Naming the Taylor Rule!

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May 12. 2023

This work is distributed as a Policy Paper by the

CENTER FOR ECONOMIC POLICY RESEARCH

CEPR Publication No. 327

DISCRETION VERSUS POLICY RULES IN PRACTICE

by

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November 1992

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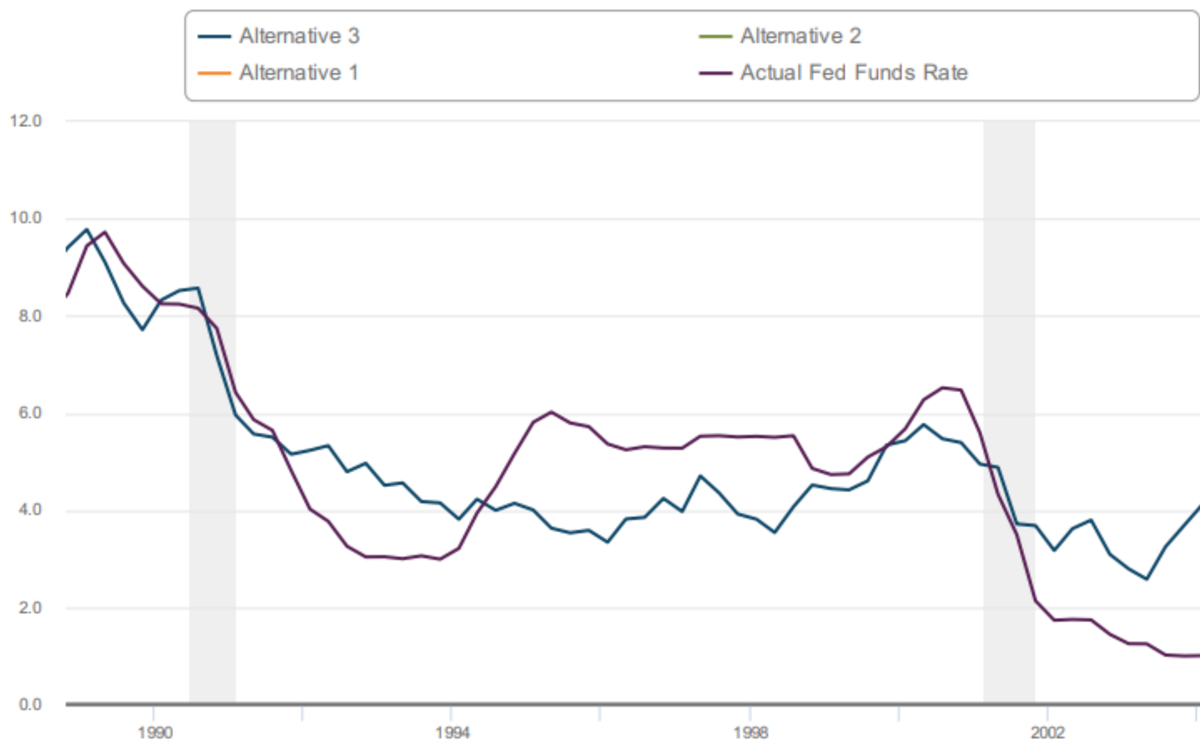
Actual Fed Funds Rate and Taylor Rule Prescriptions



	Alternative 1	Alternative 2	Alternative 3
Inflation Target Measures:	2PercentInflation	2PercentInflation	2PercentInflation
Natural Real Interest Rate Measures:	RstarFOMCMedian	RstarFOMCMedian	LWRstar1side
Resource Gap Measures:	U3gapFOMC	U3gapFOMC	CBOGDPgap
Inflation Measures:	CorePCEInflation	CorePCEInflation	CorePCEInflation
Weight on Gap:	0.5	1	0.5
Interest Rate Smoothing:	0	0	0

Source: Atlanta Fed

Exported on: Wednesday, May 10, 2023

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ANALYSIS

DECEMBER 1993

Prospects for Financial Markets

Salomon Brothers

John Lipsky
Robert V. DiClemente
Susan M. Hering
Robert Alan Feldman
Kermit Schoenholtz

Keeping Inflation Low in the 1990s

[a] 1990s through October 1993.
Sources: U.S. Department of Commerce, U.S. Department of Labor and Salomon Brothers Inc.

Disinflation will always have its skeptics.

At present, however, market participants increasingly are skeptical of the Fed's prospective success. Despite the drop in inflation, the Fed's primary task for more than four years has been accommodation. To many observers, therefore, the recent progress in reducing inflation does not reflect new Fed initiatives as much as other factors, including the Fed's tightening during the late 1980s, unexpectedly slow growth abroad, contractionary U.S. fiscal policy, ongoing corporate restructuring, and the inability — or unwillingness — of U.S. banks to expand their balance sheets. Because these developments made it difficult to gauge the impact of monetary policy, some analysts argue that Fed policy was tighter than indicated using traditional measures and probably was tighter than the Fed had intended. Such skepticism has been encouraged, among other things, by a recent study indicating that until last year, the Fed's policy actions were consistent with an implicit 2% inflation target, but that its failure to hike rates during the past year has called into question the stringency of the Fed's policy goals.[5]

[5] See "Discretion Versus Policy Rules In Practice," John B. Taylor, Stanford University, *Center For Economic Policy Research Publication No. 327*, 1992.

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January 31, 1994

Testimony by

Alan Greenspan

Chairman

Board of Governors of the Federal Reserve System

before the

Joint Economic Committee

United States Congress

January 31, 1994

Fed Rate Hikes 1994-1995: A Soft Landing

FOMC Meeting Date	Rate Change (bps)	Federal Funds Rate
Feb. 1, 1995	+50	6.00%
Nov. 15, 1994	+75	5.50%
Aug. 16, 1994	+50	4.75%
May 17, 1994	+50	4.25%
April 18, 1994	+25	3.75%
March 22, 1994	+25	3.50%
Feb. 4, 1994	+25	3.25%

The monetary policy tightening cycle of 1994-1995 is commonly remembered as a rare instance of the Fed carrying out a so-called "soft landing" for the economy. Between February 1994 and February 1995, Greenspan led the FOMC to almost double the fed funds rate in just seven increases.

After a brief recession earlier in the decade, the U.S. economy was booming—GDP was +3.5% in 1992, +2.8% in 1993 and a whopping +4% in 1993. Back then, baby boomers were at the height of their careers, immigration was strong and new technology was transforming the economy.

With strong productivity rates keeping unemployment low, the Fed hiked into a strong economy. "The decision was taken to move toward a less accommodative stance in monetary policy in order

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March 20, 1995 12:00 AM

1994 A TERRIBLE YEAR FOR LONG-DURATION BONDS

By Paul G. Barr

REPRINTS

JUNE 26, 1995

Monetary Policy Update

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Policy Rules Shed New Light on Fed Stance

- The growing interest in developing formal monetary policy operating rules reflects earlier disenchantment with monetary targeting and a heightened desire to anchor policy decisions systematically to a goal of low inflation.
- Although Federal Reserve officials at present do not adhere to an explicitly rules-based procedure, a rules framework provides a useful context in which to analyze current monetary policy.
- Judged in a rules-based context, Fed policy in recent years has been aimed *de facto* at heading off rising inflation.
- Rules-based analysis bolsters the view that Fed policy moved to a restrictive stance in late 1994 despite the apparently low rates. This latest shift toward restraint was neither more nor less aggressive than previous efforts to curb inflation in the Volcker-Greenspan era.

Figure 1. Diagram of a Generic Monetary Policy Rule

Actual Behavior of Target — Desired Behavior of Target

$$I = \lambda (T - T^*) + O$$

Instrument — Monetary Response Factor — Feedback Element

Figure 2. Key Parameters Governing Selected Policy Rules

Rule	Operating Instrument	Target	Feedback Element
Taylor, 1993	Interest Rate	Output and Prices	Output Level and Inflation
McCallum, 1987	Monetary Base	Nominal Income	Level
Croushore & Stark, 1995	Monetary Base	Nominal Income	Level
Judd & Motley, 1993	Interest Rate	Nominal Income	Growth Rate
Judd & Motley, 1992			
Rule #1	Interest Rate	Nominal Income	Tested Various
Rule #2	Interest Rate	M2	Level and Growth
Rule #3	Monetary Base	Nominal Income	Rate Combinations
Judd & Motley, 1991			
Rule #1	Monetary Base	Nominal Income	Level
Rule #2	Monetary Base	Prices	Level
Rule #3	Monetary Base	Output and Prices	Growth Rate
Feldstein & Stock, 1993	M2	Nominal Income	Growth Rate

Although arguments can be made against their use — for example, that monetary base velocity is unstable and that interest rates are ambiguous — both monetary base growth and short-term interest rates can be manipulated by the Fed and therefore are acceptable instruments. Currently, M2 is not fully under the Fed's control; thus its inclusion as a potential instrument is theoretical.[2]

Researchers have proposed a variety of targets, including money, inflation, real economic growth, and nominal income; however, a general consensus is emerging in favor of nominal income targeting.[3] The recent breakdown in the money/output relationship has dampened interest in the money aggregates as targets.[4] Although price targeting may seem appropriate to the long-term policy goal of lower inflation, critics contend that it could lead to unstable output. Hybrid rules, which target both inflation and real economic growth, attempt to stabilize both prices and output. Other rules target nominal income under the assumption that if nominal income growth is held steady and, on average, output growth remains stable, inflation also will be stabilized.

There are drawbacks to using either real or nominal output as targets. Primarily, income and output react with great lags to changes in policy instruments. Also, these statistics are released only quarterly and often are revised significantly. However, these drawbacks apply not just to the use of economic growth statistics in policymaking rules, but to their use in policymaking in general.

[2] M2 nontransaction accounts are not subject to reserve requirements; therefore, the link from policy to the aggregate is indirect. Feldstein and Stock (1993) propose imposing reserve requirements on all M2 assets to bring them under closer Fed control.

[3] Hall and Mankiw (1993).

[4] M2 velocity (GDP/M2) grew by roughly 14% from 1991 to 1994, a period of falling interest rates.

Researchers also debate the appropriate form of the feedback element — whether to target growth or levels. Level targeting may be too strict, while a growth rate target may allow for too much drift from the desired growth path. For example, a sharp, temporary run-up in oil prices, like the one experienced at the onset of the Gulf War, would shift the level of prices higher, away from its target. The feedback element would suggest tighter policy to eliminate the gap between the actual and desired price level. However, if inflation, rather than the price level, were targeted, the rule would show a one-time blip.

Much empirical testing has been performed in an attempt to determine the most appropriate policy rule. These efforts simulate what economic history would have been like if a proposed rule had been followed. However, the results of these simulations are inconclusive. The debate has raised as many questions about the difficulties of economic modeling as it has about the potential usefulness of policy rules.

POLICY RULES SHED LIGHT ON CURRENT POLICY

Nonetheless, the literature provides a very useful perspective for policy watchers and market participants on the course of recent — as well as past — policy and its impact. Most notably, analyzing current policy from a rules perspective corroborates the following views: (1) that policy moved to a restrictive stance in the latter half of 1994 despite the appearance that interest rates were low; (2) that the forces motivating policymakers were quite transparent during the recent shift toward restraint, despite often-heard criticism that the Fed has been "flying by the seat of its pants;" and (3) that the recent tightening pace was neither more nor less aggressive than prior anti-inflationary efforts in the Volcker-Greenspan era. Our research has focused on three rules defined by their authors' names: the Taylor rule, which ties the Fed funds rate to a hybrid inflation and output level target; the McCallum rule, which uses monetary base growth as the instrument and targets the nominal income level; and the Judd & Motley rule, which calculates the change in short-term interest rates as a function of the difference between actual and targeted nominal income growth. We outline the specifics of these rules in the Appendix.

The forces driving recent Fed decisions are readily transparent when policy is judged in the context of rules. In particular, the path of the funds rate implied by the Taylor rule tracks the actual funds rate closely over most of the Greenspan era dating back to 1987 (see Figure 3). This result is not surprising because Taylor's rule instructs the Fed to keep inflation trending down toward 2%, while retaining some sensitivity to current economic conditions, parameters that capture the stated intentions of virtually all Fed officials.

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TOO RICH A DIET? SALOMON HAD A BAD YEAR. YOU WOULDN'T KNOW IT FROM ITS EXECUTIVES' TAKE

By **Brett D. Fromson**
July 2, 1995

Salomon Brothers Inc.'s London-based trading department lost $400 million last year, but the executive in charge, managing director