

## Taylor Rules

$$\widehat{FFR}_t = \rho FFR_{t-1} + (1 - \rho)[(r_t^* + \pi_t^*) + 1.5(\pi_t - \pi_t^*) + \beta gap_t]$$

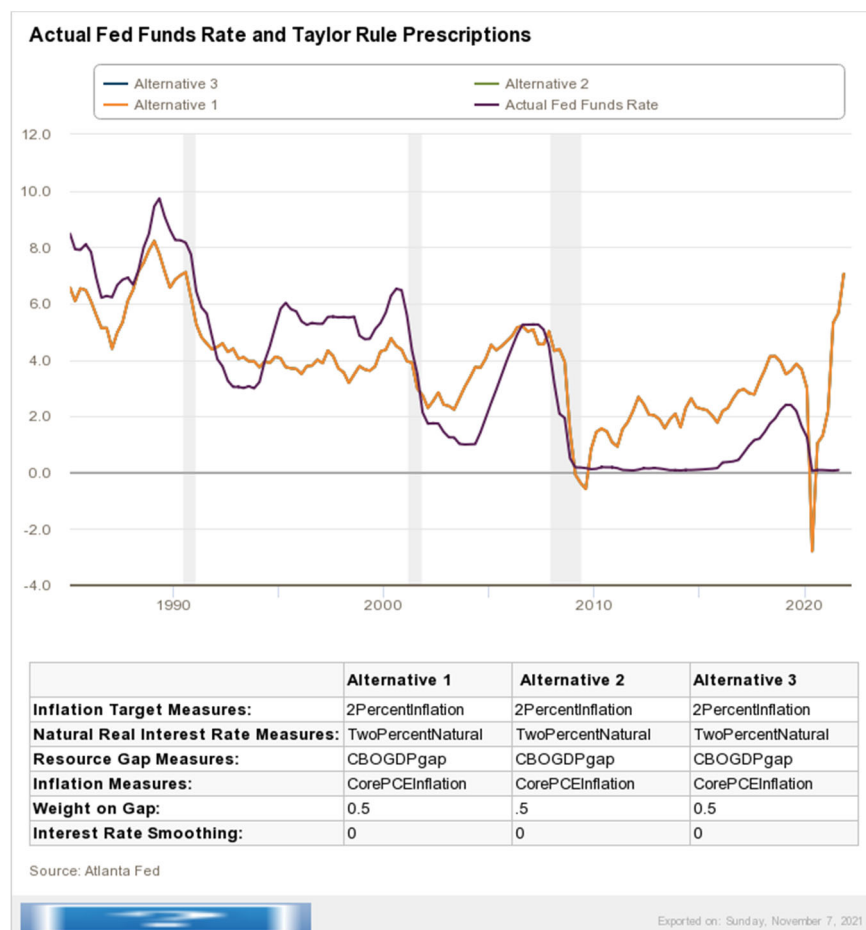
Smoothing

neutral nom. int. rate

infl. gap

output gap

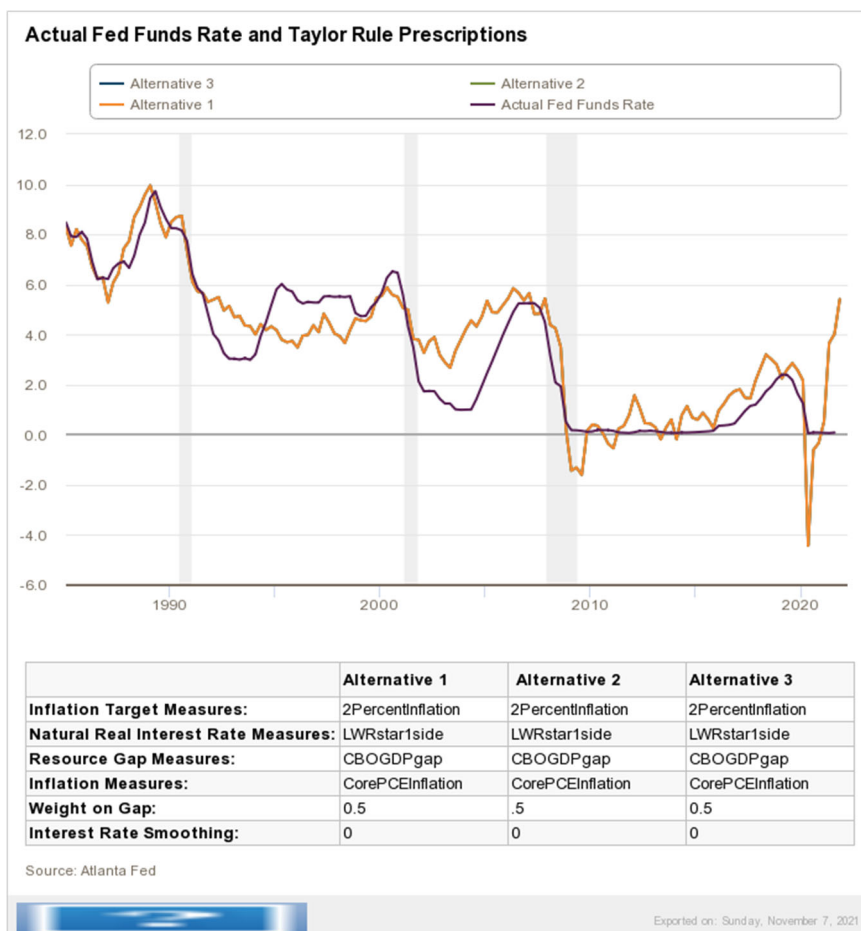
- Set  $\rho = 0$ ,  $r^* = 2\%$ ,  $\pi^* = 2\%$ ,  $\pi$  is Core PCE 4 qtr inflation, gap is CBO output gap



Source: FRB Atlanta, <https://www.frbatlanta.org/cqer/research/taylor-rule.aspx?panel=1>

A constant natural rate of interest is implausible, so consider following:

- Set  $\rho = 0$ ,  $r^* = 1$  sided Laubach-Williams estimate,  $\pi^* = 2\%$ ,  $\pi$  is Core PCE 4 qtr inflation, gap is CBO output gap



Here's the evolution of natural (real) rate of interest, as estimated by Laubach and Williams (also output gap from CBO).

