For several central banks, the praise associated with their actions in 2020 was replaced with concern that they had fallen behind the curve by end-2021. The economic recovery from the pandemic was faster than had been anticipated, yet central banks delayed adjusting policy for a time, even after the improvement in the outlook had become evident and inflation had started to rise. Coupled with global supply disruptions, the delay in normalizing policy led to high inflation.

What led to this policy error?

The theme of the 2023 BOJ-IMES Conference is *Old and New Challenges for Monetary Policy*. Some challenges are perennials, both old and recurring. My focus will be on one of these perennial challenges: Preserving price stability. Avoiding pitfalls in monetary policy strategy that risk compromising price stability. This is a challenge all central bankers need to be thinking about all the time. Preserving price stability is the most important task of monetary policy, a prerequisite for supporting economic growth and employment over time.

Communication is an integral part of monetary policy strategy. From theory and practice, we have learned that policy actions are most effective when the public understands their rationale and how the central bank will respond to changes in the economic outlook. In recent   decades,   communication   practices   have   evolved,   espousing   welcome

transparency.[1] Though monetary policy has become considerably more transparent and more systematic than had generally been the case a few decades ago, central banks tend to avoid communicating clearly a reaction function; in this manner they reveal a preference for discretion despite the economic costs associated with it.

When policy rates are constrained, as has been the case during the pandemic, reinforcing expectations that policy will remain accommodative becomes particularly useful.[2] This can be easily achieved with communication of a reaction function that ensures policy is systematic and is appropriately adjusted with economic conditions, but alternatives can be considered that may be appealing to policymakers who prefer to maintain greater policy discretion. One way to shape expectations about policy rates without explicit communication of a reaction function is with forward guidance—the practice of communicating explicit information about the likely path of future policy. Even if not perfectly credible, forward guidance can be effective and, in some circumstances, can have some of the advantages of a well-designed policy rule for helping the formation of expectations by the public and market participants.[3] In recent years, a number of central banks resorted to this practice, and doing so appeared to be helpful while inflation remained low and policy rates constrained. Under these circumstances, forward guidance suggested an implicit commitment to keeping policy rates as low as possible for a long time. But is this practice useful as part of an overall monetary policy strategy aiming to preserve price stability, when surprises to inflation cannot be ruled out?

Recent experience suggests not. The inflation spike associated with the post-pandemic economic recovery illustrated that the strategy of shaping expectations about policy rates through explicit communication of future interest rates instead of a clear, forward-looking reaction function is problematic. Under these circumstances, forward guidance can become a trap. A forward-looking rule that properly adjusts the nominal interest rate with the evolution of the inflation outlook is a superior guide for systematic monetary policy.

This paper compares and contrasts the recent experience of the Federal Reserve (Fed), the European Central Bank (ECB), and the Bank of Japan (BOJ) to draw lessons for

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[1] Yellen (2012) described this change as a "revolution" in central bank communication.

[2] Bernanke (2020) presents a recent review of policy tools when policy rates are constrained. Clouse et al. (2003) summarize the earlier literature and policy experience.

[3] See Woodford (2012), D'Amico and King (2023) and references therein.

monetary policy strategy and its communication. Two of these three central banks, the Fed and the ECB, fell behind the curve in the post pandemic recovery as a result of unwise changes in their policy strategy and communication during the pandemic.[4] Importantly, these changes included the adoption of forward guidance to provide additional policy stimulus, instead of a systematic policy reaction function. The Fed and the ECB fell into the forward guidance trap.

II.   The pandemic and post-pandemic recovery

Figure 1 presents an overview of GDP growth and inflation in G3 economies during the 21st century. The two major economic crises common to the three economies are clearly visible: The Global Financial Crisis (GFC) and the Covid-19 pandemic both caused deep recessions. The behavior of inflation was markedly different in the two episodes. Compared to historical norms, inflation remained relatively stable during and after the GFC. During the pandemic recession, inflation initially fell, as was expected, but subsequently rose to levels not seen in several decades.[5]

Figure 2 focuses on the recent period to trace the evolution of the economy around the pandemic. The evolution of GDP per person was quite similar in the three economies, reflecting the shutdown in the economy in 2020 and subsequent return to more normal economic activity. Unlike the GFC, the recovery from the pandemic was quite rapid, and was more or less completed during 2021 in all three economies. The evolution of inflation reveals greater differences. The three economies experienced disinflation at the onset of the pandemic. This proved short-lived in the United States and the euro area. In the United States, inflation started to rise already in the second half of 2020, exceeded 2% early in 2021 and took off, rising to 7% in June 2022. In the euro area, inflation exceeded 2% somewhat later, in July 2021, but rose sharply to 5% by year-end, and continued to rise during 2022, reaching 10% in the second half of the year. In contrast, the decline in inflation persisted longer in Japan, and the subsequent rise was less pronounced. Inflation in Japan only reached 2% in the first half of 2022 and peaked at 4.4% in early 2023.

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[4] A number of recent studies have examined this policy error, see Bordo et al. (2023) and references therein.

[5] As we discuss later, the stability of inflation after the GFC, and concerns that inflation remained somewhat below 2%, may have been a contributing factor in the complacency about the risks of high inflation that followed.

The rapid recovery can be attributed to the decisive policy response—both fiscal and monetary. The unprecedented monetary policy easing during 2020 can be seen in Figure 3. Policy rates were quickly pushed to zero by the Fed. For the ECB and the BOJ policy rates were already at their effective lower bound—somewhat below zero—and were kept there. Because policy rates were constrained, a critical component of policy accommodation in this episode was the expansion of the balance sheet. In the first three months of the pandemic, all three of these central banks expanded their balance sheets by far more than during any other crisis.

The easing of policy observed during 2020 was the appropriate response, a policy success for which central banks deserve praise. However, this policy response also created a challenge. The unexpectedly strong recovery that followed engendered the risk of high inflation: This should have prompted an adjustment in monetary policy, a decision to stop providing additional accommodation, a plan towards policy normalization. Instead, in the case of the Fed and the ECB, massive accommodation through additional balance sheet expansion continued during 2021 and beyond, well after the economy had recovered. And all three central banks kept policy rates unchanged, while inflation started to rise. Did this reflect appropriate policy?

III.   Falling behind the curve

Evaluating monetary policy in real time requires keeping track of the evolution of the outlook for the economy, particularly the outlook of inflation and associated risks over the near and medium term. The presence of transmission lags in monetary policy implies that, while informative, the recent past of inflation and economic activity are not sufficient for judging the appropriateness of the current stance of monetary policy. Readings of actual inflation also reflect transient noise that would be counterproductive to address by adjusting monetary policy. This is why forward indicators of inflation are critical for monetary policy, why central banks spend considerable resources on forecasting and on analyzing related information from surveys of expectations and financial markets from which inflation expectations can be inferred.[6]

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[6] Indeed, near-term forecasts typically present more useful summary descriptions of the current state of the economy than first releases of actual data describing the recent past: They can incorporate qualitative

Figure 4 summarizes the evolution of inflation expectations in the United States, euro area and Japan, as can be inferred from inflation swap rates. Each panel presents daily readings since 2019, at the one-, two-, and five-year horizons. Inflation swap rates provide comparable information across economies, which facilitates a real-time comparison of the evolution of the outlook for inflation in the three economies.[7]

The evolution of inflation expectations suggests that two of the three central banks—the Fed and the ECB—fell behind the curve long before they started raising their policy rates in 2022. The short- and medium-term outlook for inflation in the United States and the euro area indicated that the ultra-accommodative policy stance adopted in 2020 required adjustment already during 2021. Some policy accommodation should have been removed during 2021 and both the Fed and ECB should have been prepared to adopt a restrictive policy stance if the outlook for inflation continued to deteriorate beyond their common 2% goal.

The evolution of the outlook for inflation also highlights a crucial difference for Japan. Despite the inflation spike in 2022, the Bank of Japan's continued provision of policy accommodation has been appropriate. While one-year-ahead inflation expectations reached 2%, the outlook for inflation over the medium run remained quite benign. Inflation expectations at the two- and five-year horizons persisted well below 2% throughout this period, indicating that BOJ policy needed to remain accommodative.[8]

In light of this evidence, a closer examination of policy decisions and communication is only warranted for the Fed and the ECB. To assess the role of forward guidance in the observed delay in policy normalization by these two central banks, we next study the evolution of policy expectations as reflected in overnight index swap (OIS) rates, the

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information not reflected in hard data and filter noise. See Orphanides (2019) for additional discussion of the use of forecasts vs outcomes for policy design.

[7] Additional information, including survey data on inflation, the projections provided by central banks and other institutions, as well as model-based indicators of inflation expectations would be useful for a deeper dive in real-time policy analysis. For the comparisons made in this study, focusing on inflation swap rates is sufficient and their evolution has been broadly similar to that of survey expectations.

[8] This is consistent with the analysis in Kuroda (2022) who noted differences in the evolution of the inflation between Japan and other G7 economies in this period.

associated implied real interest rates and their relation to the inflation outlook.

Overnight interest rates and OIS rates for the United States and the euro area are presented in Figure 5. The thicker lines show the daily overnight rates for the Fed and the ECB, while the remaining lines show corresponding one-, two-, and five-year OIS rates. The dashed vertical lines mark the dates when the Fed and ECB first raised policy rates after the pandemic. As with the inflation swap rates, OIS rates are comparable across the two economies, facilitating comparisons. OIS rates capture expectations of future policy at the pertinent horizons and allow gauging the role of policy communication and forward guidance in shaping monetary conditions, beyond what is reflected in overnight interest rates. Of course, these are nominal interest rates, and we know that what matters for the economy, and for assessing the appropriateness of the monetary policy stance is the configuration of real interest rates. We can obtain market-based measures of ex ante real interest rates by employing the inflation swap rates and OIS rates shown in Figures 4 and 5.

The implied ex ante real interest rates, shown in Figure 6, provide a first indication of how much behind the curve these two central banks fell after the pandemic. The vertical lines in the charts mark lift-off for the Fed and ECB: March 16, 2022 and July 21, 2022, respectively. As can be seen, for over a year before lift-off, as inflation rose and the outlook for inflation deteriorated, both the Fed and ECB kept guiding real interest rates to lower and more negative levels. The policy adopted during this period was not merely maintaining the degree of policy accommodation that was appropriately put in place during 2020. By continuing to guide real interest rates lower, the Fed and ECB provided additional accommodation, predictably fueling a further deterioration of inflation. Was this compatible with the systematic monetary policy response one would have expected in an environment of rising inflation? Of course not! The delay in adjusting policy suggests a flaw in the monetary policy strategy and communication that had been adopted by these two central banks during the pandemic. The Fed and the ECB had fallen into the forward guidance trap.

IV.   How did the Fed fall into the trap?

To illustrate how the Fed fell behind the curve in the post-pandemic recovery, Figure 7 compares the inflation outlook and ex ante real interest rates, as implied by inflation swap rates, at the two-year horizon.[9] As the inflation outlook deteriorated, the Fed maintained its policy rate unchanged at zero and communicated that it would maintain this policy, thereby guiding real interest rates to more negative levels. How can we explain why the Fed fell into this trap? Two elements in the Fed's implementation of forward guidance induced a significant delay in the policy response to an unexpected increase in inflation: First, a decision to move from *forecast-based* to *outcome-based* forward guidance; And second, an implicit commitment to a gradual reduction of net asset purchases (tapering), and to raising policy rates only after net asset purchases ended.

The introduction of *outcome-based* forward guidance represented a significant and unfortunate shift in the Fed's monetary policy strategy away from what had served policy better earlier in the 21st century. The change can be easily identified by comparing the FOMC statements released on July 29, 2020 and September 16, 2020. In July, the Fed provided forward guidance based on the outlook of the economy:

> "The Committee expects to maintain this target range until it is confident that the economy has weathered recent events and *is on track to achieve* its maximum employment and price stability goals." (Federal Reserve, 2020a, emphasis added.)

By contrast, the statement following the September meeting read as follows:

> "The Committee ... expects it will be appropriate to maintain this target range until *labor market conditions have reached* levels consistent with the Committee's assessments of maximum employment and *inflation has risen* to 2 percent and is on track to moderately exceed 2 percent for some time." (Federal Reserve, 2020b, emphasis added.)

With this change, the Fed communicated a shift towards a myopic approach to policy. This decision alone virtually ensured a policy error in case the inflation outlook deteriorated abruptly.

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[9] The two-year horizon is useful for several reasons. First, it provides an indicator that captures both current policy as well as the role of policy communication, including forward guidance. Second, it provides information about monetary policy that cannot be reflected with overnight rates at the zero lower bound. Third, it helps account for the transmission lag in monetary policy.

The September 2020 FOMC meeting was the first meeting after the Committee's adoption of a revised monetary policy strategy that suggested the Fed was more willing to tolerate temporary episodes of inflation above 2% than in the past. The revision reflected concern that encounters with the zero lower bound might lead to a bias of inflation below 2%, on average, over time.[10] This likely contributed to the unfortunate error reflected in the September statement. That said, the Fed's revised policy framework did not pre-ordain a shift to the myopic approach reflected in the statement.[11] The Minutes of the September 2020 meeting, released three weeks later, suggest that at least some members of the FOMC were uncomfortable with the implicit suggestion that this policy guidance reflected an unconditional commitment, disjointed from the evolution of the outlook:

> "... members generally agreed that the Committee's policy guidance expressed its assessment about the path for the federal funds rate most likely to be consistent with achievement of the Committee's goals, but that *it was not an unconditional commitment*." (Federal Reserve, 2020c, emphasis added.)

However, as a practical matter, the change in communication supported policy myopia that persisted for some time. As late as November 2021, despite the severe deterioration in the inflation outlook that was already evident and that ordinarily would have prompted a policy tightening, Chair Powell communicated that the myopic approach adopted in September 2020 continued to guide policy and argued against lift-off. In response to a question at the post-policy-meeting press conference he explained:

> "We have not focused on whether we meet the liftoff test, because we don't meet the liftoff test now because we're not at maximum employment." (Federal Reserve, 2021a.)

Another complication that contributed to the policy error was the interaction of interest rate policy with balance sheet policy. Implicit in the Fed's policy strategy was that the Fed would only start raising rates after it ended net asset purchases, as it had done following the end of the GFC easing cycle in the previous decade. Furthermore, the Fed had indicated great reluctance to end net asset purchases abruptly. As the inflation outlook

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[10] See Clarida (2021).

[11] This is explained in some detail by Clarida (2023). It is notable that two dissents were registered at the September 2020 meeting, both relating to the communication of forward guidance.

deteriorated during 2021, this presented a challenge which was clearly reflected in the Minutes of the November 2021 FOMC meeting:

> "Various participants noted that the Committee should be prepared to adjust the pace of asset purchases and raise the target range for the federal funds rate sooner than participants currently anticipated if inflation continued to run higher than levels consistent with the Committee's objectives." (Federal Reserve, 2021b.)

By the December 2021 meeting, the Minutes revealed that the need to start tightening policy had become more pressing:

> "… participants judged that the increase in policy accommodation provided by the ongoing pace of net asset purchases was no longer necessary. They remarked that a quicker conclusion of net asset purchases would better position the Committee to set policy to address the full range of plausible economic outcomes." (Federal Reserve, 2021c.)

And yet, the forward guidance provided precluded liftoff. The preference to end net asset purchases gradually, further delayed action.

At the January 2022 meeting, the Fed finally announced that it would end quantitative easing in early March:

> "The Committee decided to continue to reduce the monthly pace of its net asset purchases, bringing them to an end in early March." (Federal Reserve, 2022.)

In so doing, the Fed effectively preannounced liftoff at its next meeting which was scheduled after "early March." Liftoff materialized on March 16, 2022.

V.   How did the ECB fall into the trap?

As the inflation outlook deteriorated during 2021, the ECB maintained the policy rate unchanged at the negative level reflecting its effective lower bound and guided real interest rates to increasingly lower, more negative levels. Figure 8 illustrates the ECB's predicament. While the ECB was behind the curve already by end-2021, the ECB's challenge became even worse during the first half of 2022, as a result of a spike in energy prices in Europe. And yet, the ECB continued to delay liftoff until July 21, 2022, all the while driving real interest rates even lower.

How did forward guidance lead the ECB into this trap? Two elements induced a significant delay in the ECB's policy response to an unexpected increase in inflation: First, a calendar-based implementation of two asset purchase programs, with a pre-announced schedule of net purchases (over a year, on some occasions). Second, a commitment to raising policy rates only after net asset purchases ended—a "sequencing" restriction that was an important component of the ECB's forward guidance. This combination raised the odds of a significant delay in adjusting policy rates if inflation rose faster than the baseline scenario envisioned by the ECB during the pandemic, as indeed happened.

ECB policy rates were already at their effective lower bound when the pandemic shock was recognized in March 2020. Faced with "lowflation," the ECB had already been using various forms of forward guidance and asset purchases to provide additional accommodation. Similar to the Fed, the ECB linked forward guidance on liftoff to the end of its asset purchase programs. This was reiterated at the March 2020 meeting:

> "The Governing Council continues to expect net asset purchases to run for as long as necessary to reinforce the accommodative impact of its policy rates, and to end shortly before it starts raising the key ECB interest rates." (ECB, 2020a.)

Maintaining the policy rate at the effective lower bound did not have to continue regardless of what was happening to inflation, but in practice the forward guidance constrained appropriate action. As late as November 15, 2021, in her testimony to the European Parliament, ECB President Lagarde explained that despite the spike in inflation, these self-imposed conditions argued against changing the policy rate well into 2022:

> "Regarding policy interest rates, in our forward guidance we clearly articulated the three conditions that need to be satisfied before rates will start to rise. Despite the current inflation surge, the outlook for inflation over the medium term remains subdued, and thus these three conditions are very unlikely to be satisfied next year." (ECB, 2021a.)

Another similarity with the Fed, was the communication of greater tolerance for "transitory" periods with inflation exceeding 2%. The communication following the December 2021 meeting explained:

> "In support of its symmetric 2% inflation target and in line with its monetary policy strategy, the Governing Council expects the key ECB interest rates to remain at their present or lower levels until it sees inflation reaching 2% well ahead of the end of its projection horizon and durably for the rest of the projection horizon, and it judges that realised progress in underlying inflation is

sufficiently advanced to be consistent with inflation stabilising at 2% over the medium term. This may also imply a transitory period in which inflation is moderately above target." (ECB, 2021b.)

The commitment to only raise rates after net asset purchases ended proved quite problematic in large part because during the pandemic the ECB decided to adopt an ill-advised calendar-based implementation of quantitative easing, with purchases being pre-announced for long periods.

Before the pandemic, the ECB was expanding its balance sheet through the Asset Purchase Programme (APP) at a monthly pace of €20 billion to help correct its "lowflation" challenge. These asset purchases had provided significant accommodation, compressing term premia on euro area government bonds by over 100 basis points (Lane, 2020). The ECB had decided to restart APP purchases on September 12, 2019, and communicated these would continue "as long as necessary to reinforce the accommodative impact of its policy rates, and to end shortly before it starts raising the key ECB interest rates." (ECB, 2019.) This formulation for asset purchases allowed policy to respond in the event inflation rose but was abandoned during the pandemic in favor of a calendar-based implementation.

The calendar-based implementation was used both for the APP as well as for the Pandemic Emergency Purchase Programme (PEPP) that was introduced during the pandemic. For example, on December 10, 2020, the ECB announced that it would "increase the envelope of the pandemic emergency purchase programme (PEPP)" and extended the horizon of net purchases to "at least the end of March 2022." (ECB, 2020b.) This was a commitment to keep easing policy through this facility for 15 months, regardless of how the economy evolved. And while at the December 16, 2021 meeting the ECB decided to discontinue net asset purchases under the PEPP at the end of March 2022, it also announced APP purchases would continue for much longer. The ECB envisioned that the pace of purchases would gradually decline but likely extend beyond the third quarter of 2022:

> "In line with a step-by-step reduction in asset purchases and to ensure that the monetary policy stance remains consistent with inflation stabilising at its target over the medium term, the Governing Council decided on a monthly net purchase pace of €40 billion in the second quarter and €30 billion in the third quarter under the APP. From October 2022 onwards, the Governing Council will

maintain net asset purchases under the APP at a monthly pace of €20 billion for as long as necessary to reinforce the accommodative impact of its policy rates." (ECB, 2021b.)

By the March 10, 2022 meeting it was evident that inflation and the inflationary outlook were far worse than the ECB had anticipated during 2021. The 2-year inflation swap rate rose further from 2.63% at end-2021 to above 4% in the days before the meeting. The implied 2-year real-interest rate declined to a historic low, around minus 4%.

Yet the ECB was trapped by its forward guidance and continued to ease policy. The ECB decided to keep the policy rate unchanged at its negative level and continue net asset purchases. At the conclusion of the meeting, the ECB confirmed net asset purchases would continue during the first half of the year, as it had communicated in 2021, and only adjusted its guidance regarding purchases during the third quarter:

"Monthly net purchases under the APP will amount to €40 billion in April, €30 billion in May and €20 billion in June. The calibration of net purchases for the third quarter will be data-dependent and reflect its evolving assessment of the outlook." (ECB, 2022a.)

At the following meeting, on April 14, 2022, with inflation galloping to historic highs, the ECB continued to ease policy as it had previously communicated. It confirmed that net asset purchases would continue throughout the second quarter of 2022, but added they would end in the third quarter: "… net asset purchases under the APP should be concluded in the third quarter." (ECB, 2022b.)

On June 9, 2022, the ECB finally announced that it "decided to end net asset purchases under its asset purchase programme (APP) as of 1 July 2022." (ECB, 2022c.) By ending net asset purchases on the first day of the third quarter, the ECB finally cleared its self-imposed constraint on policy rates. Liftoff took place on July 21, 2022. The nominal overnight interest rate was pushed up by 50 basis points to just below zero. But by then, inflation had already exceeded 8%.

VI.   Lessons for policy strategy and communication

A number of questions can be raised and lessons can be drawn from this experience for monetary policy strategy and its communication that can help improve practices and protect against avoidable policy mistakes. The lessons are not necessarily new, but they are worth revisiting nonetheless, given the recent experience.

A first question, revisiting an old debate, is whether pegging the nominal interest rate is the most reliable benchmark for monetary policy. Recall the two limitations on monetary policy that Milton Friedman highlighted in his 1967 AEA Presidential address: Monetary policy "cannot peg interest rates for more than very limited periods;" and it "cannot peg the rate of unemployment for more than very limited periods." (Friedman, 1968). As practiced by the Fed and the ECB, forward guidance suggested that nominal rates would be pegged for far too long, irrespective of inflation developments. With inflation and inflation expectations increasing, real interest rates kept declining, overheating the economy. In effect, the Fed and the ECB fell victims of the first limitation highlighted by Friedman so many decades ago. This fundamental error is the essence of the forward guidance trap.

To be sure, it is feasible to implement reasonable monetary policy with a nominal interest rate instrument, as both the Fed and the ECB had demonstrated earlier in their history.[12] But doing so requires that the interest rate is set in a systematic fashion, responding appropriately to a nominal variable that underpins the nominal anchor provided by the central bank. This is critical for avoiding "nominal indeterminacy" in a monetary economy (McCallum, 1981, 1986). More generally, it is critical for the successful implementation of systematic monetary policy with an interest rate instrument (Taylor, 1993; Taylor and Williams, 2010). Close attention to the outlook for inflation, in particular, is essential for successfully maintaining well-anchored inflation expectations and ensuring monetary policy contributes to overall economic stability (Orphanides and Williams, 2022).

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[12] In earlier periods, both Fed and ECB policy could be well-described with simple forward-looking rules that properly adjusted the policy rate with the inflation outlook and economic activity, see e.g., Hartmann and Smets (2018), Orphanides and Wieland (2013), and Orphanides (2019).

In effect, to avoid falling victim of Friedman's first limitation requires that policy implemented with a nominal interest rate instrument is rule-like, even if it is not strictly based on an explicit policy reaction function. To avoid the forward guidance trap, guidance on future interest rate policy should be contingent to the evolution of the economy, similar to the prescriptions of a policy rule. This is not a new observation. As Plosser (2012) had commented over a decade ago, in the context of the Fed's policy strategy, "articulating rules as guides provides the best kind of forward guidance, which would be helpful in stabilizing the economy and the path of inflation."

The formulation of a benchmark policy rule that could serve as a guide and provide forward guidance need not be a fixed and immutable formula. This could be part of the recurrent evaluation of a central bank's monetary policy strategy and its communication. The central bank's strategy must also foresee periodic review and occasional adaptation of the benchmark rule chosen to communicate policy, reflecting the evolution of our knowledge of the economy.

Another lesson from the recent experience concerns the pitfalls of formulating and communicating policy on the basis of one baseline scenario, without adequate attention to alternatives. The forward guidance on policy rates provided by the Fed and the ECB communicated useful information about the likely path of policy rates as long as the economy evolved in line with the baseline scenario of the recovery from the pandemic. While this was adequate during the pandemic, this approach proved inadequate for coping with an upward surprise in inflation that emerged during the post-pandemic recovery. As a general principle, central banks need to be prepared for contingencies, for unexpected elements. This is an old challenge in central banking that we need to keep coming back to from time to time. As a critical component of policy strategy, forward guidance was problematic. Instead of facilitating a prompt response to the evolving inflation outlook, it constrained the policy response.

Alternative approaches to forward guidance placing less emphasis on the baseline scenario would have been more robust. For example, plausible scenario analysis could have been employed to better explain the contingent nature of policy.[13]

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[13] Bordo, Levin and Levy (2020) provide a pertinent illustration of this approach for the Fed.

The policy mishap observed recently also highlighted the challenges that arise when balance sheet tools need to be activated to provide additional policy accommodation at the effective lower bound. When multiple substitutable instruments are simultaneously employed to adjust policy, as has been observed at the effective lower bound, their combined effect must be properly accounted (Hofmann et al., 2021). The risk of miscalibration and misinterpretation of policy plans rises when balance sheet policy and interest rate policy are not well-coordinated. In the case of the ECB, the multiplicity of programs for bond purchases added yet more complexity. Forward guidance on overnight interest rates as well as balance sheet expansions provide policy accommodation by compressing longer-term yields. The more direct approach of using a yield at a longer-than-overnight maturity as an instrument when the overnight rate is constrained could reduce these risks. Though available experience is limited (e.g., the BOJ's yield curve control), this is a promising alternative to the approach followed by the Fed and the ECB that warrants further study.[14]

VII.   Concluding remarks

Forward guidance may be appealing to policymakers who wish to improve the effectiveness of monetary policy by shaping expectations of future policy rates while maintaining policy discretion. Even if not perfectly credible, the communication of explicit information about the likely path of future policy can be effective and, in some circumstances, can have some of the advantages of a well-designed policy rule. However, forward guidance can become a trap, inviting policy errors that worsen economic performance.

The experience of the Fed and the ECB during the post-pandemic recovery suggests this is not merely a theoretical possibility. Both central banks fell into the forward guidance trap and were unable to fulfil their responsibility of preserving price stability, thereby compromising growth and employment over the long run. The complications associated

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[14] The introduction of a three-year yield target as a policy instrument by the RBA during the pandemic initially appeared to offer a useful case study but in the end it did not. Unfortunately, subsequent to the introduction of the three-year yield target, the RBA also introduced a calendar-based bond purchase program, similar to that of the Fed and the ECB, thereby undermining the three-year yield target (Orphanides, 2023).

with formulating policy at the effective lower bound contributed to this policy error but alternative strategies to forward guidance could have better mitigated these risks. Ultimately, the preference for discretion, over the commitment to a more systematic and less discretionary approach led to the adoption of an approach to forward guidance that trapped the Fed and the ECB to providing excessive accommodation during the post-pandemic recovery, inconsistent with preserving price stability and supporting economic growth and employment over time.

Compared to forward guidance, clearer communication of a central bank's reaction function would protect against the forward guidance trap and improve policy outcomes. A simple forecast-based policy rule could serve as a benchmark for communicating the systematic, contingent nature of monetary policy—the best form of forward guidance.

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Figure 1

Growth and inflation in G3 economies

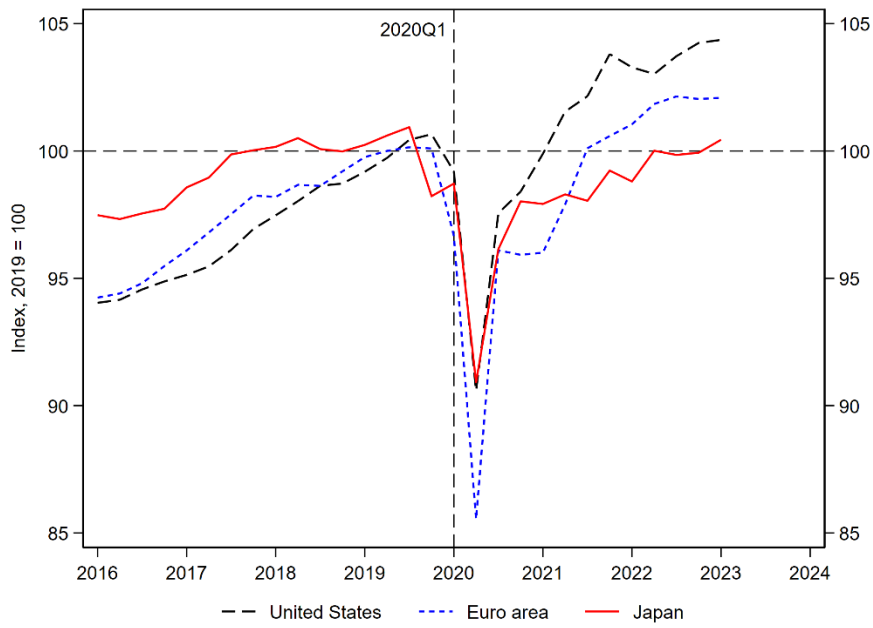(a) GDP growth (over 4 quarters)
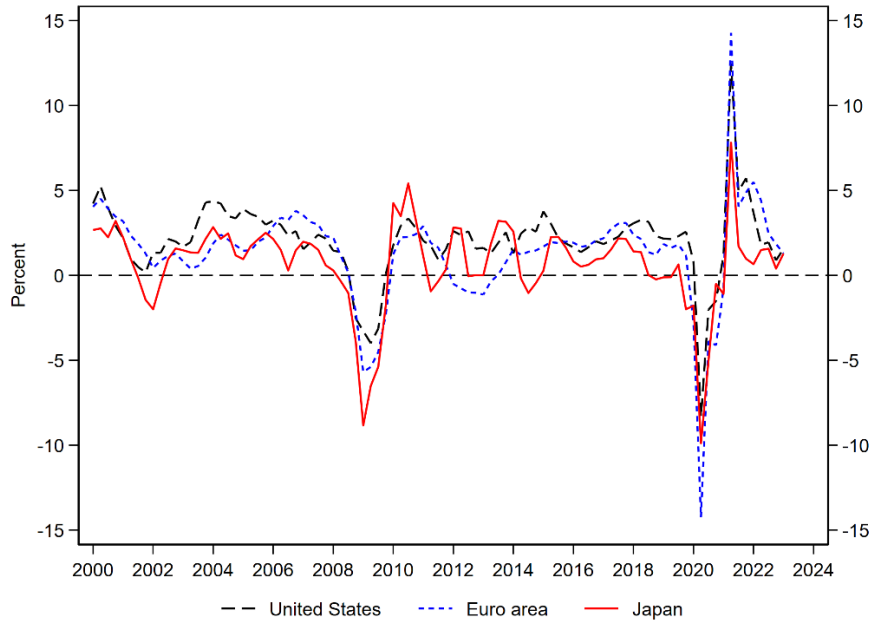
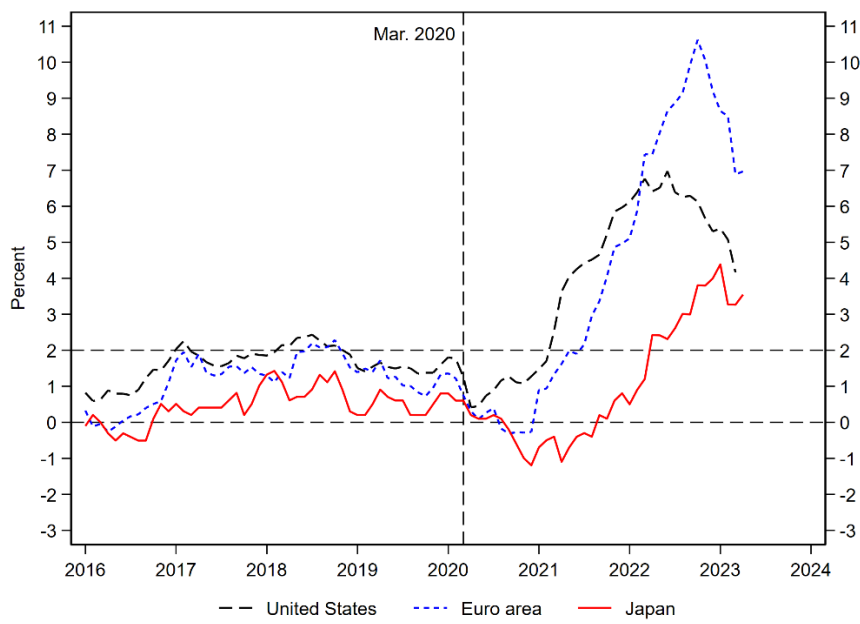(b) Inflation (over 12 months)
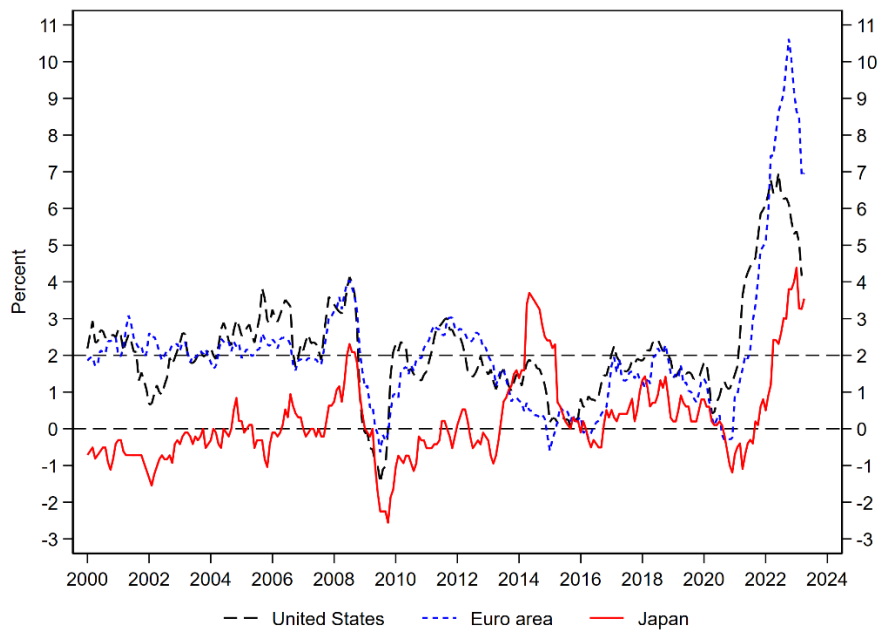
Note: Quarterly data (a); Monthly data (b).

Figure 2

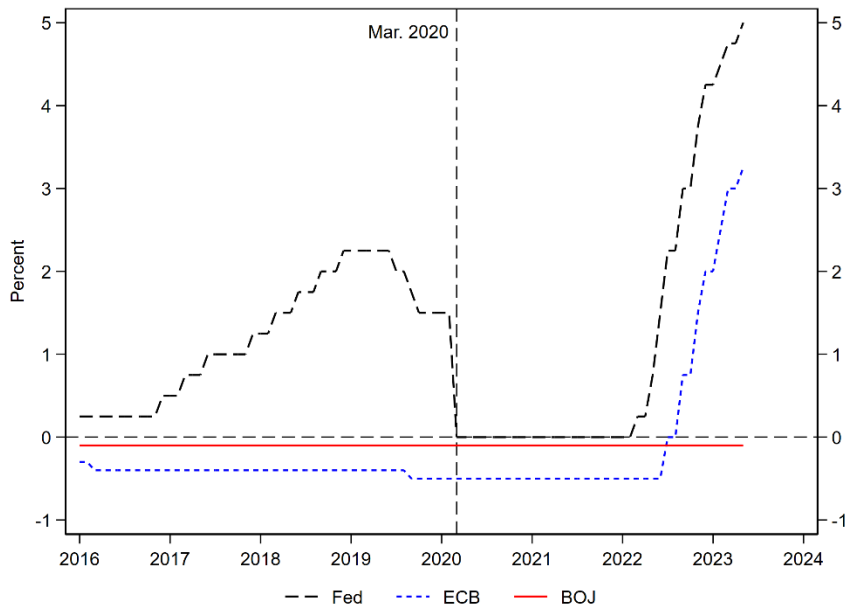GDP per person and inflation

(a) GDP per person

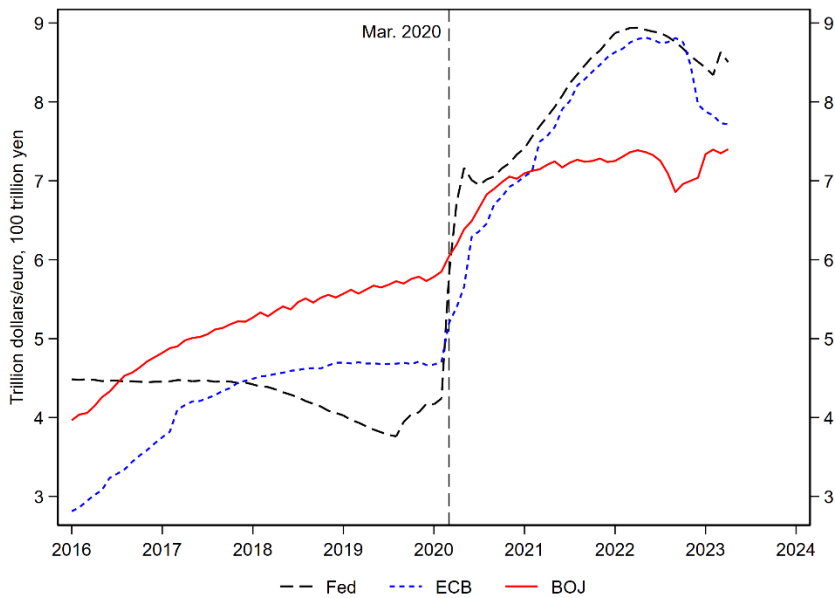(b) Inflation (over 12 months)

Note: Quarterly data (a); Monthly data (b).
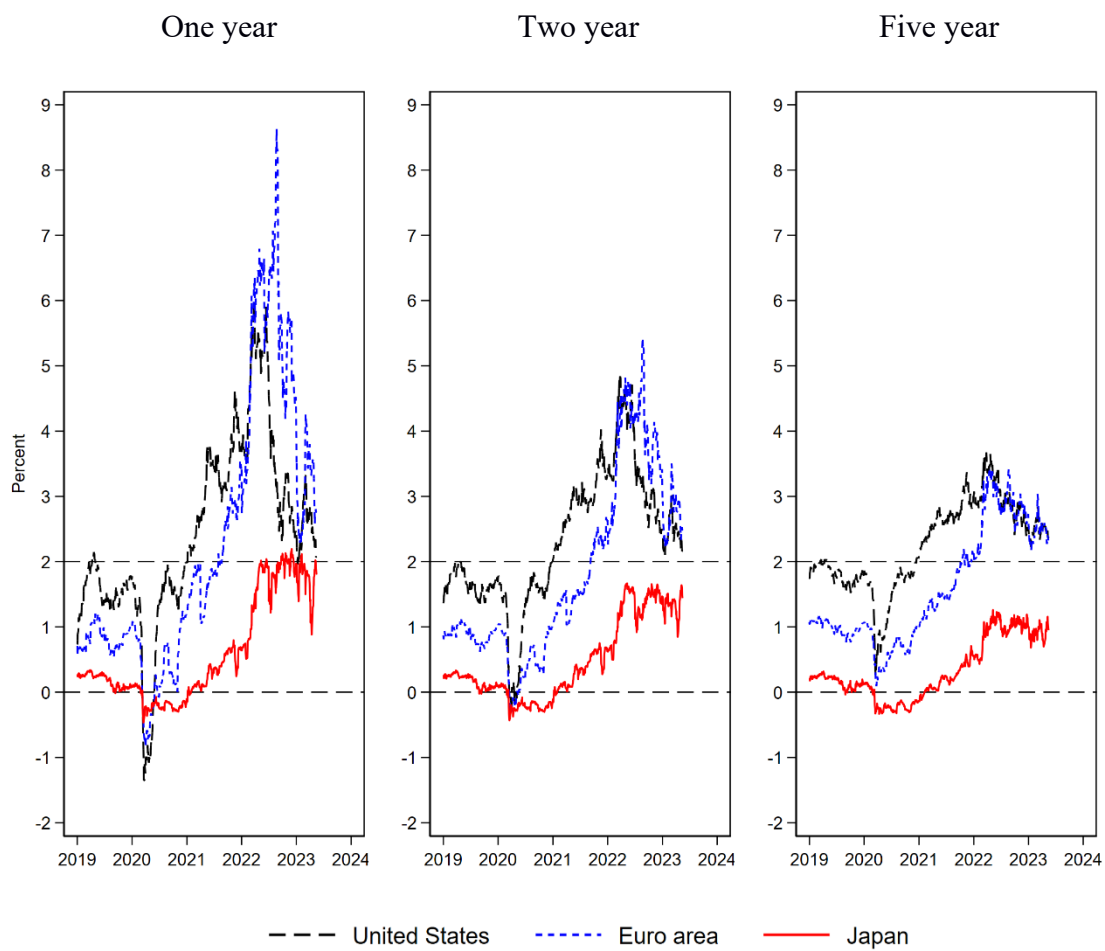
Figure 3
Monetary policy

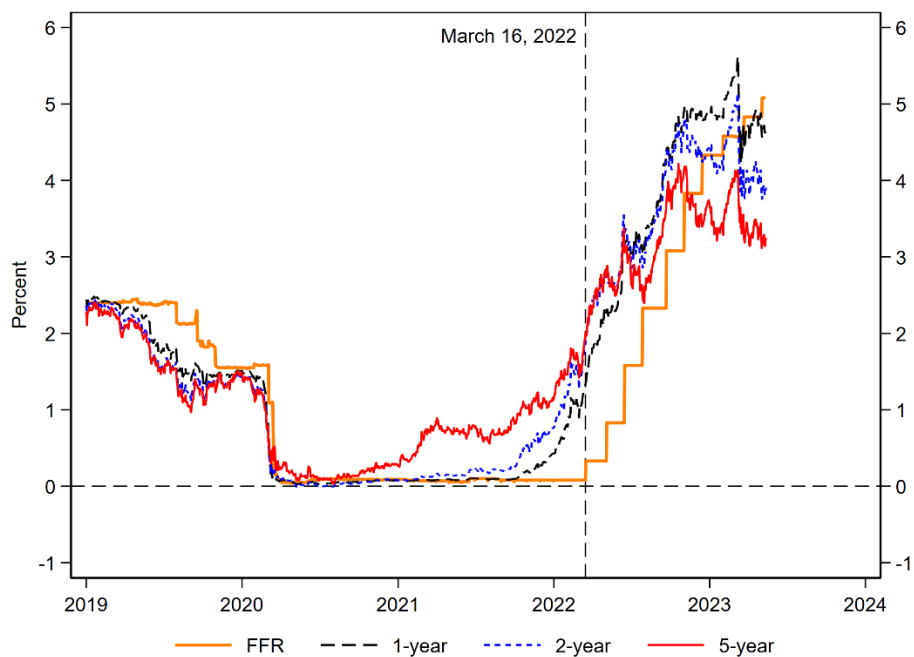(a) Policy rate

(b) Balance sheet

Note: Month-end data.

Figure 4

Inflation swap rates

One year   Two year   Five year

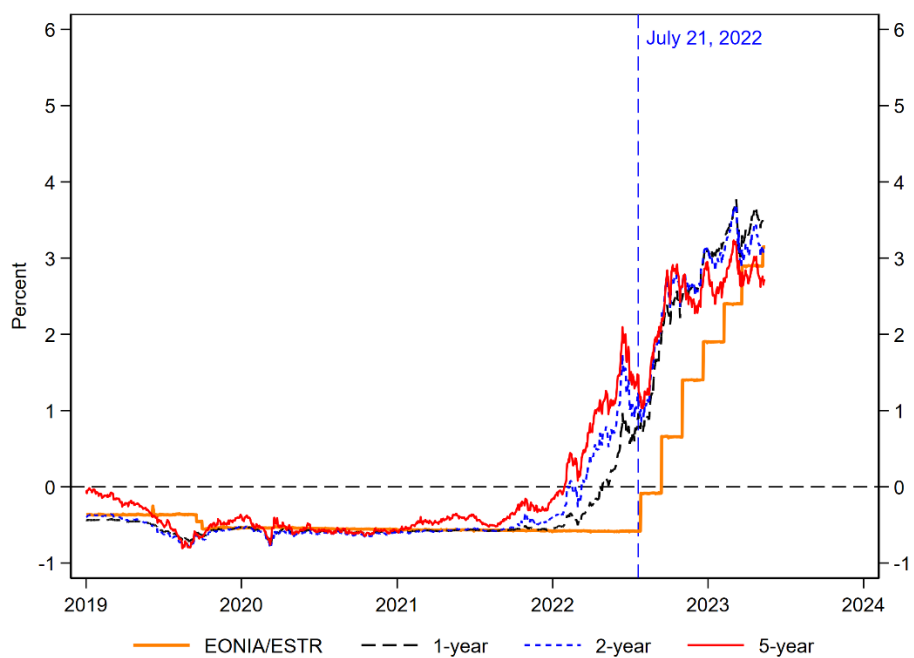- - - United States   ····· Euro area   —— Japan

Note: Daily data.

Figure 5

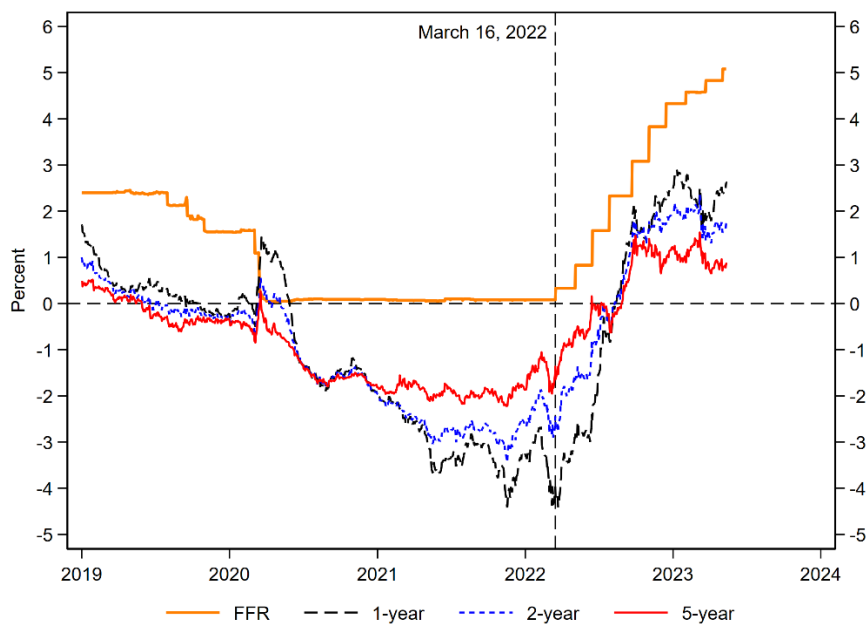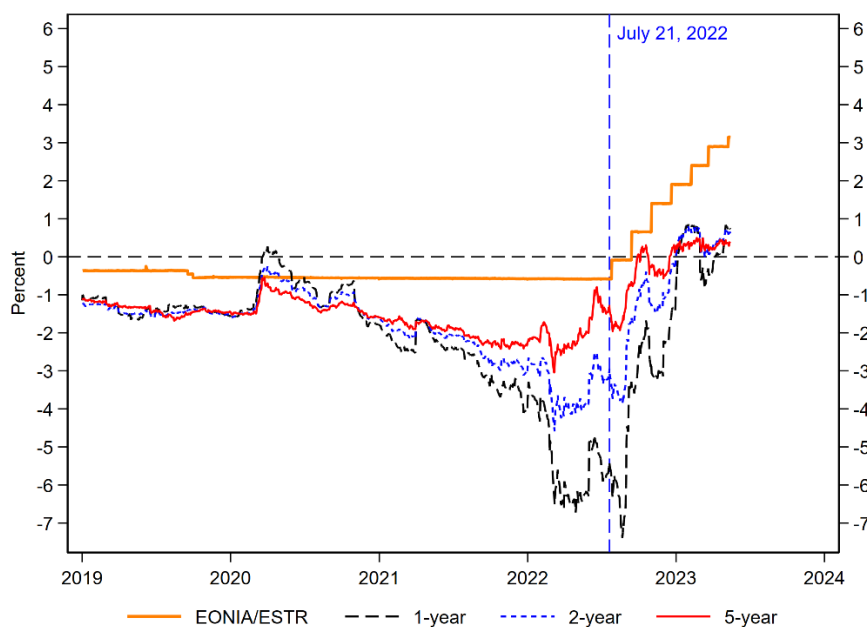Overnight interest rates and OIS rates

(a) Fed

(b) ECB

Note: Daily data.

Figure 6

Nominal overnight rates and implied real interest rates
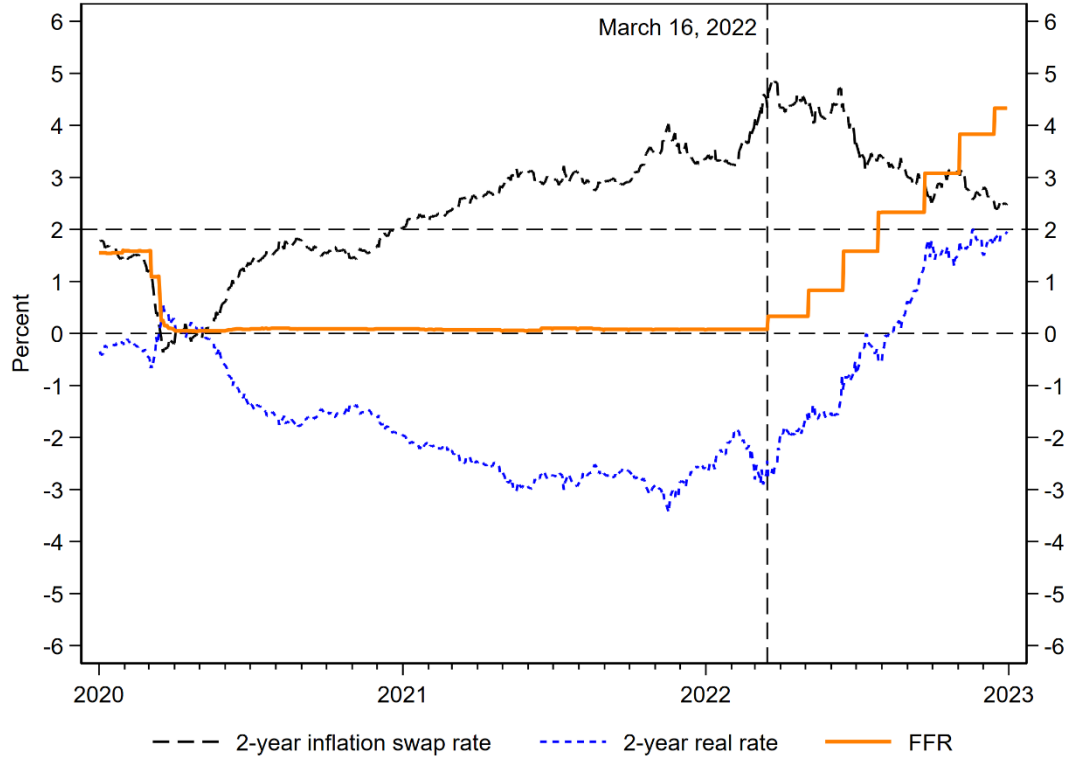
(a) Fed

(b) ECB

Note: Daily data. Implied real interest rates derived from the inflation swap rates and OIS rates shown in figures 4 and 5.
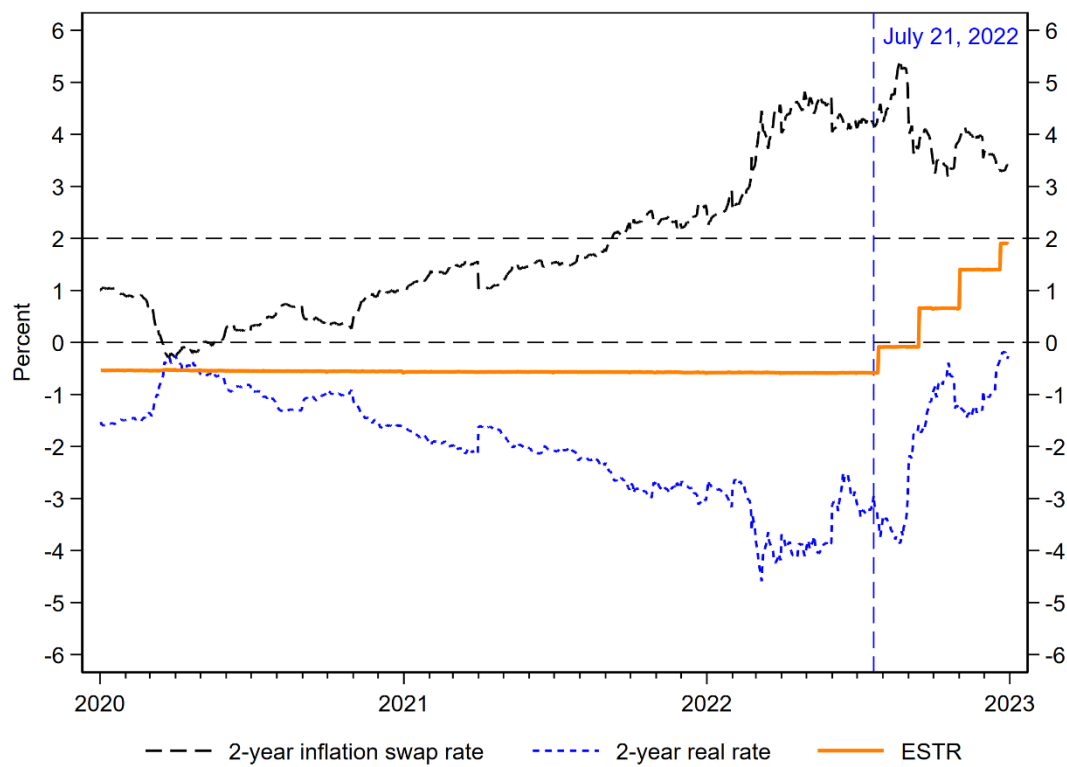
Figure 7

Two-year inflation swap rate and implied real rate: Fed

Note: Daily data

Figure 8

Two-year inflation swap rate and implied real rate: ECB

Note: Daily data.

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