Monetary policy: Inflation targeting in a closed economy

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Contents

1 How does monetary policy work?

The policy rate is the most important tool for the central bank

- In Norway: the interest rate on large banks overnight deposits at Norges Bank (up to a quota)
- Createas the floor for market interest rate
- Affects the rate of inflation and other key macroeconomic variables through different channels
- Works through several channels
  - Exchange rate channel
  - Expectations channel
  - Demand channel

2 Monetary policy trade offs

Critera for an appropriate interest rate path:

1. The inflation target is achieved: the interest rate path should stabilize inflation at target or bring inflation back to target after a deviation has occured
2. The inflation targeting regime is flexible: The interest rate path should provide a reasonable balance between the path for inflation and the path for capacity utilization in the economy
3. Monetary poly is robust: the interest rate should be set so that monetary policy mitigates the risk of a buildup of financial imbalances, and so that acceptable developments in inflation and output are also the likely outcome under alternative assumptions about the functioning of the economy

3 Monetary policy under inflation targeting

transmission mechanism

- the output gap

$$y = \alpha(i - \pi^e - \rho) + v$$

  where $y = \frac{Y - \bar{Y}}{\bar{Y}}$ denotes the output gap and the real interest rate is $r = i - \pi^e$

- alternatively, we can write the IS-equation as

$$y = \alpha(r - \bar{r})$$

  where $\bar{r} = \rho + \frac{1}{\alpha}v$ is the short-run neutral real rate

- inflation equation:

$$\pi = \pi^e + \gamma y + u$$

  where u is a cost-push shock (or inflation shock)

monetary policy

- loss function:

$$L = \frac{1}{2}\left[(\pi - \pi^*)^2 + \lambda y^2\right]$$

- parameter λ measures how much weight the central bank assigns to production stability relative to price stability
  - $\lambda = 0$: strict inflation targeting
  - $\lambda > 0$: flexible inflation targeting
  - $\lambda = \infty$: output gap targeting

optimal monetary policy

- minimize the loss function, given the economic mechanisms described above:

$$\min_r \frac{1}{2}\left[(\pi - \pi^*)^2 + \lambda y^2\right]$$

- the FOC can be written as:

$$\pi - \pi^* = \frac{-\lambda}{\gamma} y \iff y = -\frac{\gamma}{\lambda}(\pi - \pi^*)$$

  the latter shows the extent to which the central bank is willing to drive the economy into a recession when inflation is above the target