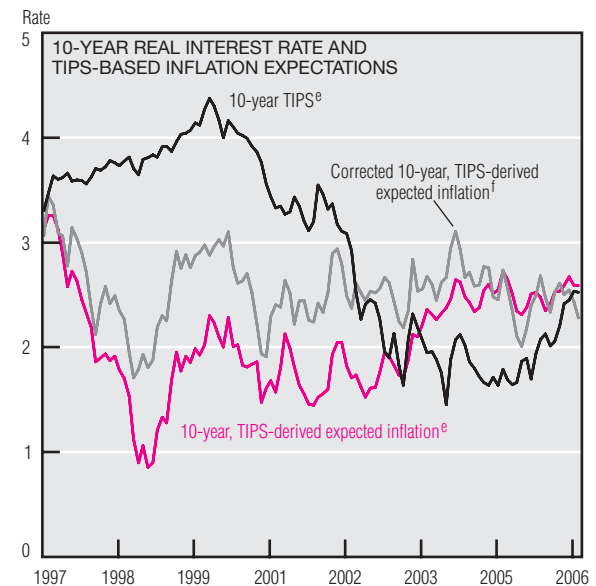
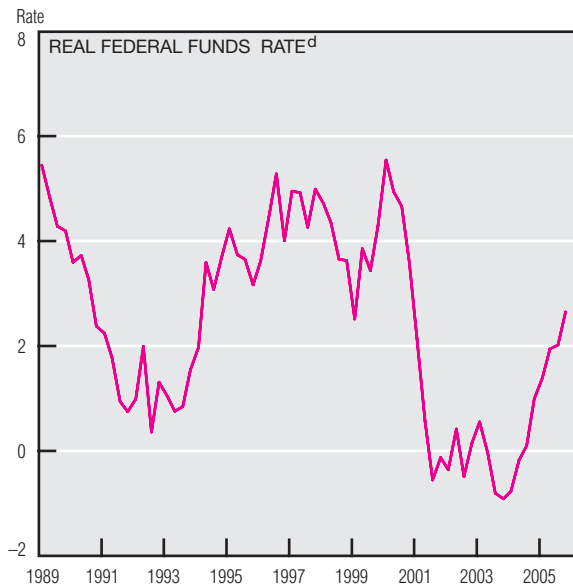
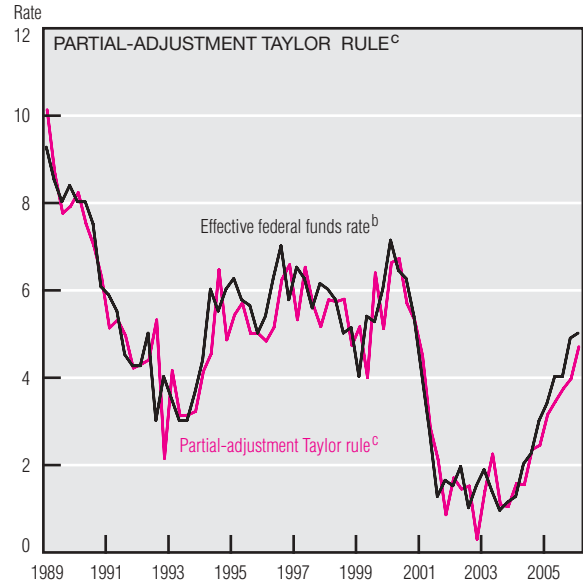
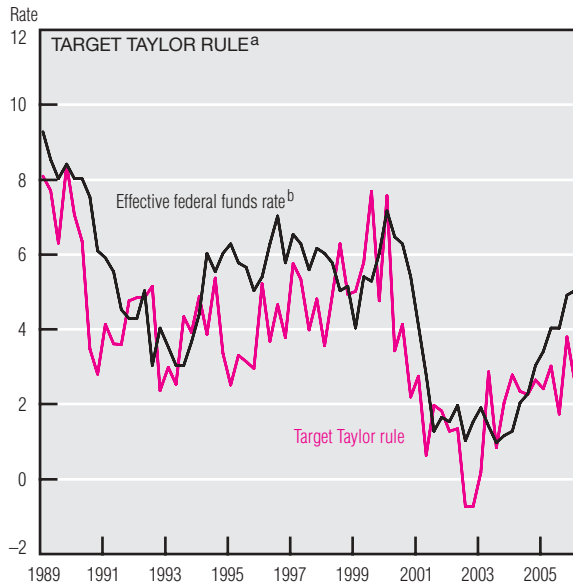


Taylor Rules and Monetary Policy



- a. The target Taylor rule is adapted from John B. Taylor, "Discretion versus Policy Rules in Practice," *Carnegie-Rochester Conference Series on Public Policy*, vol. 39 (1993), pp. 195–214.
- b. Effective federal funds rate on the last day of each quarter.
- c. The partial-adjustment Taylor rule is the weighted average of the last two quarters' federal funds rate and the target Taylor rule.
- d. The real federal funds rate is defined as the difference between the nominal federal funds rate and core PCE inflation.
- e. Treasury inflation-protected securities.
- f. Ten-year, TIPS-derived expected inflation, adjusted for the liquidity premium on the market for the 10-year Treasury note.
- SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis; Board of Governors of the Federal Reserve System, "Selected Interest Rates," *Federal Reserve Statistical Releases*, H.15; and Bloomberg Financial Information Services.

Monetary policy is often described as a rule or strategy for changing the federal funds rate. No rule captures the FOMC's decisionmaking process perfectly, but the Taylor rule roughly describes its past behavior, offering a benchmark for how it might behave in the future. This rule posits that the Fed raises the funds rate when inflation rises or real output growth exceeds the estimated growth of potential and lowers the rate when inflation falls or real output growth lags the estimated growth of potential.

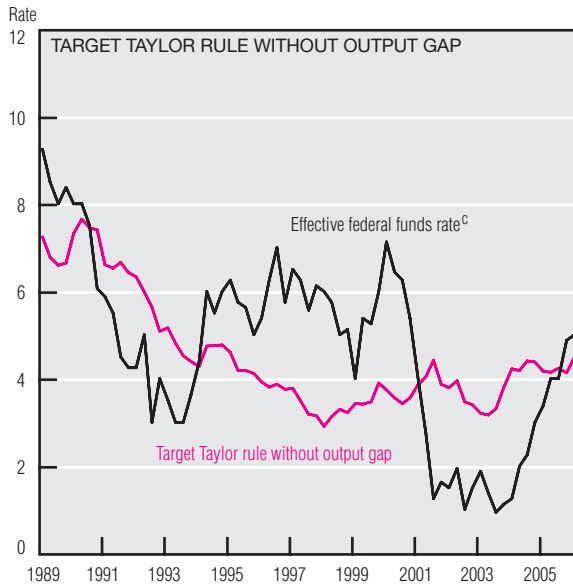
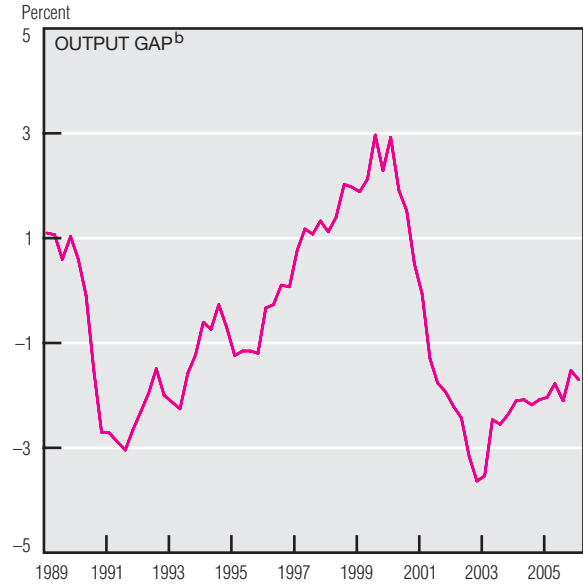
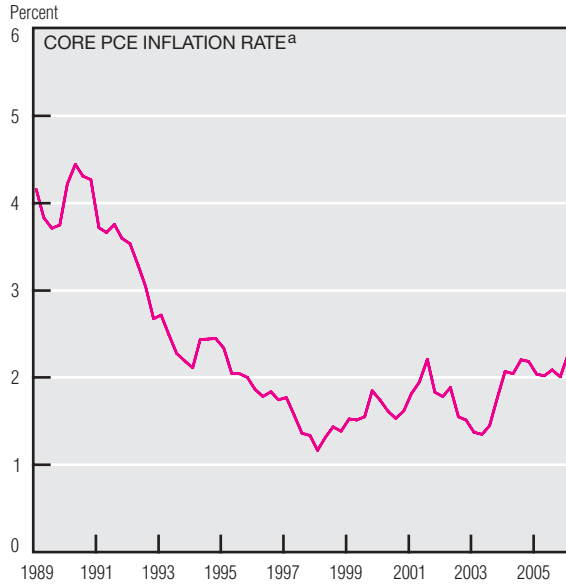
An estimated Taylor rule of this sort provides a "target" that the FOMC can be thought to approach over time. The current number suggests that the FOMC has tightened more than it has under similar economic conditions in the past. There is evidence, however, that the FOMC only slowly tries to adjust the funds rate to its assumed target; a "partial-adjustment Taylor rule" maps the funds rate's movements extremely closely.

But any rule depends implicitly on the Fed's long-term inflation target

and the economy's long-term average real interest rate. The real ex post (after inflation) interest rate is lower today than it was in the mid- to late 1990s. This rate can also be gleaned from the yield on Treasury inflation-protected securities (TIPS), which measures what the market expects real interest rates to average over the next 10 years. The TIPS yield also suggests that real interest rates may have fallen. If the long-term real funds rate has dropped below the

(continued on next page)

Taylor Rules and Monetary Policy (cont.)



Taylor Rule with Alternative Inputs, 2006:IIQ

	Target Taylor rule	Partial-adjustment Taylor rule
Baseline Taylor rule	2.58	4.69
Target inflation (1.5%)	2.98	4.77
Long-run real rate (1.5%)	1.78	4.51
Previous quarter's output gap growth	4.12	5.02
Previous quarter's inflation rate	3.45	4.88

a. Personal consumption expenditures less food and energy.

b. The output gap is defined as the natural log of real gross domestic product less the natural log of potential gross domestic product, taken from Congressional Budget Office data.

c. Effective federal funds rate on the last day of each quarter.

SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis; Board of Governors of the Federal Reserve System; and Bloomberg Financial Information Services.

2.3% estimated in the above rule, the target Taylor rule would be lower than the chart suggests.

The FOMC's implicit long-term inflation target also influences the Taylor rule, which assumes that the implicit inflation target for core PCE inflation is 2.4%. It is likely, however, that this implicit target has fallen since the late 1980s and is slightly above 1.5%. TIPS provides another clue to the Fed's implicit long-term inflation target. Since TIPS protects against inflation over the next 10 years, inflation should equal the 10-year yield on

nominal Treasury bonds minus the real TIPS yield. This calculation suggests that CPI inflation over the next 10 years should average 2.3%. Since PCE inflation has averaged around $\frac{1}{2}$ percentage point below CPI inflation, the Fed's implicit long-term inflation target might be between 1.5% and 2%. This implies a higher target Taylor rule than the chart suggests.

Another important input to the rule is the output gap, but estimating it entails substantial error. The most recent estimate suggests that although output is below potential, it is nearly stable, but that estimate is

heavily influenced by the 2006:IIQ slowdown in GDP. This may be an aberration, however. If the gap were shrinking at the same rate as in previous quarters, the target Taylor rule would be nearly 150 basis points above the current estimate of 2.6%.

Yet another estimate of where the target Taylor rule might head can be made by assuming that inflation over the next three quarters will be 2.84%, as in the most recent quarter. This suggests that the target Taylor rule might be 90 basis points above its current level.