What rule for the Federal Reserve? Forecast targeting!

Lars E.O. Svensson

Stockholm School of Economics, CEPR, and NBER
Web: larseosvensson.se

"Are Rules Made to Be Broken?"
61st Economic Conference, Federal Reserve Bank of Boston,
October 13-14, 2017

Ben Bernanke (2015): “The Fed has a rule”

The presumption that the Taylor rule is the right rule, or the right kind of rule, I think, is no longer state-of-the-art thinking. [Svensson (2003)] argues that Taylor rules are not robust responses to complex situations.

The Fed has a rule. The Fed’s rule is that we will go for a 2% inflation rate; we will go for the natural rate of unemployment; we put equal weight on those two things; we will give you information about our projections, our interest rate.

That is a rule, and that is a framework that should clarify exactly what the Fed is doing.

Outline

- Problems with The FORM (CHOICE) Act and its Reference Rule (the Taylor rule)
- The Fed's mandate
- How to best fulfill the mandate: Forecast targeting
  - Decision
  - Implementation
  - Summary of the rule
- The accountability of the Fed
- An example: Reviewing the policy decision
- Is the Fed already practicing forecast targeting?
- Conclusions

The FORM (CHOICE) Act and the Reference Rule

- Yellen 2015: The Act will impair the Fed's ability to fulfill its mandate
- It implies a threat to Fed's independence: Congress and the Government Accountability Office (GAO) get short-term influence over monetary policy
- There is a Reference Rule, which is the original 1993 Taylor rule (TR),

$$i_t = 2 + \pi_t + 0.5\,(\pi_t - 2) + 0.5\,y_t$$

  which thus becomes the benchmark
- FOMC must within 48 hours submit its Directive Policy Rule (DPR), with coefficients
- Departures of the DPR from the TR require "a detailed justification"; GAO will judge compliance, conduct reviews, and report to Congress

Problems with the TR (Svensson 2003)

- Is not optimal, sometimes far from optimal; uses too little information; provides rigid response to inflation and GDP gap; does not allow judgmental adjustments
- Good monetary policy needs to respond to *all* relevant information (much more than current inflation and GDP gap), take into account judgment, and adapt to new information and situations. The TR is too rigid for this.
- Possible response: TR is mere "guidelines" for MP, deviations *are* allowed (Taylor 1993, 2000).
  - But then *incomplete* rule!
  - No rule for when deviations are appropriate!

The Fed's mandate

- Maximum employment and price stability
- Simplify: Assume exogenous labor-market participation rate: Then focus on unemployment and the (minimum) long-run sustainable unemployment rate, *u**
- FOMC "Balanced approach": Equal weight on stabilizing inflation around 2% and unemployment around (*estimated*) *u**
- Standard loss function:

$$L_t = (\pi_t - \pi^*)^2 + (u_t - u^*)^2$$

Fulfilling the mandate

- Consider “normal” times, no balance-sheet policy: Policy rate is instrument
- Two important considerations:

1. Policy-rate changes affect inflation and activity with a lag
   - Then policy need to focus on forecasts of inflation and unemployment
2. Expectations of *future* policy rate matters, not the current policy rate (Woodford: “Management of expectations”)
   - These policy-rate expectations affect longer interest rates and asset prices, which affect real activity
   - Thus, the entire policy-rate path matters

Fulfilling the mandate: Forecast targeting

- Select the policy rate and, importantly, the policy-rate path, so that the corresponding forecasts of inflation and unemployment "look good"
- "Looking good": To best fulfill the mandate, that is, to best stabilize the inflation forecast around 2% and the unemployment forecast around (estimated) *u**
- Not to discuss and select a policy-rate path is an *incomplete* decision process

Forecast targeting: Decision in quarter *t*

- Policy-rate path, $i^t \equiv (i_{t,t}, i_{t+1,t}, ..., i_{t+T,t}) \equiv \{i_{t+\tau,t}\}_{\tau=0}^{T}$
  forecast of inflation, $\pi^t \equiv \{\pi_{t+\tau,t}\}_{\tau=0}^{T}$
  forecast of unemployment, $u^t \equiv \{u_{t+\tau,t}\}_{\tau=0}^{T}$
- Forecast loss function (mean forecasts, not modal)

$$L_{t+\tau,t} = (\pi_{t+\tau,t} - \pi^*)^2 + (u_{t+\tau,t} - u^*)^2$$

- Select the policy-rate path i^t so that π^t and u^t minimize

$$\mathcal{L}_t = \sum_{\tau=0}^{T} L_{t+\tau,t} = \sum_{\tau=0}^{T} (\pi_{t+\tau,t} - \pi^*)^2 + \sum_{\tau=0}^{T} (u_{t+\tau,t} - u^*)^2$$

- Mean squared gaps: $\mathcal{L}_t/T = \mathrm{MSG}_t^{\pi} + \mathrm{MSG}_t^{u}$

Forecast targeting: Decision

- Forecasts used as intermediate targets: “Forecast targeting”
- Takes into account all relevant information
- New information is “filtered through the forecasts”
- Relevant information is info that affects the forecasts
- Allows for judgmental adjustments (combination of model simulations and judgmental adjustments)
- Allows for new situations, updating, learning, model uncertainty (Bayesian optimal policy)
- Can be modified to handle Woodford’s “commitment in a timeless perspective” (Svensson and Woodford 2005; Svensson 2010, section 3)
- Or discretion (Svensson 2010, section 3.8)

Forecast targeting: Implementation

- Successful implementation requires *credibility* of policy-rate path and inflation forecast
- Credibility: Expectations aligned with policy-rate path and forecasts of inflation and unemployment
- Make *actual* financial conditions equal to *intended* financial conditions, in order to affect the economy
- To achieve this, publish and justify policy-rate path and forecasts of inflation and unemployment
- Not publishing the policy-rate path is *to hide the most important information*
- Justification of policy may include demonstrations that alternative policy-rate paths lead to worse mandate fulfillment. MSGs may be used.

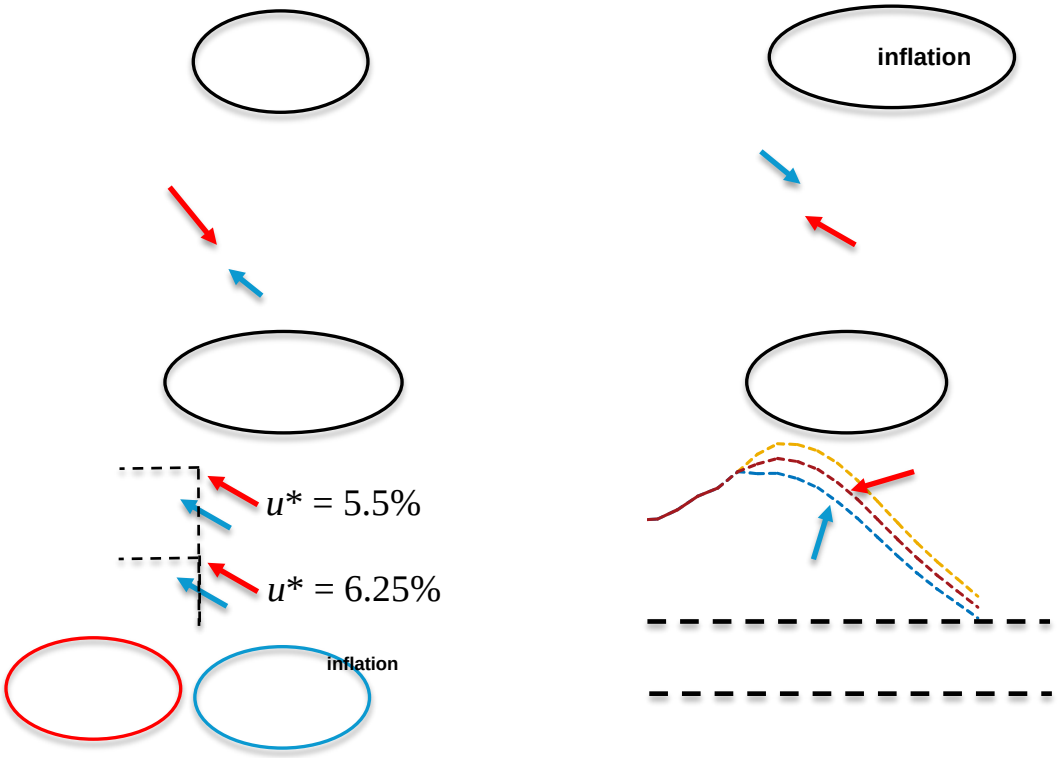
The forecast-targeting rule: Three steps

1. For a given policy-rate path (for example, last decision), construct new forecasts of inflation and unemployment, taking new information into account.
2. If the new forecasts "look good," keep the given policy-rate path; if they do not look good, select a new policy-rate path so they do look good.
3. Publish and justify the policy-rate path and forecasts of inflation and unemployment in order to make them credible. If needed, demonstrate that alternative policy-rate path lead to worse mandate fulfillment; MSGs may be used

Accountability

- Publication and justification of policy-rate path and inflation and unemployment forecasts allows Fed policy to be reviewed, by external observers and at regular hearings in Congress
- Review possible in real time as well as after outcomes for inflation and unemployment have been observed
- This way the Fed can be held accountable for fulfilling the mandate.

An example:
Reviewing the policy decision, Riksbank Feb 2013

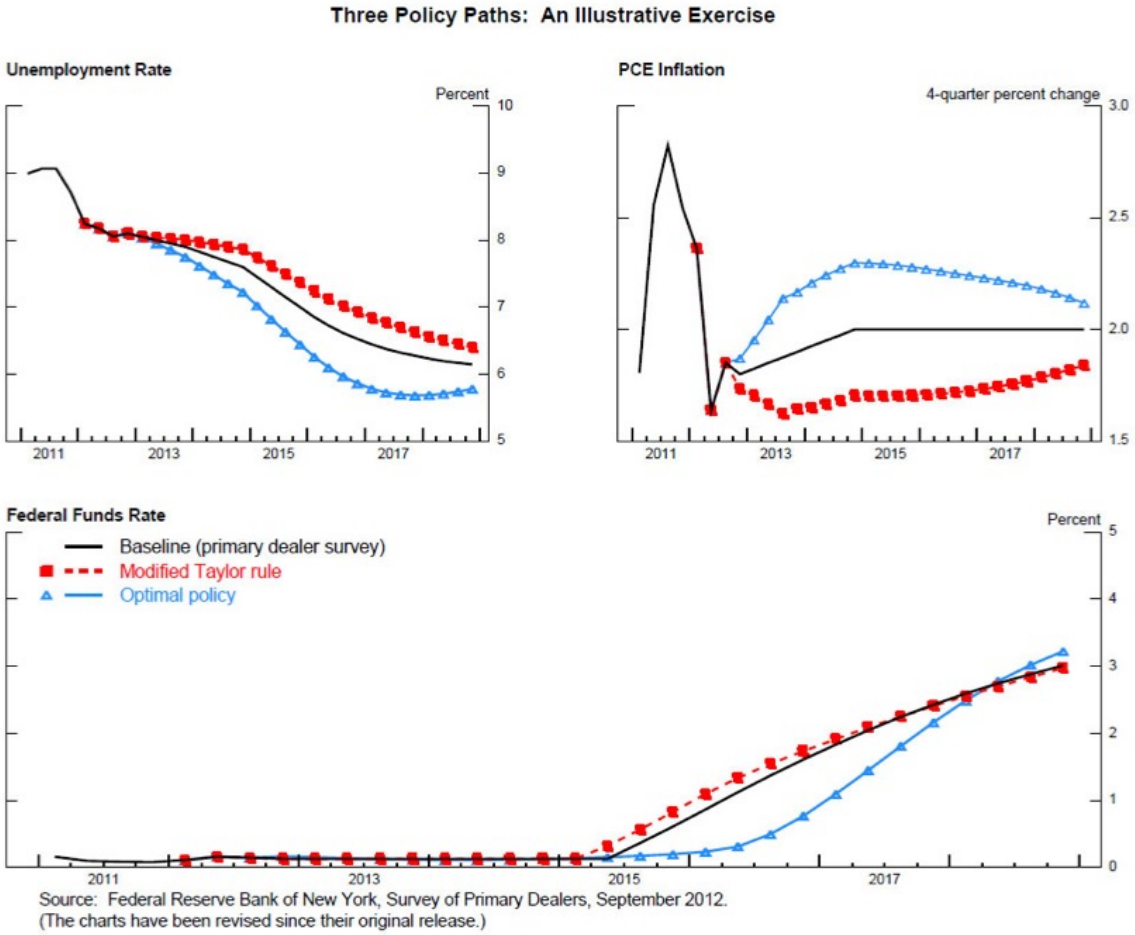


An example:
Reviewing the policy decision, Riksbank Feb 2013

- The forecasts of inflation and unemployment were conditional on a high forecast of foreign interest rates, much above market expectations
- If instead conditional on market expectations of foreign interest rates, the inflation forecast shifts down and the unemployment forecast shifts up
- Then an even lower policy-rate path was warranted, which I dissented in favor of

Another example: Three policy-rate paths (Yellen 2012)

Add MSGs!



Does the Fed already practice forecast targeting

- Publication of Summary of Economic Projections (SEP): Median projections of policy rate, inflation and unemployment
- Some problems:
  - Medians of FOMC participants (not voters); equal weights, but Chair has more weight
  - Medians of projections not consistent. Quantitatively important?
  - Initials of participants would help
  - Not joint FOMC decision. Quantitative difference?
- SEPs already used to some extent for justification of policy (quotes) and for holding the Fed accountable (observers, media)
- Better with joint decision and more explicit justification

Conclusions

- Best rule to fulfill mandate: Forecast targeting
- Publication and justification of policy-rate path and forecasts of inflation and unemployment make it possible to hold the Fed accountable for fulfilling the mandate
- Better with joint FOMC decision on projections of policy rate, inflation, and unemployment

Reaction function?

- Policy rate responds to *all* relevant information (that is, to all information that affect the forecasts of inflation and unemployment)
- Relevant information changes over time (new shocks, changing structure, …)
- Explicit reaction function of *information* complex: Too complex to write down
- Reaction to *forecasts* simpler: If inflation forecast shifts up (down) and/or unemployment forecast shifts down (up), shift policy-rate path up (down)
- New information "filtered through forecasts"

Time-consistency problem, forward-looking variables

- Commitment in time-less perspective (Svensson & Woodford 2005; Svensson 2010, section 3)
  - Either modify loss function, add cost of deviating from previous announcement
  - Or add restriction on policy rate
- Discretion (Svensson 2010, section 3.8)
  - Expectations depend on state variables
- Quantitatively important?
  - Practical experience
  - Economy sluggish, expectations sluggish