RESEARCH·DEEP DIVE·JUNE 8, 2026·19 MIN READ

Discretion Over Rules: Federal Reserve Policy Departures and the Inflation Surge of 2021–2022

The largest sustained departure from rules-based monetary policy in the post-Volcker era was followed by the highest inflation since 1983. This deep dive measures the distance the Federal Reserve strayed and tests whether that distance predicted what came next.

MONETARY POLICY

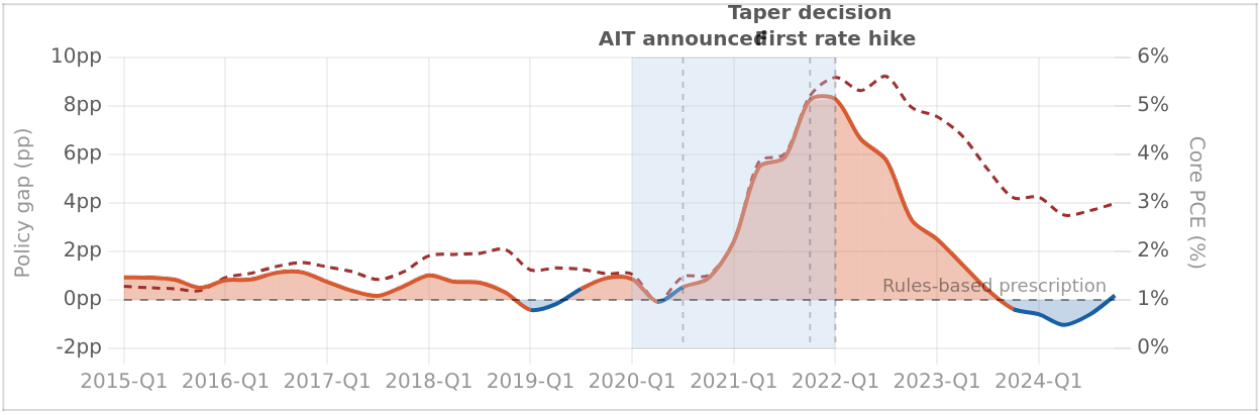

FIG. 1 · DUAL-AXIS: TAYLOR RULE POLICY GAP AND CORE PCE INFLATION, 2015-2024

I. Introduction

On August 27, 2020, the Federal Reserve announced a fundamental revision to its monetary policy framework. Its change reinterpreted the longstanding 2% objective as an average to be achieved over time rather than a ceiling to be defended in each period. Justification was straightforward. Inflation had run below target for most of the preceding decade, and the new framework, Average Inflation Targeting, committed the Fed to tolerating above-target inflation for a period in order to compensate for that prior shortfall.

What this framework abandoned in practice was the discipline of a rules-based benchmark. Under the Taylor rule, the standard formulation of how a central bank ought to set its policy rate, the Fed was prescribed a path it increasingly declined to follow, and the resulting gap was not marginal. Deviation of the effective federal funds rate from its Taylor prescription peaked at 8.3pp in the first quarter of 2022, and for 33 of the 40 quarters between 2015 and 2024 the actual rate sat below the rule. Core

PCE inflation peaked at 5.6% in the third quarter of 2022, the highest reading since 1983.

This analysis tests whether that departure bears a measurable relationship to the inflation that followed. It constructs three Taylor rule variants over the period from 2015 through 2024, examines the predictive relationship between policy deviation and subsequent inflation, and asks whether the European Central Bank's parallel experience corroborates the finding. Its central claim is narrow but consequential: the departure from rules-based benchmarks was not merely coincident with the inflation surge. It carried statistically significant predictive content for it.

II. Rules, Discretion, and the Taylor Principle

A central bank operating under pure discretion faces a constant incentive to run inflation higher than the public anticipates, on the assumption that doing so can lift employment and growth in the short term. Rational agents come to expect this, and once the expectation is built into wages and prices the central bank delivers the inflation without ever buying the growth. Its result is a systematic inflationary bias, present even when no one intends to deceive. Kydland and Prescott formalized this as the time inconsistency problem in 1977.[1] The cure they pointed to was a credible commitment to a rule, which eliminates the bias by removing the discretion the central bank would otherwise be tempted to exploit.

John Taylor gave this insight its practical form in 1993. He did not propose his rule as a binding constraint but as a description of how the Fed had actually behaved during the Volcker-Greenspan disinflation, the period in which it had brought inflation back under control. At its core, the rule is simple: the policy rate responds to the inflation gap and the output gap with fixed weights that anchor expectations without requiring the central bank to forecast unobservable variables in real time. Taylor's observation was that this behavior, made systematic, produced good outcomes, and that the Fed delivered those outcomes precisely when its conduct tracked the rule.

Average Inflation Targeting, adopted in 2020, departed from this logic, though not without merit of its own. Its theoretical basis was sound insofar as the zero lower bound had rendered symmetric inflation targeting asymmetric in practice: the Fed could not cut rates below zero to offset below-target inflation, but it could always raise them to offset an overshoot. Given a decade in which inflation had run persistently low, a makeup strategy that promised to recover the shortfall had genuine theoretical support.[2] AIT did not account for how recently the economy had changed. AIT was designed for a world of deficient demand and applied to a world of supply disruption, and its asymmetric tolerance for above-target inflation provided no mechanism for responding to inflation driven by cost-push rather than demand-pull dynamics.

This 2020-2022 episode was not the first time a departure from rules-based benchmarks preceded trouble. Taylor himself argued in 2007 that the Fed's deviation from its rule between 2003 and 2006 had contributed to the conditions for the housing bubble.[3] That precedent is not tested here, since the sample begins in 2015, but it matters for how the present episode should be read. Inflation in 2021 and 2022 was not an isolated anomaly. It was the most extreme instance of a pattern the rules-versus-discretion literature had already documented once before.

Everything to this point is theory. It says that discretion should produce an inflationary bias and that a

rule should contain it. Whether discretion actually did, and whether the scale of the departure can be read in the inflation that followed, is something only the data can settle. Subsequent sections turn to that record.

III. Data and Methodology

Coverage runs from the first quarter of 2015 through the fourth quarter of 2024. That window was chosen to capture the full arc of the contemporary policy regime. It opens on the post-QE3 normalization, when the Taylor prescription and the actual rate moved roughly together, runs through the zero-bound phase of the COVID period and the inflation surge of 2021 and 2022, and closes on the hiking cycle and the disinflation that followed. Beginning in 2015 keeps the analysis inside this regime and avoids importing the structural breaks left by the financial crisis. All series are drawn from FRED.

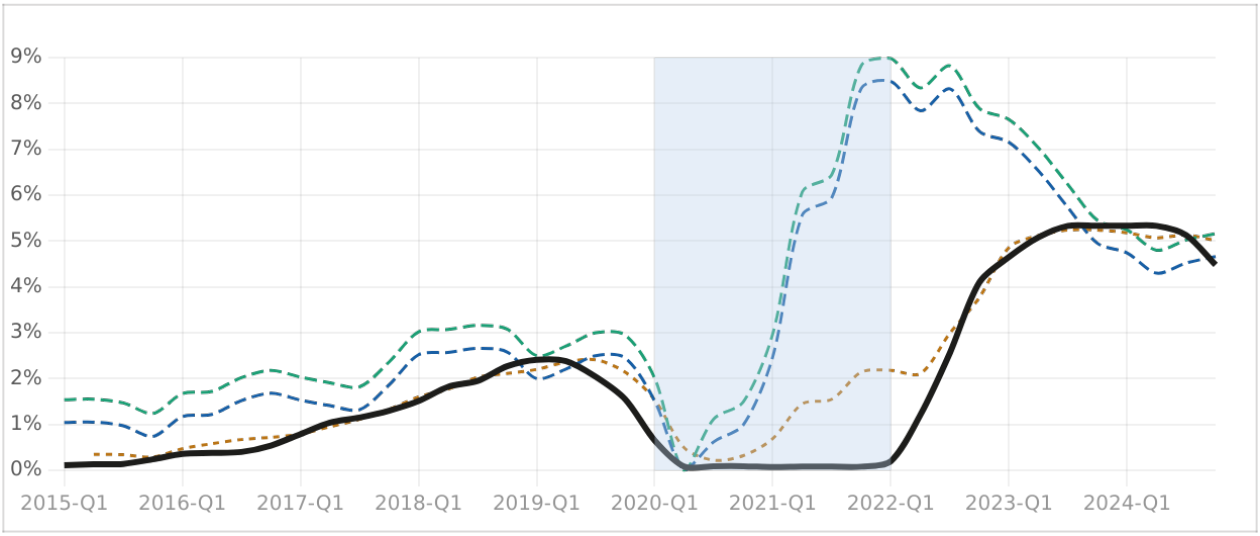

FIG. 2 · LINE CHART: TAYLOR RULE VARIANTS VS ACTUAL FEDERAL FUNDS RATE, 2015-2024

Three specifications of the Taylor rule are constructed. A baseline follows Taylor's original 1993 formulation, with a post-crisis neutral real rate of 0.5% and the output gap measured against the Congressional Budget Office estimate of potential output. A second variant raises the neutral rate to 1.0%, closer to pre-crisis estimates, and tests how sensitive the results are to that single assumption. A third is an inertial specification that weights the lagged policy rate at 75%, approximating the Fed's own stated preference for adjusting rates gradually rather than in sharp steps. All three use core PCE as their inflation measure, consistent with the Fed's stated target. Figure 2 plots the three against the effective federal funds rate, and the pattern that matters is visible immediately. Even the most conservative inertial variant prescribes a rate well above zero through 2021.

Statistical work proceeds in stages. Stationarity is tested first, using the augmented Dickey-Fuller test. Core PCE inflation is stationary at conventional levels ($p < 0.01$). Taylor deviation is borderline in levels, with a p-value of 0.077, though it becomes clearly stationary once differenced. Predictive precedence is then tested through bivariate Granger causality, run in both directions at lag orders one through four. Standard lag-selection criteria all point to five lags, a horizon the 40-quarter sample can barely support, so the reported tests stay at the shorter and more defensible end. An

ordinary least squares scatter that follows uses a two-quarter forward lag on inflation, consistent both with the Granger results and with established estimates of the monetary transmission horizon.[4]

A methodology box below holds the formal equations, FRED identifiers, and full test output for replication.

METHODOLOGY

Taylor rule specifications. Baseline (Taylor 1993):

$$i_t = r^* + \pi_t + 0.5(\pi_t - \pi^*) + 0.5\, y_t$$

with $r^* = 0.5\%$, $\pi^* = 2\%$, and y_t the CBO output gap. The high-neutral-rate variant is identical with $r^* = 1.0\%$. The inertial variant:

$$i_t = \rho\, i_{t-1} + (1 - \rho)[\, r^* + \pi_t + 0.5(\pi_t - \pi^*) + 0.5\, y_t\,], \quad \rho = 0.75$$

Data (FRED). Core PCE price index, PCEPILFE (year-on-year % change); effective federal funds rate, FEDFUNDS; real GDP, GDPC1; CBO potential GDP, GDPPOT. The output gap is computed as $100 \times (GDPC1 - GDPPOT) / GDPPOT$. Euro area: HICP, CP0000EZ19M086NEST (year-on-year % change), and ECB deposit facility rate, ECBDFR. Quarterly figures use the last observation of each quarter.

ADF tests. Core PCE inflation: test statistic −4.68 ($p < 0.01$). Taylor deviation: test statistic −3.36 ($p = 0.077$) in levels, and −3.85 ($p = 0.027$) in first differences, confirming stationarity after differencing.

VAR lag selection. All four criteria (AIC, HQ, SC, FPE) select five lags at a maximum lag of six; at a maximum of eight the Akaike criterion reaches eight while the other three hold at five. Reported Granger tests use lag orders one through four.

Granger causality (bivariate F-statistics, from `grangertest`). Deviation → inflation: lag 1, $F(1,37) = 9.08$ ($p = 0.005$); lag 2, $F(2,35) = 4.86$ ($p = 0.014$); lag 3, $F(3,33) = 1.80$ ($p = 0.169$); lag 4, $F(4,31) = 1.15$ ($p = 0.354$). Inflation → deviation: lag 1, $F(1,37) = 7.65$ ($p = 0.009$); lag 2, $F(2,35) = 3.75$ ($p = 0.034$); lag 3, $F(3,33) = 2.66$ ($p = 0.066$); lag 4, $F(4,31) = 2.55$ ($p = 0.062$).

OLS. Core PCE two quarters forward on the contemporaneous deviation: slope 0.497 (standard error 0.054), intercept 1.79, $R^2 = 0.70$, $N = 38$. Standard errors are not HAC-corrected; the regression is read as descriptive. See Section V.

ECB specification. Simplified rule with $r^* = 1.0\%$ and the inflation gap only, with no output gap term, since euro area potential output is not available on FRED. The prescription is inflated during the energy-driven peak and should be read as an upper bound.

IV. How Far Did the Fed Stray?

For 33 of the 40 quarters between 2015 and 2024, the effective federal funds rate sat below the rate its own baseline Taylor rule prescribed. This pattern is chronic. It ran through the entire contemporary regime, and the crisis years are simply where it grew most extreme. Figure 2 shows all three variants

against the effective rate, and the distance between prescription and practice is visible across the full sample and widens sharply from 2020 onward.

August 2020 provides the first anchor. Average Inflation Targeting formalized what had already become the Fed's de facto practice, and it added something the practice had lacked: institutional permission to keep policy loose even as conditions normalized. Earlier divergence had been mechanical. From March 2020 onward the zero lower bound had bound rate decisions, holding the effective rate near zero while the Taylor prescription began to climb. What the August announcement changed was the willingness to maintain that gap deliberately. By the first quarter of 2021 the baseline rule had climbed back above 2%, while the effective federal funds rate stood at 0.07%.

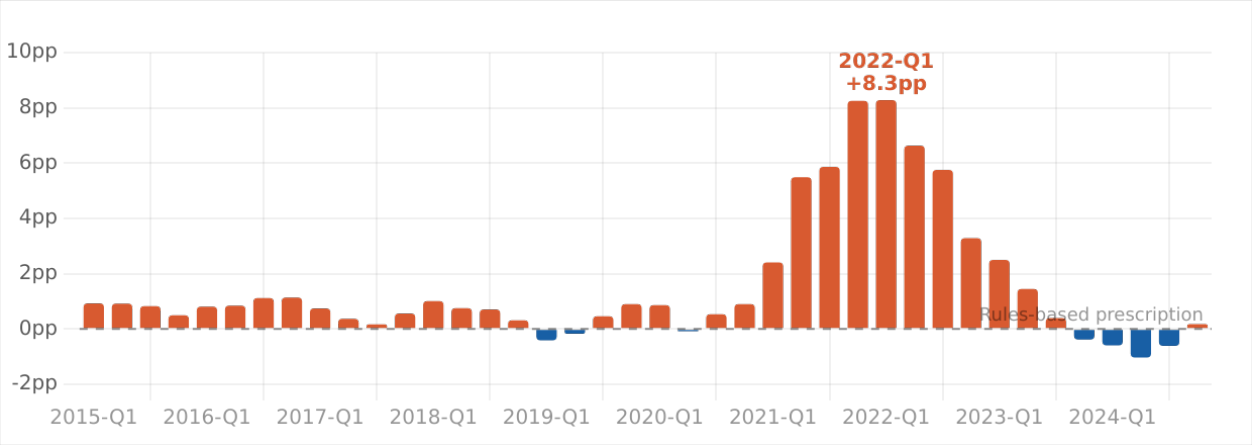

FIG. 3 · BAR CHART OF QUARTERLY TAYLOR RULE DEVIATION, 2015-2024

November 2021 provides the second anchor: the taper decision. By the fourth quarter of that year the baseline prescription had climbed above 8%, while the effective rate still sat near zero, and core PCE inflation had reached 5.2% year on year. Powell's FOMC chose to taper its asset purchases first and continued to describe the inflation as transitory, before raising rates. That decision carried the deviation into its most extreme phase. Figure 3 isolates the deviation series, and the scale becomes plain: the gap first crossed 5pp in the second quarter of 2021 and peaked at 8.3pp in the first quarter of 2022. Nine quarters exceeded 2pp, and six consecutive quarters, running from the second quarter of 2021 through the third quarter of 2022, exceeded 5pp.

In March 2022 the correction began with the first rate increase. That initial 25 basis point step arrived more than a year after the baseline rule had climbed back above 2% in early 2021. Its hiking cycle that followed was the steepest since the early 1980s, compressing into about fourteen months the adjustment a rules-based path would have spread across several years. That compression was itself a product of the delay: the longer the departure ran, the sharper the correction it required. Figure 2 shows the actual rate finally converging toward the Taylor prescriptions by late 2023, by which point the damage to the price level had already been done.

None of this was unprecedented in kind. Taylor's 2007 argument about the 2003-2006 period described the same mechanism: a sustained deviation from the rule feeding conditions the Fed would later have to correct. This later episode differs in magnitude. A peak deviation of 8.3pp runs well beyond the figures Taylor reported for the housing era. Whether the cause is also the same, an institutional preference for short-term growth over price stability, is a question the descriptive record

cannot settle on its own.

Whether the scale of that deviation bears a measurable relationship to the inflation that followed is the question the data can now address.

V. The Deviation-Inflation Relationship

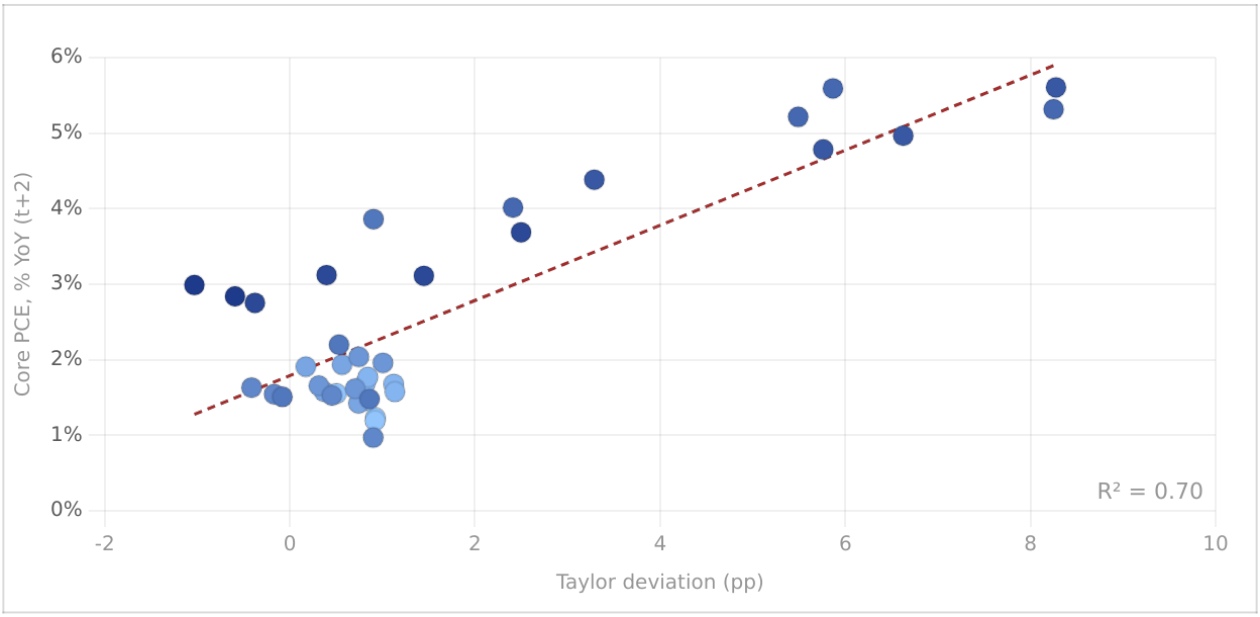

FIG. 4 · SCATTER: TAYLOR DEVIATION VS CORE PCE TWO QUARTERS LATER, 2015-2024

A bivariate regression of core PCE inflation two quarters forward on the Taylor deviation gives a slope of 0.497 ($p < 0.001$) and an R^2 of 0.70. In plain terms, a one percentage point widening of the deviation is associated with roughly half a percentage point of additional core PCE inflation two quarters later. Figure 4 shows the scatter with the fitted line. This relationship is not the work of a few outliers: the high-deviation, high-inflation observations from 2021 and 2022 sit on the regression line rather than dragging it toward them. One caveat belongs here. Ordinary least squares standard errors do not account for the autocorrelation that runs through any quarterly series, so these numbers should be read as descriptive, not inferential. Inferential weight rests on the Granger tests below.

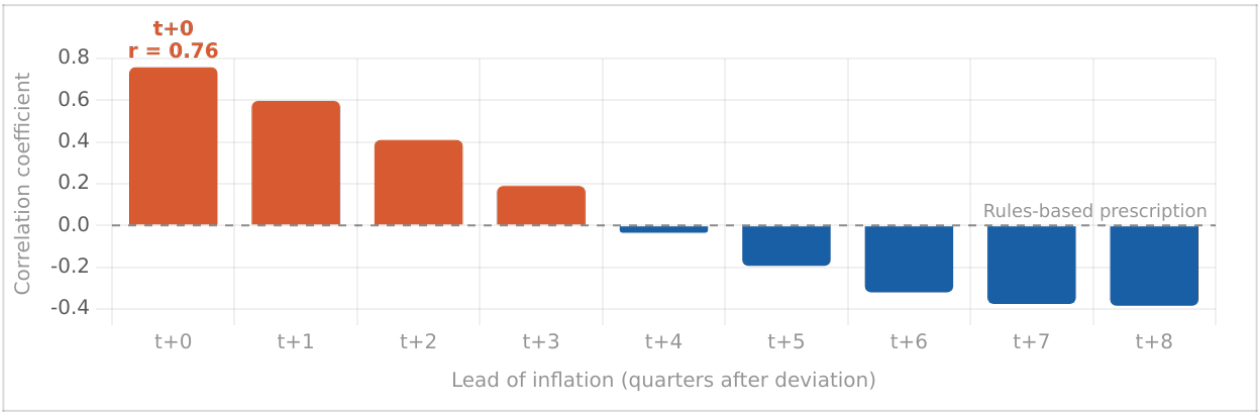

FIG. 5 · BAR CHART: CROSS-CORRELATION BETWEEN TAYLOR DEVIATION AND CORE PCE, LAGS 0-8 QUARTERS

Cross-correlation tells a related though narrower story. It peaks at lag zero, with a correlation of

0.757, as Figure 5 shows. That contemporaneous peak is partly mechanical. Inflation enters the Taylor formula directly, so any period of high inflation generates a large deviation automatically whenever the actual rate is held low. Cross-correlation is therefore best treated as a descriptive diagnostic. Any forward-looking claim has to rest on the conditional tests, which account for precisely this mechanical link.

Those tests are the heart of the section. Deviation Granger-causes inflation at the short horizons that matter most. At one lag the relationship is strong, with F(1,37) = 9.08 and a p-value of 0.005, and at the two-quarter horizon favored by the transmission literature it holds, with F(2,35) = 4.86 and a p-value of 0.014. At three and four lags it falls short of significance, with p-values of 0.169 and 0.354. Given the borderline stationarity of the deviation and a sample of only 40 quarters, that fade at the longer horizons is what a power-starved test would produce. It is reported in full. A reverse channel runs in parallel. Inflation Granger-causes the deviation at one and two lags, with p-values of 0.009 and 0.034, and at three and four lags it weakens to the edge of significance, with p-values of 0.066 and 0.062, without quite crossing it. Both directions are strongest at the short horizons. Its forward channel decays faster, so what persists at the longer lags is the pull from inflation back to the gap.

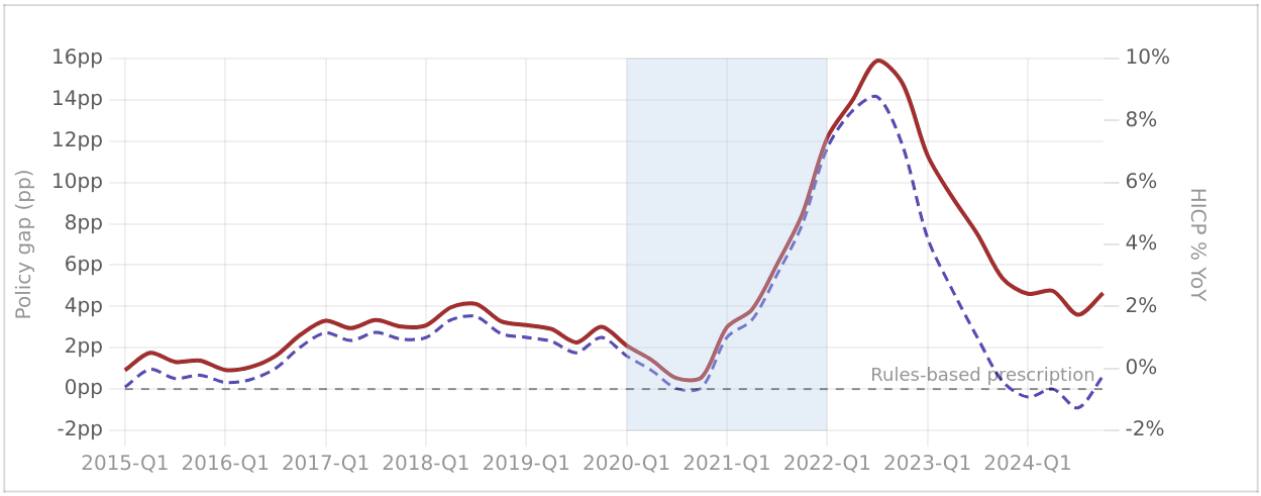

FIG. 6 · DUAL-AXIS: ECB POLICY DEVIATION AND EURO AREA HICP, 2015-2024

The European Central Bank offers an instructive parallel. Applying a simplified Taylor specification to the euro area, using headline HICP in the absence of euro area potential output data on FRED, the implied ECB deviation reached 14.1pp in the third quarter of 2022. That same quarter the ECB raised rates for the first time in eleven years. The HICP choice inflates the prescription during the energy-driven peak, so the figure should be read as an upper bound rather than a precise estimate. Figure 6 plots the euro area deviation against HICP inflation. The euro area is not a clean structural replication, since the institutional setup and the composition of the shocks both differ, but the directional parallel strengthens the case that the deviation-inflation relationship is not an artifact of the American episode alone.

The bidirectional Granger result describes a feedback loop rather than a one-way chain. Loose policy raises inflation at a two-quarter horizon, and the rising inflation in turn widens the measured deviation, because the Taylor prescription climbs while the Fed holds its rate low under AIT. The mechanism is internally coherent, and it matches the sequence of FOMC decisions traced in Section

IV.

Two questions remain: why a discretionary framework produces this pattern in the first place, and whether a rules-based alternative would have interrupted it.

VI. Why Discretion Fails: An Interpretation

The objection that the Fed could not have known in real time does not survive the record. By the fourth quarter of 2021 the Philadelphia Fed's Survey of Professional Forecasters put near-term PCE inflation at 4.0%, twice the target, market-based breakeven rates had climbed for most of the year, and the baseline Taylor prescription, built only on observables, had moved above 2% while the effective rate held near zero. The directional signal was not missing. Discretion did not supply missing knowledge. It supplied permission to set the signal aside, and that permission rested on a claim about the magnitudes the Fed could not observe.

The results above line up with a finding the mainstream monetary literature has documented at length: the real-time estimates a central bank would need to set discretionary policy well are systematically unreliable. Holston, Laubach, and Williams have shown that estimates of the neutral real rate carry confidence intervals wide enough to make precise Taylor rule calibration impossible even with decades of data behind them.[5] The Fed's own real-time reading of the neutral rate diverged substantially from the figure later revisions settled on across the 2020 to 2022 period. A framework that depends on accurate real-time knowledge of the neutral rate, the output gap, and the anchor for inflation expectations, none of which can be observed directly, is structurally exposed to exactly the kind of miscalibration the data above records.

The New Keynesian literature treats this as a problem of measurement. Hayek's account of the knowledge problem reaches deeper.[6] The signals a central bank would need in order to calibrate policy, the forward-looking state of inflation expectations, the natural rate consistent with equilibrium, the true size of the output gap, are not the kind of thing that can be gathered up and aggregated by a single institution. They exist only as they are revealed, dispersed across the decisions of millions of people responding to conditions no central authority can see in full. The Fed's failure in 2021 was not that it could not see prices rising. It was that discretion always furnishes a reason to wait, and the unobservable magnitudes it rests on supply the story that justifies the waiting.

The borderline stationarity of the deviation series, flagged earlier at an ADF p-value of 0.077, is itself worth reading theoretically. Departures from a rules-based benchmark under discretion tend to reinforce themselves; they do not self-correct. Each period of accommodation creates the conditions that make a return to normal progressively more expensive: rising asset prices, and the political cost of surrendering employment gains once they have been won. A rule interrupts that process at the start, before the deviation compounds into the kind of correction the Fed was forced into across 2022 and 2023.

One forward-looking concern follows directly. With federal debt now above 120% of GDP and the Federal Reserve still holding roughly $6.7 trillion in assets, future discretionary rate decisions will run into systemic pressures that a statutory rule would hold at arm's length. That pressure is already legible in the arithmetic Sargent and Wallace set out in 1981, once it is carried over to the present

fiscal path.[7]

The deviation, then, is the visible symptom. The deeper condition is discretion itself, operating in an information environment no central authority can master.

VII. Policy Implications

The 119th Congress has active proposals for reforming the Federal Reserve, and the appointment of Kevin Warsh as chair, with an explicit mandate for institutional change, has brought that debate into sharper focus. The Fed's 2025 framework review formally abandoned Average Inflation Targeting, removing the asymmetric feature that permitted the 2021 accommodation to run as long as it did. A flawed framework has been removed, and nothing binding has replaced it. The most proximate legislative reform remains the most modest: a requirement along the lines of the FORM Act that the Fed publish its quarterly deviation from a specified benchmark rule and formally explain any departure to Congress.

A more substantive reform addresses the source of the problem identified in Section VI. The Taylor rule still asks the central bank for real-time estimates of the neutral rate and the output gap, the very unobservables whose unreliability drives the miscalibration. A nominal income level target removes that demand. The central bank targets the level of nominal spending, which is observable directly, and never has to decompose it into its real and nominal parts. George Selgin has developed the most systematic case for this approach.[8] It also handles supply shocks more gracefully, since it allows the price level to absorb a cost-push shock without forcing a contractionary response in reply.

The fiscal dominance risk raised in Section VI motivates the most structural reform: a hard constraint on the Fed's capacity to expand its balance sheet, returning it toward the pre-2008 footing on which it held mainly short-duration Treasuries, enough to run the payment system and little more. A balance sheet near $6.7 trillion creates both a direct fiscal exposure and an institutional entanglement with Treasury financing that no monetary rule, on its own, can fully insulate against.

Each of these reforms is a way of binding discretion before the next deviation has the chance to compound.

VIII. Conclusion

The findings can be stated plainly. The Federal Reserve departed from its rules-based benchmark by 8.3pp at the peak, across a stretch in which 33 of 40 quarterly observations sat below the Taylor prescription. That deviation carries statistically significant predictive content for the inflation that followed at the one- and two-quarter horizons ($p = 0.005$ and $p = 0.014$), the range the monetary transmission literature identifies, with a bivariate R^2 of 0.70 at the two-quarter lead. The European Central Bank's parallel experience, in a different institutional setting, points the same direction.

One limitation should be stated with equal plainness. This analysis cannot separate the Taylor deviation's own contribution to inflation from the supply-side shocks that struck at the same time. Disentangling the monetary from the real factors calls for a structural approach, a DSGE or an SVAR with the appropriate restrictions, and Kedia's 2023 study is the most rigorous attempt in this setting.[9]

Kedia finds the monetary contribution small and the supply contribution dominant, a result this reduced-form evidence cannot overturn. The predictive relationship documented here establishes precedence, not the size of the monetary channel once supply factors are modeled directly.

The case for rules has never rested on the claim that policymakers lack competence. It rests on the fact that the information required for optimal discretion is not available to any single institution, and the record of 2021 and 2022 makes that case more plainly than any theoretical argument could.

Footnotes

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1. Kydland and Prescott (1977), "Rules Rather Than Discretion: The Inconsistency of Optimal Plans," *Journal of Political Economy* 85(3), 473–491.
2. The most systematic defense is Bernanke (2020), "The New Tools of Monetary Policy," *American Economic Review* 110(4), 943–983.
3. Taylor (2007), "Housing and Monetary Policy," in *Housing, Housing Finance, and Monetary Policy*, Federal Reserve Bank of Kansas City, 463–476.
4. Bernanke and Blinder (1992) and Christiano, Eichenbaum, and Evans (1999) both identify peak inflation effects at four to eight quarters, with initial effects at two to three quarters.
5. Holston, Laubach, and Williams (2017), "Measuring the Natural Rate of Interest: International Trends and Determinants," *Journal of International Economics* 108, S59–S75.
6. Hayek (1945), "The Use of Knowledge in Society," *American Economic Review* 35(4), 519–530.
7. Sargent and Wallace (1981), "Some Unpleasant Monetarist Arithmetic," *Federal Reserve Bank of Minneapolis Quarterly Review* 5(3).
8. Selgin (1997), *Less Than Zero: The Case for a Falling Price Level in a Growing Economy*, Institute of Economic Affairs, Hobart Paper 132.
9. Jai Kedia (2023), "Has Fed Policy Mattered for Inflation? Evidence from a Structural Monetary Model," Cato Institute Working Paper No. 78, October 26, 2023.

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