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Athanasios Orphanides

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Challenges for Monetary Policy and Its Communication

Athanasios Orphanides*

Abstract

The post-pandemic inflation surge underscores that monetary policy continues to be hampered by two long-standing challenges: the pretence of knowledge and the proclivity for discretion. Focusing on the Federal Reserve, this paper demonstrates how simple policy rules, designed to be robust under imperfect knowledge, can mitigate these challenges. The Fed's post-pandemic policy error—maintaining excessive accommodation as inflation pressures mounted—could have been avoided with guidance from a simple natural growth targeting rule that had been included in the Fed's Bluebook/Tealbook starting in 2004, but was not disclosed to the public in real time. Formal adoption and disclosure of such a rule can help discipline discretion and improve both the conduct and communication of monetary policy.

Keywords: Policy discretion; Simple rules; Natural growth targeting; Inflation surge
JEL classification: E52, E58, E61

*Professor of the Practice of Global Economics and Management at the MIT Sloan School of Management (E-mail: athanasios.orphanides@mit.edu)

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I. Introduction

The post-pandemic surge in inflation around the world revealed underappreciated challenges with the monetary policy strategy and communication pursued by some central banks in recent years. Episodes of high inflation are always unwelcome; Nonetheless they present opportunities to learn, adapt, study how to make monetary policy strategy more resilient in the future. In the United States, the focus of my discussion today, one has to go back to the 1970s to find a period when the Fed faced a similar difficulty in preserving price stability (Figure 1). My plan is to discuss underlying challenges for monetary policy that contributed to this policy miss and demonstrate how simple policy rules, designed to be robust under imperfect knowledge, can mitigate these challenges.

Briefly, I wish to highlight two interrelated challenges for monetary policy and its communication: the pretence of knowledge, and the proclivity for discretion. Monetary policy today continues to be formulated under the implicit assumption of much more knowledge than we can possibly have about the economy and the underlying data in real time. In addition, despite the recognition that systematic policy delivers superior economic outcomes over time, excessive discretion is observed in practice. Too often policymakers cite a vague need for "flexibility" as a justification for unhelpful discretion.

Using real-time data and forecasts for the United States, I discuss how simple policy rules can address these challenges and help improve policy. Simple rules, selected with an emphasis on robustness, can protect against imperfect knowledge. Simple rules can discipline discretion and promote systematic policy. The selection and disclosure of a benchmark policy rule to the public, and the communication of associated policy prescriptions in real time, can serve as a constraint on unhelpful discretion. Furthermore, simple rules can facilitate coherent policy communication much better than other forms of forward guidance that attempt to provide information about future policy interest rates without explicitly linking the policy rate to the evolution of the outlook. Indeed, the Fed's post-pandemic policy error—maintaining excessive accommodation as inflation pressures mounted—could have been avoided with guidance from a simple natural growth targeting rule that had been included in the Fed's Bluebook/Tealbook, but not disclosed to the public in real time. A lesson for policy strategy is that the conduct and communication of monetary policy can improve with formal adoption and disclosure of a simple benchmark policy rule.

II. The pretence of knowledge and proclivity for discretion

The challenges I focus on are not new, they have been discussed in the past. Drawing on policy research and historical experience, monetary policy frameworks can be adapted to better address imperfect knowledge and limit unhelpful discretion. Some progress has been observed over time in this regard. Yet, the recent inflation surge underscores that additional progress is needed to ensure that monetary policy consistently fosters good economic performance.

The focus on the pretence of knowledge is motivated by the previous episode of high inflation in the United States—during the 1970s. Let me remind you of the intellectual environment and monetary policy practice at the time. In retrospect, policy goals were overambitious. Optimal control methods started showing up in policy research. Fine tuning dominated policy, without accounting for how limited our knowledge of the macroeconomy really is. At the Fed, excessive emphasis was placed on delivering the elusive goal of "maximum employment," without accounting for imperfect knowledge, and largely downplaying the need to defend price stability as a means of fostering good economic performance over time (Orphanides and Williams, 2013.)

Friedrich von Hayek nicely highlighted the problem in his 1974 Nobel address on the pretence of knowledge:

> ``It seems to me that this failure of the economists to guide policy more successfully is closely connected with their propensity to imitate as closely as possible the procedures of the brilliantly successful physical sciences-an attempt which in our field may lead to outright error.'' (Hayek, 1974.)

For a time, the study of economics became almost like the study of mathematics with excessive emphasis on mathematical methods applied with overly simplistic assumptions and insufficient attention to the human factor, the element that makes economics different from the physical sciences. We are still not able to model in any reasonable way how people form expectations, how they respond to events, how they respond to communication. Our ability to build models like in physical sciences remains limited.

Hayek continued by pointing out that economic models based on unrealistic assumptions invited policy errors:

> ``But the effects on policy of the more ambitious constructions have not been very fortunate and I confess that I prefer true but imperfect knowledge, even if it leaves much indetermined and unpredictable, to a pretence of exact knowledge that is likely to be false.'' (Hayek, 1974.)

Yet, even today, the sentiment in some policymaking circles is that open admission of lack of knowledge can be read as a sign of weakness and is to be avoided. The methodological issues that so concerned Hayek continue to be present in modelling monetary policy. Optimal control exercises applied to an estimated model of the economy, under the false assumption of perfect knowledge are not uncommon. Indeed, such optimal control exercises can be found in briefing materials informing policy and influencing discretionary decisions.

To be sure, the risks of formulating policy under the presumption of perfect knowledge are sometimes acknowledged in policy circles, and considerable policy research over the past few decades is available that could improve policy design. Yet, insufficient progress has been made in ensuring that monetary policy is formulated in a systematic manner, emphasizing robustness over discretionary fine tuning.

III. Could simple rules have helped with the pandemic policy challenge?

How did the pretence of knowledge and proclivity for discretion contribute to the post-pandemic inflation surge and how could guidance from simple rules have helped avoid this policy error?

The policy response at the beginning of the pandemic was appropriately forceful, a policy success. The Fed, and other central banks that adopted similar easing policies, helped the economy greatly during 2020, averting worse outcomes that would have likely materialized had the policy response been timid. However, the easing was implemented without sufficient planning for the exit strategy and with the false confidence that this exceptional accommodation was unlikely to trigger notable inflation pressures. To provide additional accommodation at the ZLB, forward guidance was employed, but without proper conditioning on the evolution of the inflation outlook. This proved consequential once the economy started to recover. Stronger than anticipated growth, coupled with supply bottlenecks, exerted greater upward pressure on prices than had been

expected. This should have prompted a policy correction during 2021. Rather than adjust policy to account for rising inflation, as a systematic framework would have suggested, the Fed used its discretion to continue to peg the federal funds rate at zero. Figure 2 provides a visual summary: It compares daily data for the federal funds rate, and the two-year OIS rate with the two-year inflation swap rate. As can be seen, by the time policy liftoff was implemented, on March 16, 2022, the 2-year inflation swap rate had already exceeded 4%. By comparison, the liftoff from the Fed's earlier encounter with the ZLB on December 16, 2015 was implemented before similar inflation pressures materialized.

To see the Fed's policy error more clearly, it is instructive to focus on the two-year *real* interest rate implied by Fed policy. Figure 3 reproduces the overnight rate and two-year inflation swap rate from Figure 2 but replaces the two-year OIS rate with the corresponding ex ante two-year real interest rate. As can be seen, by maintaining the overnight rate at zero while actual and expected inflation kept rising beyond the Fed's inflation goal, the Fed was pushing real interest rates to even lower and excessively negative levels—adding accommodation instead of removing it. During 2021, the Fed fell into the forward guidance trap (Orphanides, 2024).

Figure 4 places the Fed's policy error in this episode in historical perspective. Since comparable swaps data that can be used to construct ex ante real interest rates are not available for the 1970s, we need to resort to proxies. The figure presents a proxy for the real federal funds rate since the late 1960s based on inflation projections from the Survey of Professional Forecasters (SPF). The inflation forecast shown in the figure corresponds to the median year-on-year, 3-quarter ahead forecast of inflation for the GNP/GDP deflator. The real rate proxy reflects the difference between the quarter-average federal funds rate and this real-time inflation forecast. As can be seen, the minimum over the sample since the late 1960s was reached in 2022Q1. Compared to the 1970s, the real interest rate was even more negative in late 2021 and early 2022.

The concerns expressed at the time that the Fed was behind the curve, similar to the experience of the 1970s, were justified. Fortunately, unlike the 1970s, during 2022 the Fed corrected its policy stance more promptly and decisively. Inflation was checked before becoming embedded in longer-term inflation expectations, limiting the cost of the post-pandemic policy error.

A more systematic policy approach would have been better. Guidance from simple and robust policy rules would have helped the Fed avoid this mishap. This is not a new suggestion. Consider the policy advice offered over the years by participants of earlier editions of this conference: Milton Friedman, Allan Meltzer (including his joint influential work with Karl Brunner), Ben McCallum and John Taylor. The recommendation to strive for systematic policy, guided by simple rules, has been a recurrent theme over the years, most recently at the 2024 edition of this conference, the Mayekawa lecture delivered by John Taylor.

In light of the focus on Fed policy, I would note that research staff at the Federal Reserve System has contributed importantly to this research over the years, albeit with insufficient success at convincing policymakers to consistently eschew policy discretion over time.

An early example appeared in 1935, when Carl Snyder, the chief statistician of the Federal Reserve Bank of New York, suggested a version of the simple k-percent rule that was later popularized by Milton Friedman:

> "Specifically, it appears that if the growth of trade in our day is at a rate of about four per cent per annum compounded, then the highest attainable degree of general industrial and economic stability will be gained by an expansion of currency and credit, and especially bank credit, at this rate. No more and, what is equally important, no less." (Snyder, 1935.)

In retrospect, had the Fed followed a monetary rule along these lines, macroeconomic outcomes would have been much better during the 1930s. Unfortunately, the role of monetary policy and significance of money during the Great Depression were not widely understood before Friedman and Schwartz (1963).

In recent decades, with financial innovation making it harder to interpret the relationship between monetary aggregates and nominal income in real time, attention has shifted to simple rules with an interest rate instrument instead of the money supply.[1]

[1] Fischer (1990), and Taylor and Williams (2011) review the pertinent literature, with the latter focusing on simple and robust rules with an interest rate instrument that became popular following the seminal contribution by Taylor (1993).

Policy rules with a nominal interest rate as the policy instrument cannot be as simple as a k% money growth rule. At the very least, policy formulated with an interest rate instrument must adjust in a systematic fashion to the inflation outlook. Nonetheless, policy research over the past several decades suggests that we can formulate simple reactive rules with an interest rate instrument that can deliver better outcomes than policy discretion, can help avoid major policy mistakes, and are superior to policy based on optimal control exercises under the pretence of knowledge.

To be sure, not all simple rules are good rules. The available policy research provides guidance on desirable characteristics of a simple benchmark policy rule that could guide policy in practice. The rule must preserve price stability over time, maintain inflation expectations well-anchrored, in line with the Fed's 2% goal; it can be somewhat forward-looking, embracing informational benefits of current analysis, now-casting, short-term projections; it can be somewhat countercyclical, tempering business cycle booms and busts; and it must be robust to imperfect knowledge, protecting against model misspecification and accounting for the pitfalls of relying on unknowable natural rate concepts. In light of changes in the structure of the economy and state of knowledge, a simple rule must be subject to periodic review and adaptation.

IV. A natural growth targeting rule

Consider a rule that prescribes that the federal funds rate during each quarter be raised (cut) when projected nominal income growth exceeds (falls short) of the economy's natural growth rate.[2] More precisely, the rule compares the three-quarter ahead projection of year-over-year nominal income growth, n, to the current estimate of the natural growth rate, n^*, and prescribes:

$$\Delta i = \theta(n - n^*).$$

Here Δi is the prescription for the quarterly change of the policy rate from its level one quarter earlier, and θ is a response parameter. The natural growth rate may vary over time, $n^* = \pi^* + g^*$, where π^* is the constant inflation target, and g^* reflects the estimate of potential output growth that may vary over time. In the implementations

[2] This follows Orphanides (2025a,b) where additional background information about this rule, its properties, and its implementation is provided.

discussed below, π^* is set to equal the Fed's inflation target, 2%, and the response parameter θ is set to 0.5.

Since 2004, a variant of this simple rule, implemented using Fed staff projections of the economy, has been presented in briefing material prepared by Fed staff for regularly scheduled FOMC meetings. (The rule, referred to as the "First-Difference rule," was shown in the Bluebook until 2010, and in the Tealbook since then.) Instead of projections of nominal income, the Tealbook variant employs Fed staff projections of three-quarter-ahead, year-over-year core PCE inflation, and the difference in the three-quarter-ahead projection of the output gap, y, from its estimated value four quarters earlier:

$$\Delta i = \theta(\pi - \pi^*) + \theta\Delta^4 y$$

This is essentially similar to tracking nominal income growth by using core PCE instead of the GDP price deflator for the measurement of inflation. (The equivalence stems from the accounting identities: $(n - n^*) = (g - g^*) + (\pi - \pi^*)$, and $(g - g^*) = \Delta^4 y$.)

Figure 5 compares the policy rate to the First Difference rule, as presented in the Tealbook. For the policy rate, the end-quarter target federal funds rate (or midpoint of target range) is shown. For the rule, the prescription shown in the figure in each quarter is the one presented in the first Tealbook of that quarter.[3] As can be seen, this rule tracks the contours of actual policy reasonably well from 2004 to 2019. Historical FOMC material is released to the public with a five-year lag so we need to wait until next year in order to examine Fed staff prescriptions for 2020, and until 2027 for 2021.

The natural growth targeting rule can also be implemented using FOMC projections of inflation and real economic activity, as presented in the Summary of Economic Projections (SEP). Two alternatives are presented with bullets and diamonds in Figure 6 starting in 2012, when the FOMC first announced the Fed's 2% inflation goal. Similar to the Tealbook implementation, both alternatives employ the median projections of core PCE inflation, but are based on different measures of economic activity. One alternative, shown in the figure with diamonds, employs projections of real GDP growth:

[3] All prescriptions shown correspond to the Fed's 2% inflation goal. Early in the sample, the Bluebook presented prescriptions with both a 2% inflation goal for PCE inflation, and 1.5% inflation goal, which was more consistent with a 2% inflation goal for CPI inflation at the time.

$$\Delta i = \theta(\pi - \pi^*) + \theta(g - g^*)$$

and is the therefore most comparable to the Tealbook variant.[4] The other alternative, shown in the figure with bullets, employs the difference in three-quarter-ahead projection of the unemployment rate, u, from its estimated value four quarters earlier:

$$\Delta i = \theta(\pi - \pi^*) + \theta\kappa\Delta^4 u$$

This reflects an application of Okun's law, $\Delta^4 y = \kappa\Delta^4 u$, with coefficient $\kappa = -2$. In the figure, prescriptions from the SEP variants are shown only in the first quarter of each year, when the annual projections provided by the FOMC in the SEP correspond to the 3-quarter ahead, year-on-year projection in the rule.[5]

The natural growth targeting rule could also be tracked based on alternative forecasts and survey data. For comparison, Figure 6 includes an implementation using the median survey responses in the Survey of Professional Forecasters (SPF) that is published quarterly by the Federal Reserve Bank of Philadelphia and is available consistently over the whole sample. In each quarter, median survey responses are used to construct, n, the forecast of nominal income growth over four quarters ending three-quarters ahead. The corresponding estimate of the natural growth rate, n^*, is obtained by adding the Fed's 2% inflation goal to the median response regarding the 10-year annual-average real GDP growth—a proxy for potential output growth.

Figure 6 suggests that the alternative variants of the natural growth targeting rule provided broadly similar policy prescriptions over time and, prior to the pandemic, all captured the contours of actual policy reasonably well. The FOMC/SEP and SPF variants show even smaller deviations from actual policy than the Tealbook variant. Fed policy was described reasonably well by this simple, forecast-based policy rule. The figure also highlights one major deviation episode. This coincides with the Fed's post-pandemic policy error. Both

[4] Since the SEP does not explicitly provide FOMC participants' views regarding potential GDP growth, g^*, the median projection of real GDP growth over the "longer run" is employed as a proxy.

[5] No prescriptions are shown for 2020Q1 as the FOMC decided not to publish projections in March 2020. In principle, remaining quarters could be shown using interpolations, but such interpolations can be problematic in periods of high volatility in quarterly projections such as exhibited in 2020/21.

the SPF implementation of the natural growth targeting rule and the two variants based on the FOMC/SEP projections called for an earlier liftoff from the ZLB and suggested a much higher policy rate for 2022Q1, when the Fed started the normalization process. Had the Fed adopted this policy rule as a benchmark, and disclosed prescriptions in real time, the post-pandemic policy error would likely have been avoided. The Fed's use of discretion would have been constrained. Considerably tighter policy would have been implemented already in 2021, consistent with the systematic policy that the Fed appears to have adhered to more closely before the pandemic.

Prescriptions from the SPF implementation of natural growth targeting with the Fed's current 2% inflation goal can be constructed since 1992, when the survey first included the question employed to obtain the natural growth rate. To highlight the simplicity of natural growth targeting, Figure 7 plots the two inputs needed for implementation of the rule: The short-term forecast of nominal GDP growth, and the corresponding estimate of the natural growth rate. The (unconstrained) rule prescription for the quarterly change in the target federal funds rate is simply one half the difference between the two series.

The corresponding (unconstrained) prescriptions for the level of the target federal funds rate from 1992 to the present are presented in Figure 8. The figure confirms that the ZLB severely constrained interest rate policy both at the start of the Global Financial Crisis and the beginning of the pandemic. The prescriptions for negative interest rates support the additional accommodation provided with balance sheet expansion in the two episodes.

Even though the Fed only announced its 2% inflation goal in 2012, the figure suggests that Fed policy was broadly consistent with this rule since the start of the 1994 tightening cycle, with the notable exception associated with the post-pandemic policy error. Prior to 1994, the rule would have called for tighter policy, unless the Fed's implicit target was higher than 2%. Interestingly, this timing is consistent with the narrative associated with the "opportunistic approach" to disinflation: Prior to the 1990 recession, the Fed tolerated inflation as high as 4%, waiting for an unforeseen recession to complete the disinflation. Only once the 1990 recession delivered the desired reduction in inflation, could Fed policy be described as consistent with a 2% inflation goal. And yet, the deviation observed in 1992 and 1993 was considerably smaller than that associated with the Fed's post-pandemic policy error.

V. Conclusion

Central banks can be more successful over time by embracing critical evaluation of their performance, learning from past errors and continually working to strengthen the resilience of their policy framework. The post-pandemic inflation surge highlights two persistent and interconnected challenges in monetary policymaking: the pretence of knowledge and the proclivity for discretion. These challenges can be better managed with guidance from simple policy rules, grounded in policy research and historical experience.

Focusing on the Federal Reserve, the benefits of formulating policy with guidance from a simple rule can be illustrated by examining a rule that has characterized Fed policy reasonably well since the early 1990s, with the notable exception of the period coinciding with the Fed's post-pandemic policy error. The rule recommends adjusting the federal funds rate each quarter based on whether projected nominal income growth exceeds or falls below the economy's natural growth rate. A version of this simple policy rule has been included in the Fed's Bluebook/Tealbook starting in 2004. Variants of the rule based on the FOMC/SEP projections and the survey forecasts in the SPF, yield similar guidance. Notably, this rule called for considerably tighter policy already in 2021, consistent with the more systematic policy approach that described Fed policy before the pandemic.

A benchmark policy rule, designed to be robust to imperfect knowledge, can protect against major policy errors, and promote systematic policy—key to strengthening public trust in the central bank. As Agustin Carstens emphasized in his Mayekawa lecture, trust is essential for fostering long-term macroeconomic stability.

Moreover, a benchmark rule facilitates clear and coherent communication by linking current and future policy decisions explicitly to the evolving economic outlook. This helps avoid pitfalls such as the forward guidance trap that contributed to delay in policy normalization and inflation surge following the pandemic.

Publishing a benchmark policy rule and its real-time prescriptions can constrain unhelpful discretion. No simple rule can address every situation, and adopting a clear benchmark does not preclude occasional discretionary action. Rather, it establishes a standard that requires policymakers to publicly explain any significant deviations, thereby enhancing accountability and ensuring that discretionary choices are well justified.

The implementation and communication of monetary policy can be strengthened through the formal adoption and public disclosure of a simple, robust benchmark rule.

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Figure 1
Inflation in the Unites States

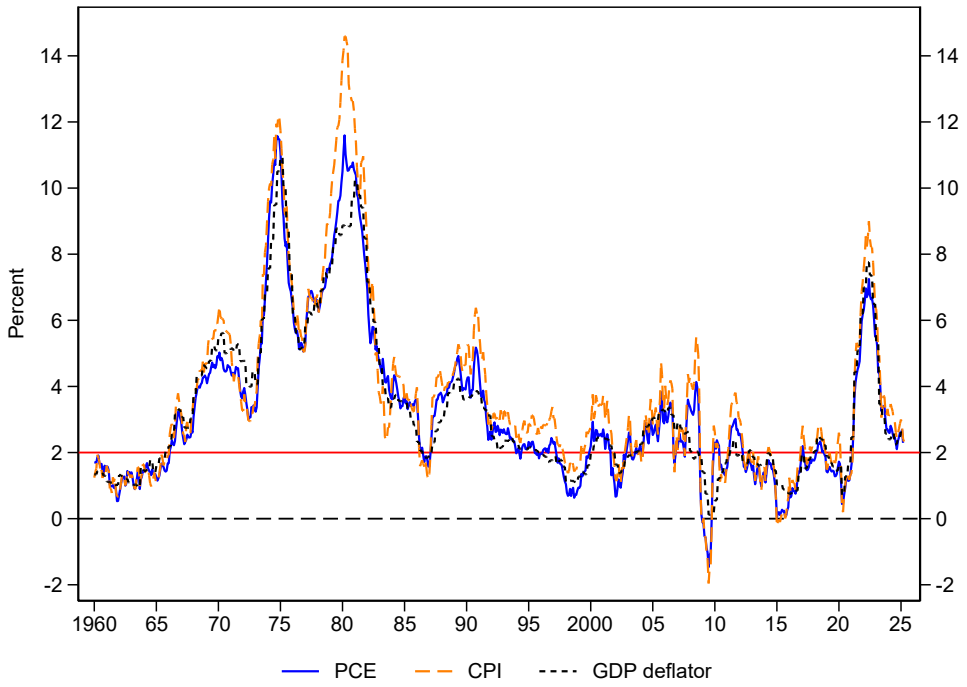
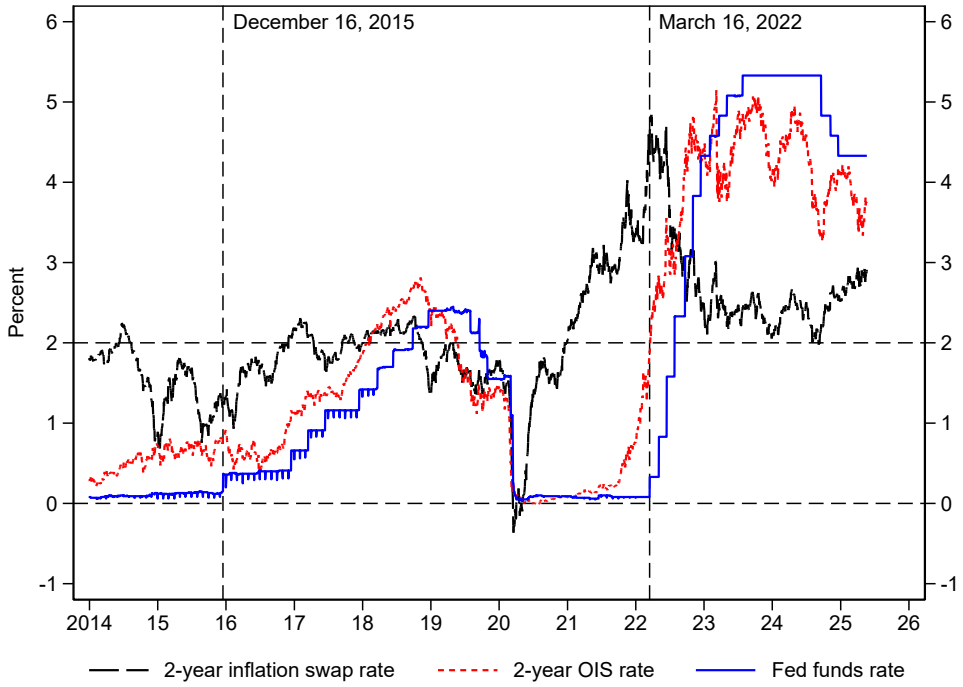
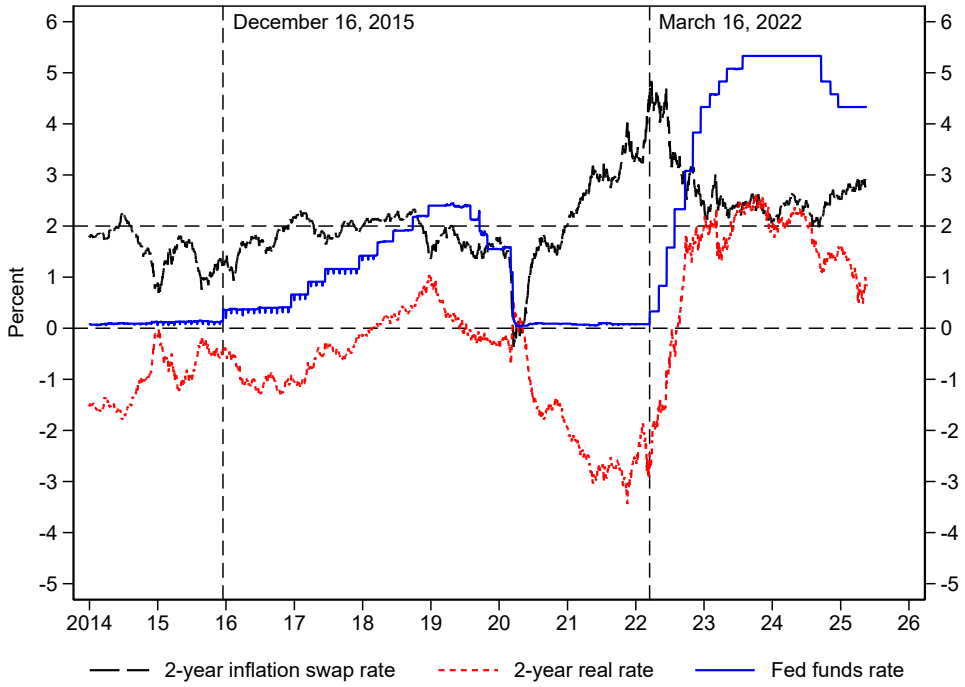


Figure 2
The Pandemic Policy Challenge



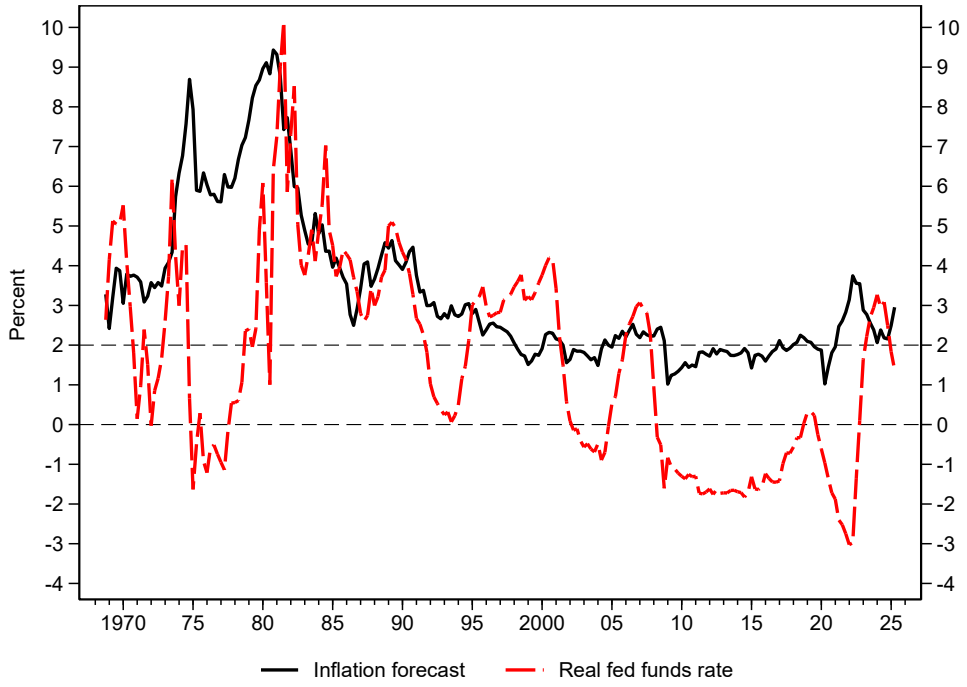
Notes: Vertical lines denote liftoff following ZLB episodes.

Figure 3
The Forward Guidance Trap



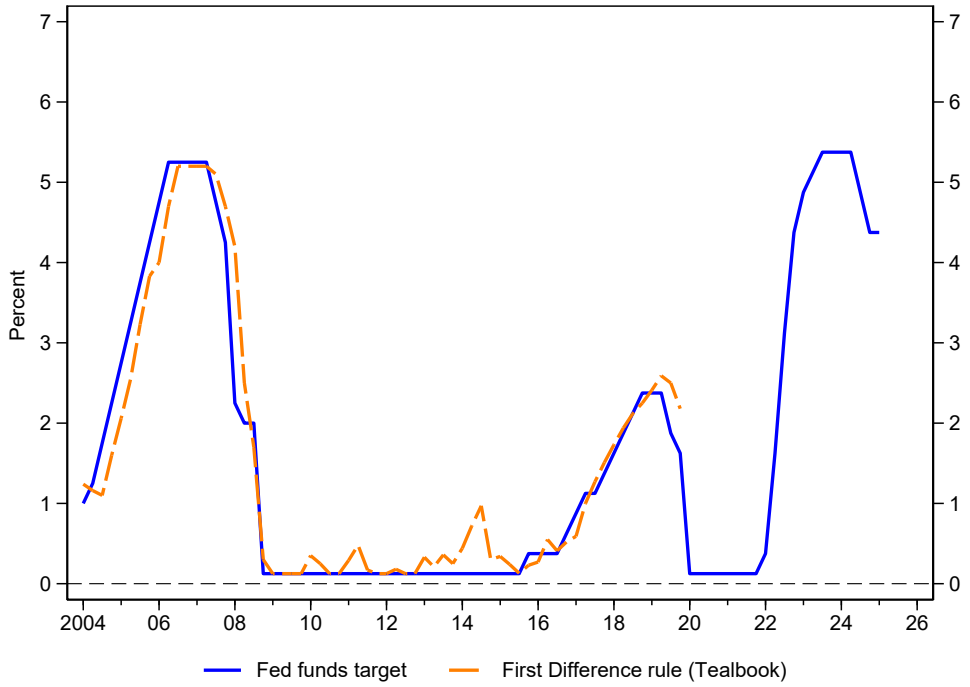
Notes: Vertical lines denote liftoff following ZLB episodes. The real interest rate reflects the OIS rate minus the inflation swap rate.

Figure 4
The Post-Pandemic Error in Historical Perspective



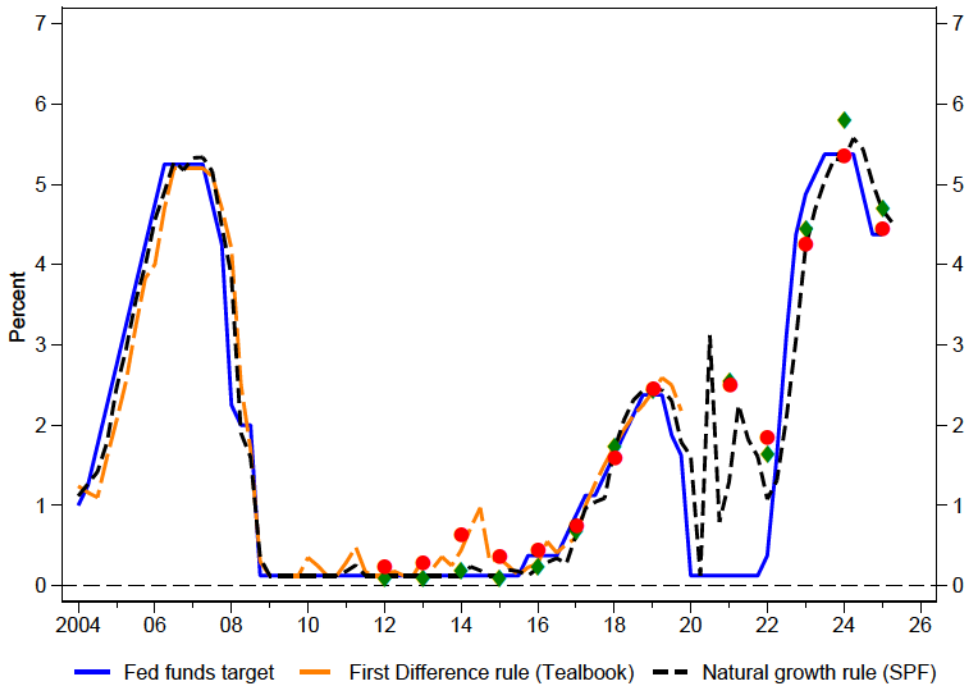
Notes: Real fed funds rate reflects quarter-average rate minus SPF median GNP/GDP deflator inflation forecast, year-on-year, 3-Q ahead.

Figure 5
Bluebook/Tealbook Variant of Natural Growth Rule



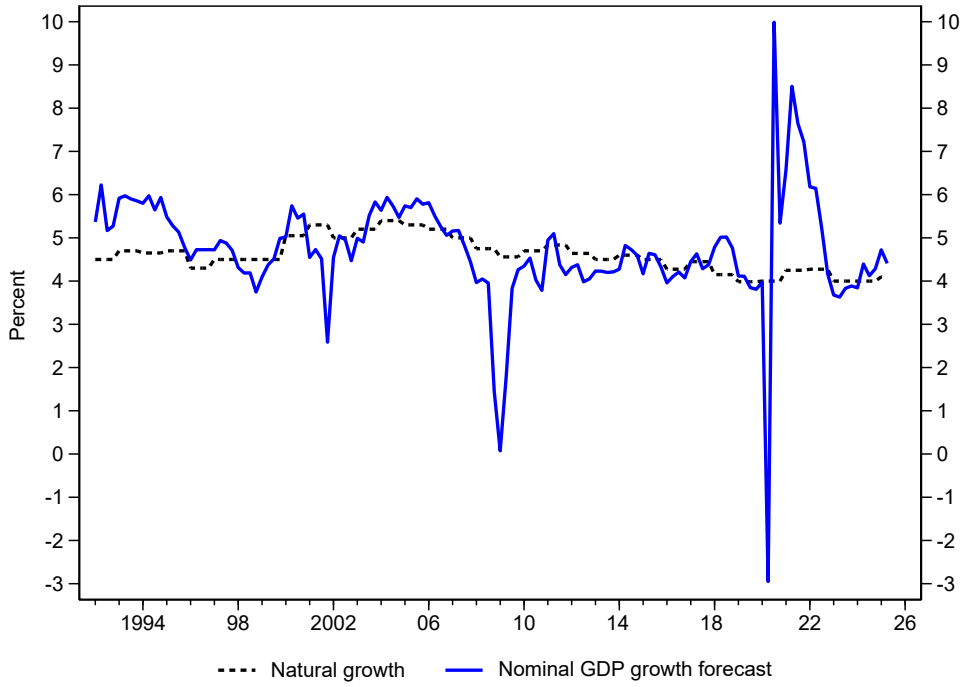
Notes: Fed funds target (or midpoint of target range) and rule prescriptions constrained by ZLB. Post-2019 Tealbooks not yet available to the public.

Figure 6
Alternative Variants of Natural Growth Rule



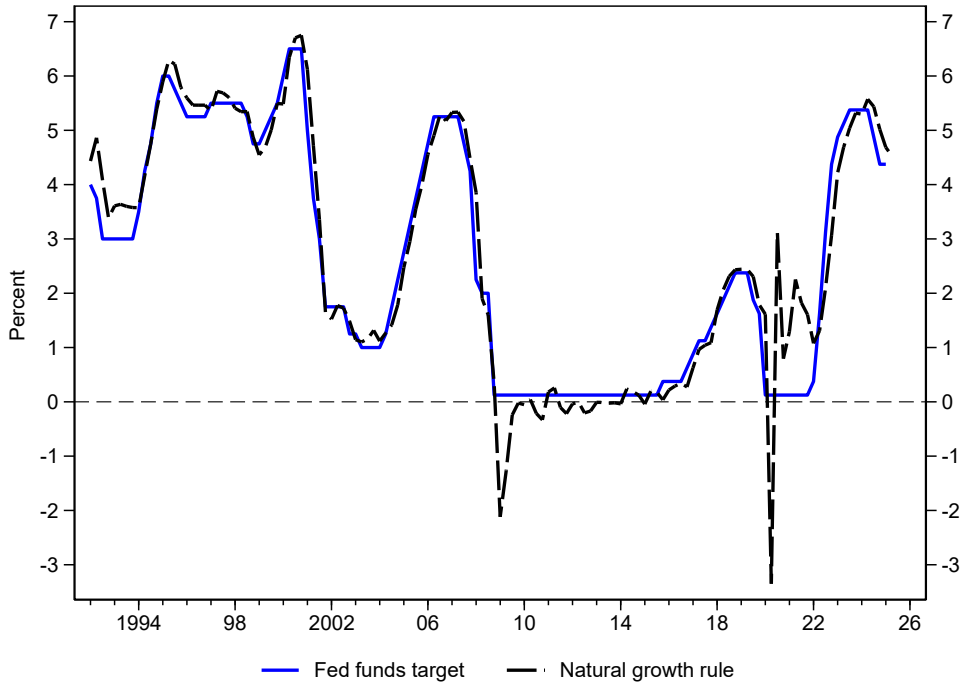
Notes: Fed funds target (or midpoint of target range) and rule prescriptions constrained by ZLB. Bullets [diamonds] show the inflation-unemployment [real GDP] variants of the natural growth targeting rule based on median SEP projections. Prescriptions constrained by ZLB.

Figure 7
The Simplicity of Natural Growth Targeting



Notes: Inputs for SPF-based implementation.

Figure 8
Natural Growth Targeting Rule: 1992–2025



Notes: SPF-based implementation, unconstrained rule prescriptions.