Countering Downward Bias in Inflation

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The views I express here are my own and do not necessarily reflect the views of the Federal Open Market Committee (FOMC) or within the Federal Reserve System.
Key Messages

- Effective Lower Bound (ELB) risk leads to downward bias in inflation

- When ELB drives down $\pi < \pi^*$ for an extended period, need to follow with some period of $\pi > \pi^*$ in order to establish $E[\pi]$ consistent with symmetric target
Low Trend Growth and Low Neutral Interest Rates ($r^*$)

Estimates for Advanced Foreign Economies are GDP-weighted averages across the US, Canada, the Euro Area, and the UK using OECD estimates of GDP at purchasing power parity. Prior to 1995, Euro-Area weights are the summed weights of the eleven original euro area countries. Sources: Laubach and Williams (2003); Holston, Laubach, and Williams (2017); FRBNY.
Undershooting Inflation Goals

Deviation from Central Bank Inflation Target

Source: Various statistical collection agencies from Haver Analytics
Conventional Monetary Policy Easing During Past Recessions

Federal Funds Rate (percent)

Average easing during recessions 500 bps
Current fed funds rate range 150-175 bps
Long-run neutral rate 250 bps

Source: Board of Governors of the Federal Reserve System from Haver Analytics
Fed Funds Rate and a Traditional Benchmark

Federal Funds Target Rate (percent)

Taylor Rule (1999):
\[ r(t) = r^*(t) + \pi(t) + 0.5[ \pi(t) – \pi^* ] + 2[ u^{LR}(t) – u(t) ] \]

\( r^*(t) \) and \( u^{LR}(t) \) from Blue Chip Consensus Forecast.
Source: Board of Governors of the Federal Reserve System from Haver Analytics
Offsetting ELB Downward Inflation Bias

- Heightened risk of ELB
  - Downward bias in inflation
  - Risk of \( E[\pi] < \pi^* \)

- To offset bias, likely need \( \pi > \pi^* \) for some period of time so that:
  - \( E[\pi] \) is firmly anchored at \( \pi^* \)
  - \( \pi = \pi^* \) in the medium term

- Embrace approaches aimed at these bias-adjusting outcomes
Outcome-Based Approaches

- Overarching aim: achieve dual mandate goals

- To do so, monetary policy must commit to:
  - Provide extraordinary policy accommodation during and after ELB episodes
  - Generate periods of $\pi > \pi^*$ to offset ELB downward inflation bias
    - Prescriptions from simple rules (e.g., Taylor) are inadequate
    - Recognize $\pi > \pi^*$ is required more than in non-ELB world
    - Convey to public that periods of $\pi > \pi^*$ essential to achieve dual mandate over long haul
    - The outcome of $E[\pi] = \pi^*$ is key

- A number of ways to operationalize this
Example: State-Contingent Price Level Targeting

Core PCE Price Index

Current gap: 5.3%

Source: Bureau of Economic Analysis from Haver Analytics and staff calculations
Example: Asymmetric Policy Response

- Respond more aggressively when inflation below target than when inflation above target: Bianchi, Melosi, Rottner (2020)

- Adjust the standard Taylor Rule

  \[ r(t) = r^*(t) + \pi(t) + \lambda [ \pi(t) - \pi^* ] + 2[ u^{LR}(t) - u(t) ] \]

  - If \( \pi(t) < \pi^* \), larger \( \lambda \)
  - If \( \pi(t) > \pi^* \), smaller \( \lambda \)

Evans’s view: Inflation objectives that have a point target, such as 2 percent, are easier to communicate than objectives defined by an inflation range. As I discuss next, using a range requires even more attention to asymmetry.
Example: Inflation Ranges $[\pi^L < \pi^* < \pi^U]$ 

- **Alternative #1: Harris (2016); Mertens and Williams (2019)**
  - Recognize that inflation will be driven to $\pi^L$ when at ELB
  - Aim for higher inflation $\pi^U$ away from ELB to average $\pi^*$ over time.

- **Alternative #2: Bianchi, Melosi, and Rottner (2020)**
  - When inflation is in range, react less aggressively
  - But set range asymmetrically about target
    - e.g., if $\pi^* = 2\%$, then $\pi^L = 1.5\%$, $\pi^U = 2.85\%$
Example: Inflation Ranges \([\pi^L < \pi^* < \pi^U]\)

- **Alternative #3: Symmetric Range of Policy Indifference**
  - When inflation is in range, do nothing. Say we can go home—
    that’s good enough for government work
Example: Inflation Ranges \([\pi^L < \pi^* < \pi^U]\)

- **Alternative #3: Symmetric Range of Policy Indifference**
  - When inflation is in range, do nothing. Say we can go home—
    that’s good enough for government work
  
  Won’t cure ELB downward inflation bias
Properties of Asymmetric Responses and Range Alternatives #1 & #2

- Parameters can be set so that inflation will average $\pi^*$ over long periods of time

- Do not require mechanical makeup for past periods of inflation away from target
Some Questions

- Can policymakers credibly commit to pursuing the policies prescribed by some of these alternatives?

- How will central banks communicate these strategies effectively?

- How will the public react to protracted periods of $\pi > \pi^*$?
  - Will long-run inflation expectations move up? By how much?

- What are the financial stability implications of the highly accommodative policies prescribed by the alternatives?
My Key Considerations

- **Focus on outcome-based strategies**
  - In the U.S., focus on the dual mandate
  - When ELB drives down \( \pi < 2\% \), likely need follow with period of \( \pi > 2\% \) to get inflation expectations consistent with target

- **Given ELB, any operational framework will need to use unconventional tools (e.g., QE, forward guidance)**
  - Effectiveness of these policies will influence the policy parameters of the alternative frameworks

- **Address potential financial stability risks with regulatory and supervisory tools**

- **Credibility is key and essential for any operational framework**