There's Still Time to Get Back to Rules-Based Monetary Policy

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Thank you Chairwoman McClain, Ranking Member Porter, and other members of the Subcommittee on Health Care and Financial Services of the Committee on Oversight and Accountability at the U.S. House of Representatives for inviting me to testify on the topic "Inflation: A Preventable Crisis".

Brief Historical Review

For several years, starting around 2017, the Federal Reserve began to move to a more rules-based monetary policy that had worked well in the United States in the 1980s, 1990s, and in other years. Many papers written at the Fed and elsewhere reflected this revival and showed the benefits of rules-based policies. In July 2017, when Janet Yellen was Chair of the Federal Reserve Board, the Fed began to include a whole section on rules-based monetary policy in its *Monetary Policy Report.*

Many monetary policy experts made favorable comments about the rules-based policy, and central bankers were supportive. Jerome Powell, who followed Janet Yellen as Chair of the Federal Reserve Board said: "I find these rule prescriptions helpful." Mario Draghi, then President of the ECB said "we would all clearly benefit from…improving communication over our reaction functions…" Raghu Rajan, former Governor of the Reserve Bank of India said "what we need are monetary rules." The evidence was that the move toward rules-based policy was beneficial and economic performance improved.

This move toward monetary policy rules was interrupted, however, when the pandemic hit in 2020. Rules were removed from the Fed's *Monetary Policy Report* in July 2020. But by February 2021, rules were put back in the Fed's *Monetary Policy Report.* However, rules were taken out again in the February 25, 2022 edition of the *Monetary Policy Report.* But Chair Powell said on March 3 that rules would be back in. And in the *Monetary Policy Report*, released on June 17, 2022, policy rules were back in, including the Taylor rule which was back as the first on the list.

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This approach has continued through the last report released last Friday, March 3, 2023. As stated in the Fed's *Monetary Policy Report,* "Throughout 2021 and 2022, the target range for the federal funds rate was below the prescriptions of most of the simple rules, though that gap has narrowed considerably as the FOMC has expeditiously tightened the stance of monetary policy and inflation has begun to moderate." (*Monetary Policy Report*, March 3, 2023).

Table 1 below shows the rules included in the March 3 Report. The notation is standard, but is given in the footnote to the Table 1. The symbol r is the interest rate, π is the inflation rate, u is the unemployment rate, and the superscript LR means the long run. The results are similar to what one finds by looking at the Taylor rule, which is listed first. The results can be compared by looking at the average gap in percentage points between the FOMC interest rate and the settings of the other rules.

A. Monetary policy rules

Taylor (1993) rule	$R_t^{T93} = r_t^{LR} + \pi_t + 0.5(\pi_t - \pi^{LR}) + (u_t^{LR} - u_t)$
Balanced-approach rule	$R_t^{BA} = r_t^{LR} + \pi_t + 0.5(\pi_t - \pi^{LR}) + 2(u_t^{LR} - u_t)$
Balanced-approach (shortfalls) rule	$R_t^{BAS} = r_t^{LR} + \pi_t + 0.5(\pi_t - \pi^{LR}) + 2min\{(u_t^{LR} - u_t), 0\}$
Adjusted Taylor (1993) rule	$R_t^{T93adj} = max\{R_t^{T93} - Z_t, ELB\}$
First-difference rule	$R_t^{FD} = R_{t-1} + 0.5(\pi_t - \pi^{LR}) + (u_t^{LR} - u_t) - (u_{t-4}^{LR} - u_{t-4})$

NOTE: R_t^{T93}, R_t^{BA}, R_t^{BAS}, R_t^{T93adj}, and R_t^{FD} represent the values of the nominal federal funds rate prescribed by the Taylor (1993), balanced-approach, balanced-approach (shortfalls), adjusted Taylor (1993), and first-difference rules, respectively.

R_{t-1} denotes the midpoint of the target range for the federal funds rate for quarter $t-1$, u_t is the unemployment rate in quarter t, and r_t^{LR} is the level of the neutral real federal funds rate in the longer run that is expected to be consistent with sustaining maximum employment and inflation at the FOMC's 2 percent longer-run objective, represented by π^{LR}. π_t denotes the realized four-quarter price inflation for quarter t. In addition, u_t^{LR} is the rate of unemployment expected in the longer run. Z_t is the cumulative sum of past deviations of the federal funds rate from the prescriptions of the Taylor (1993) rule when that rule prescribes setting the federal funds rate below an effective lower bound of 12.5 basis points.

The Taylor (1993) rule and other policy rules generally respond to the deviation of real output from its full capacity level. In these equations, the output gap has been replaced with the gap between the rate of unemployment in the longer run and its actual level (using a relationship known as Okun's law) to represent the rules in terms of the unemployment rate. The rules are implemented as responding to core PCE inflation rather than to headline PCE inflation because current and near-term core inflation rates tend to outperform headline inflation rates as predictors of the medium-term behavior of headline inflation.

Getting Back on Track

It is good that rules were in the Fed's Monetary Policy Report, and it is good that they might continue in future Monetary Policy Reports. It would be more helpful if the Fed incorporated some of these rules or strategy ideas into its actual decisions. Apparently, this has recently begun to happen, as I show below by comparing the interest rate path and policy rules for the interest rate. But at first only small changes were seen in actual monetary policy. So a gap still existed between rule-based policy and policy actions. This was the case at the Fed and at other central banks. Thus, we are still living in a high inflation era unless monetary policy actions are taken. Events in Ukraine recently raised inflation, but not the basic story.

Figure 1 shows the effective federal funds rate from late 2022 through the present. While the gap between the rules and the effective funds rate has narrowed, it still exists
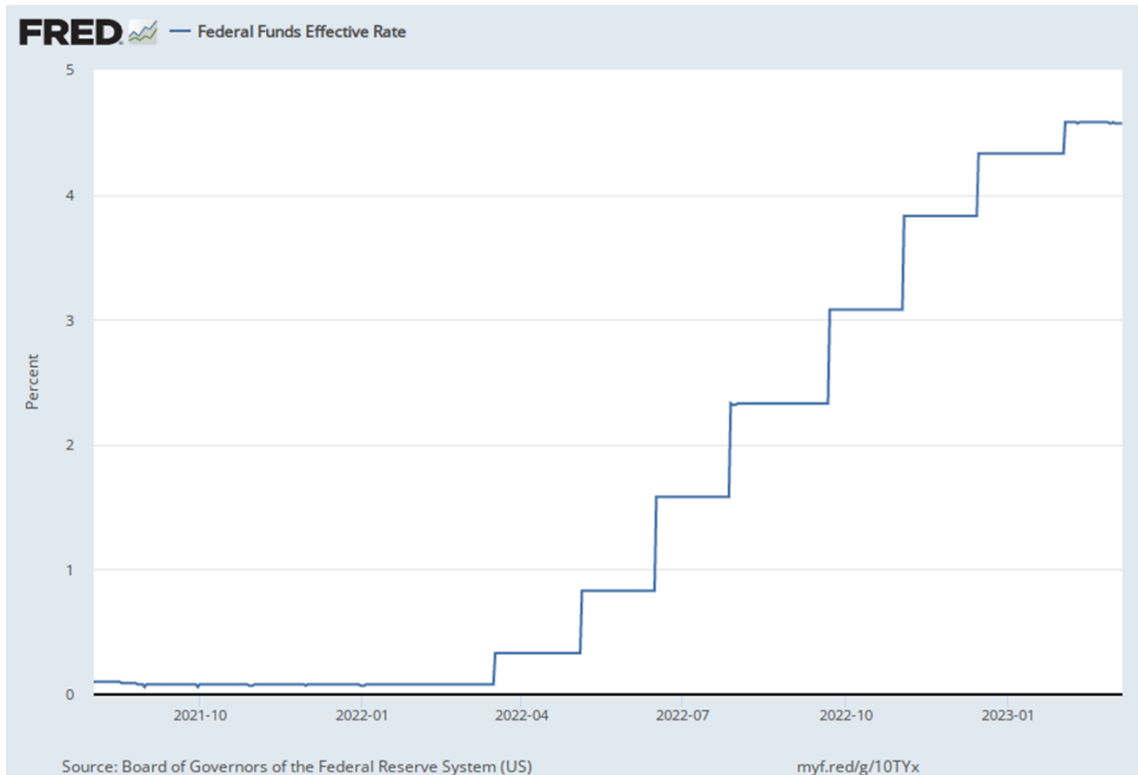

Figure 1. The Effective Federal Fund Rate (Source: Federal Reserve Bank of St. Louis)

To see this I show in equation (1) the Taylor rule as it originally appeared 30 years ago in Taylor (1992). The variables are defined below the equation. Note that y shown in equation 1 is the percentage deviation of real GDP from its potential which is closely related to the deviation of the unemployment rate from the natural rate.

$$r = p + .5y + .5(p - 2) + 2 \qquad (1)$$

where

r	is the federal funds rate,
p	is the rate of inflation over the previous four quarters
y	is the percent deviation of real GDP from a target.

Now let us use equation (1) to see when and by how much the Fed was and is now behind the curve. Using this policy rule we can see that if the inflation rate is 2 percent and the target for the interest rate is 2 percent, then the interest rate should be 4 percent. That is 2+2= 4. If the equilibrium interest rate is 1 percent, then the funds rate should be 3 percent.

During much of 2022 the actual rate shown in Figure 1 was thus well behind the curve. If the inflation rate rises to 3 percent, then the funds rate should be 4.5 percent (1 + 3 + .5(3-2) = 4.5) which is about where it is now. If the inflation rate is 4 percent, then the funds rate should be 6 percent (1 + 4 + .5(4-2)).

Thus, if we use the Taylor rule in the most recent Monetary Policy Report (referred to earlier), and plug in an inflation rate over the past four quarters of 4 percent, a target inflation rate of 2 percent, an equilibrium interest of 1 percent, and the gap between real GDP and its potential level of 0 percent, then you get a federal funds rate of 6 percent. So even with these inflation numbers, the Fed is still behind the curve, though as Chair Powell indicated on Tuesday of this week the Fed is still catching up. Note that these calculations assume that the equilibrium interest rate is 1 percent.

Conclusion

This testimony has shown that Fed got behind the curve on rules-based monetary policy in the United States and has outlined a method to get back. By reviewing the years leading up to the present monetary situation, it provides the background needed for analyzing current and future monetary policy decisions.

The answer to the key question "Are We Entering a New Era of High Inflation?" is clearly "yes," unless monetary policy makers change policy. There are now more reasons than ever for central banks to use a more rules-based policy. Central banks should start now on rules that markets understand. The policy interest rate would increase as inflation rises, as has already happened. It would of course be a contingency plan, as are all rules. This would greatly reduce chances of a large damaging change later.

References

Board of Governors of the Federal Reserve System, *Monetary Policy Report* (2023), March 3, 2023, p. 44.

Taylor. John B. (1992) "Discretion versus Policy Rules in Practice," Prepared for the November 1992 Carnegie-Rochester Conference on Public Policy, Carnegie Mellon University, Pittsburgh, Pennsylvania

Taylor, John B. (2015), "Requirements for the Fed to Describe Its Strategy," Testimony Before The Committee on Banking, Housing, and Urban Affairs, United States Senate, March 3, 2015 https://web.stanford.edu/~johntayl/2015_pdfs/Senate-Banking-Committee-Testimony-20150303.pdf

Taylor, John B. (2015), "Federal Reserve Reform Proposals," Testimony before the Subcommittee on Monetary Policy and Trade, Committee on Financial Services, U.S. House of

Representatives, July 22, 2015 https://web.stanford.edu/~johntayl/2015_pdfs/House-HFSC-MPT-testimony-July-22-2015.pdf

Taylor, John B. (2016), "The Case for a Rules-Based Fed," *Wall Street Journal*, December 20, 2016.

Taylor, John B. (2023), "It's Time To Get Back to Rules Based Monetary Strategy," *How Monetary Policy Got Behind the Curve—And How to Get Back,* edited by Michael D. Bordo, John H. Cochrane, and John B. Taylor