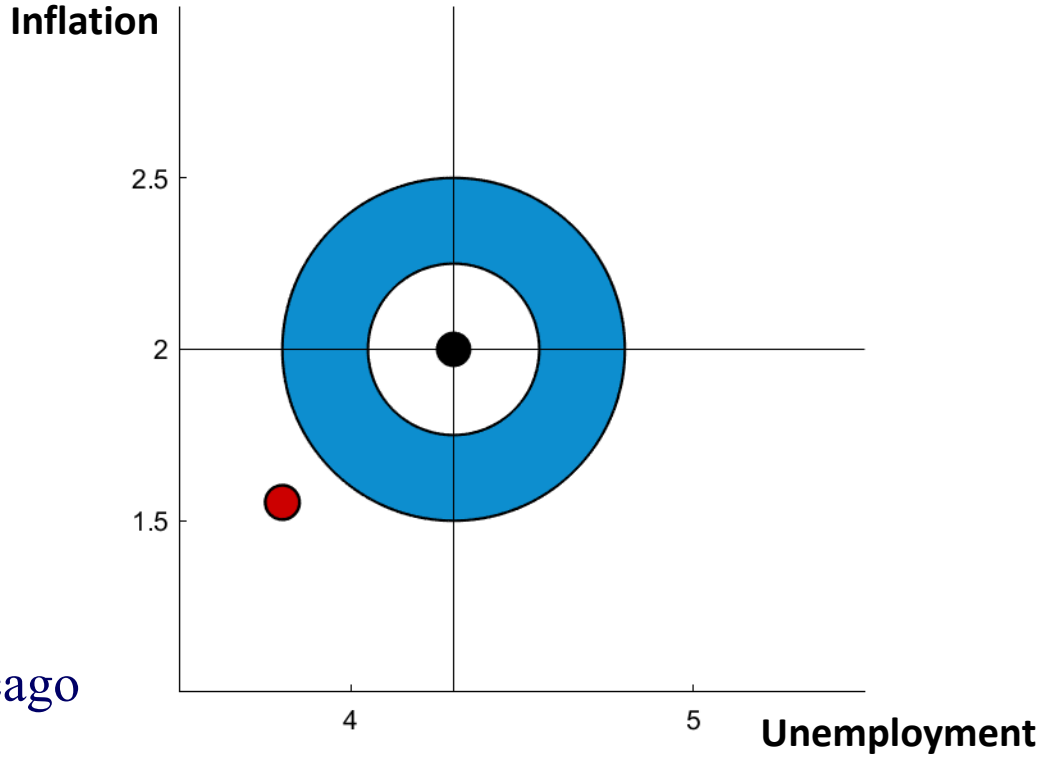
Countering Downward Bias in Inflation



GIC and Banco de México
February 27, 2020
Mexico City, Mexico

Charles L. Evans
President and CEO
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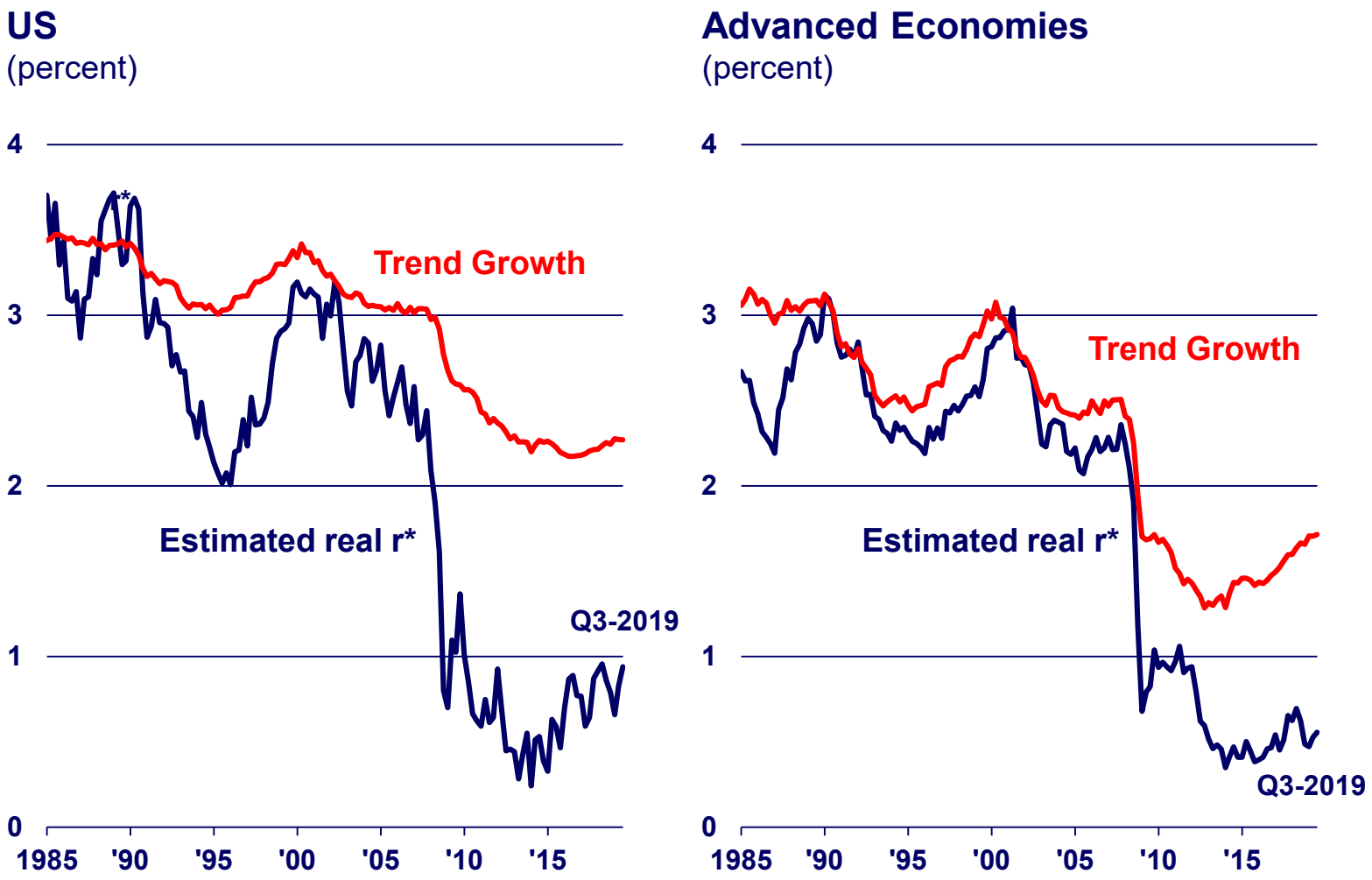
The views I express here are my own and do not necessarily reflect the views of the Federal Open Market Committee (FOMC) or within the Federal Reserve System.

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**

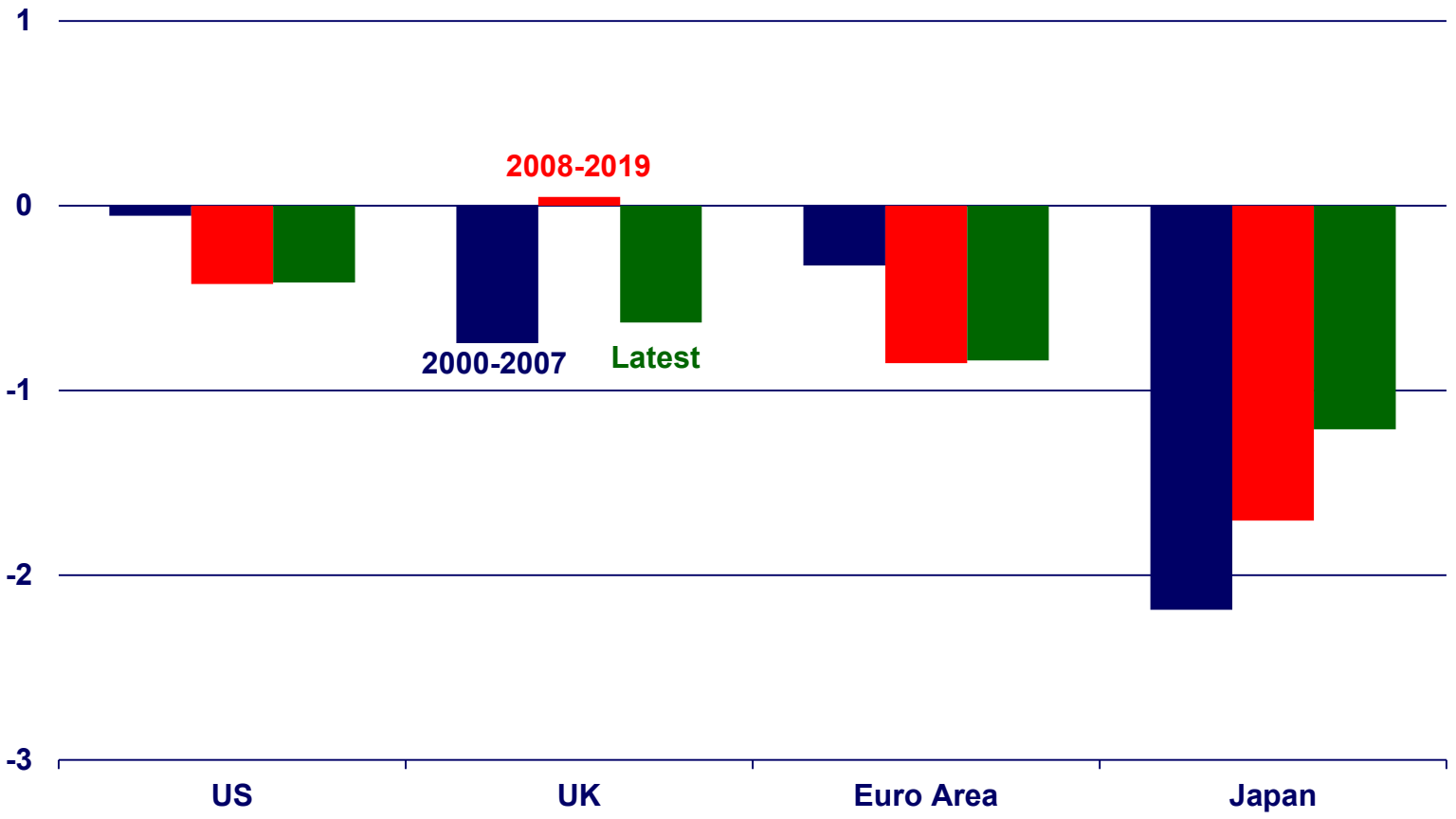
Low Trend Growth and Low Neutral Interest Rates (r*)



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

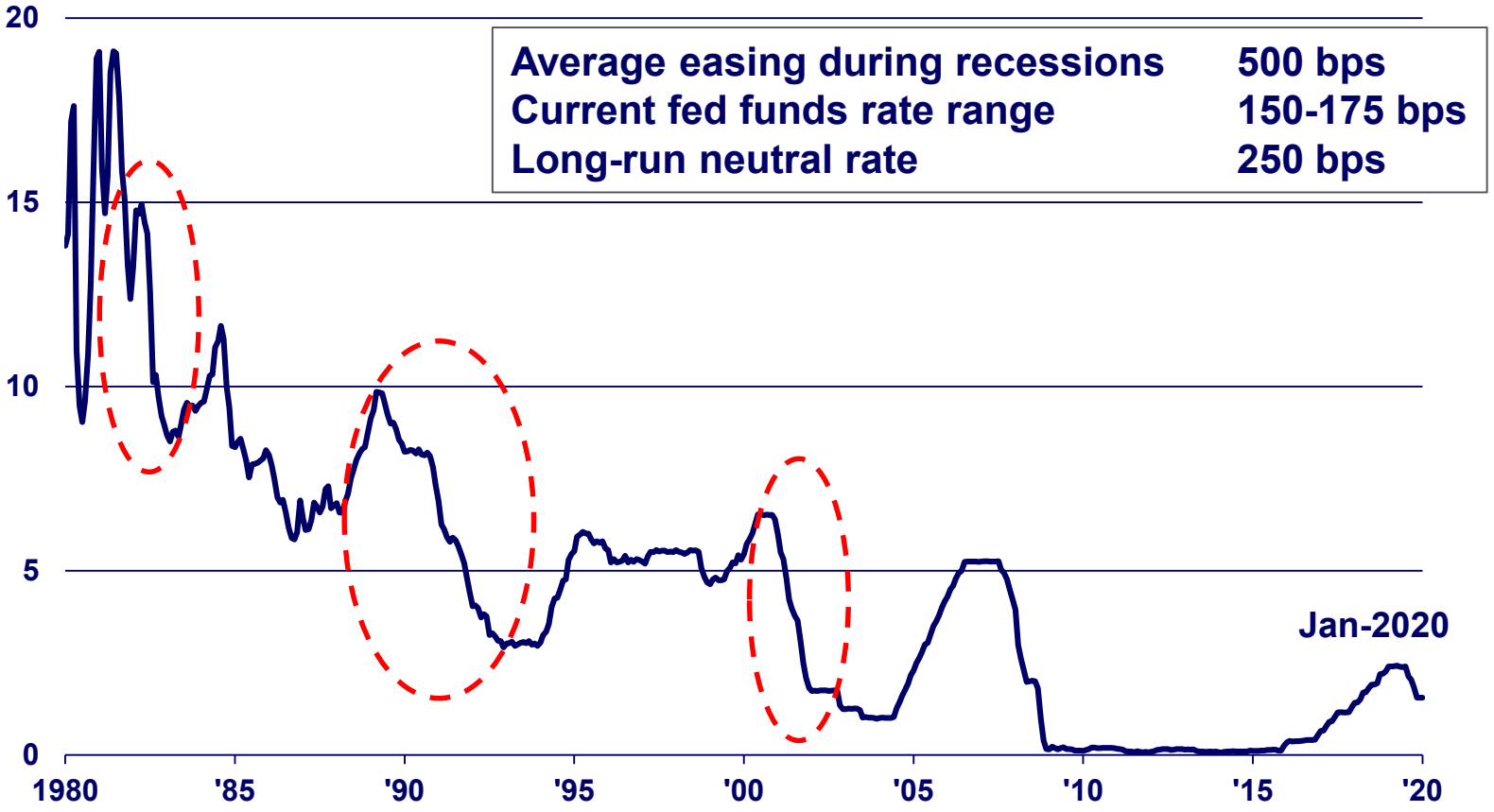
Deviation from Central Bank Inflation Target



Source: Various statistical collection agencies from Haver Analytics

Conventional Monetary Policy Easing During Past Recessions

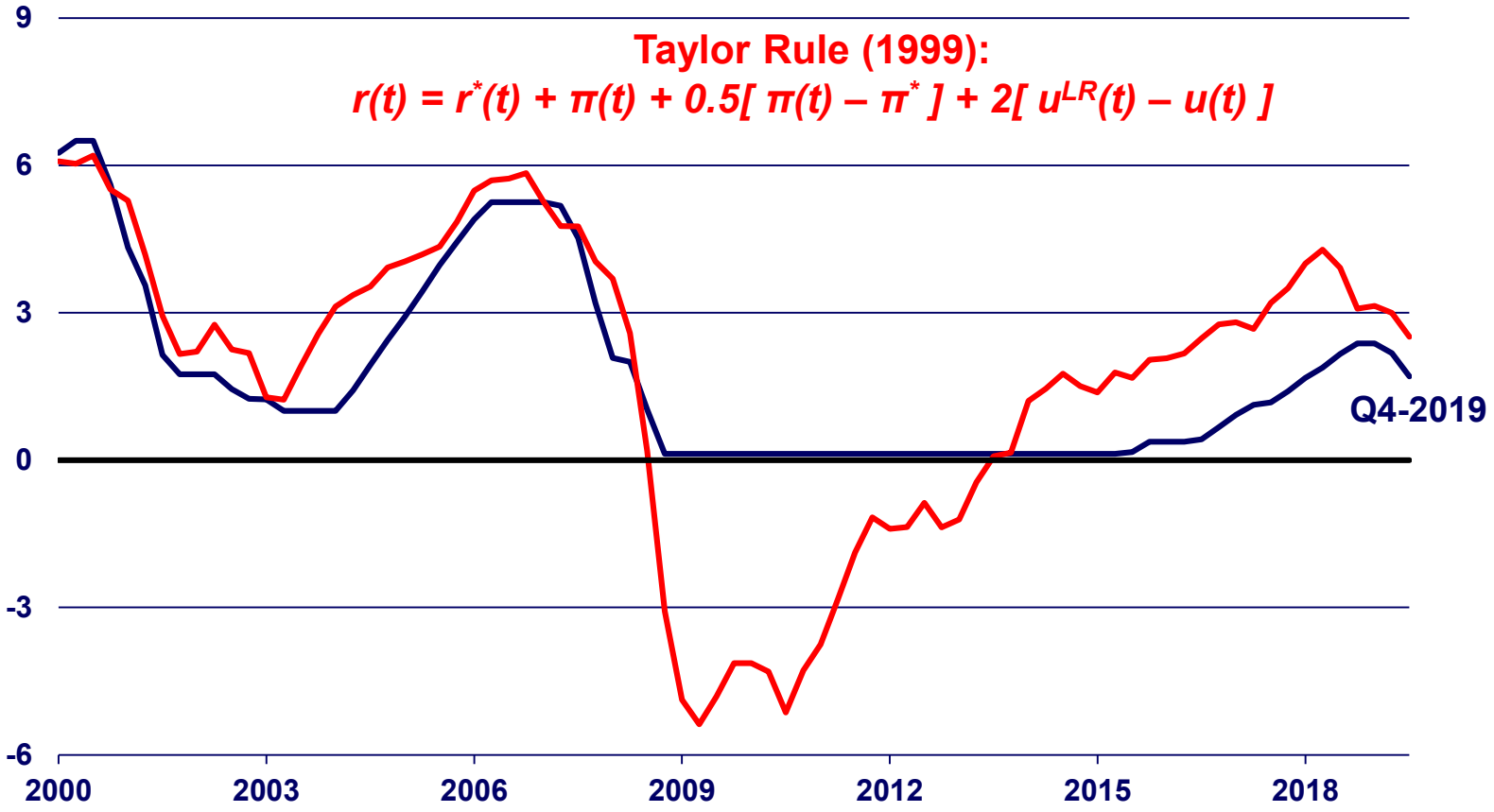
Federal Funds Rate
(percent)



Source: Board of Governors of the Federal Reserve System from Haver Analytics

Fed Funds Rate and a Traditional Benchmark

Federal Funds Target Rate
(percent)



$r^*(t)$ 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

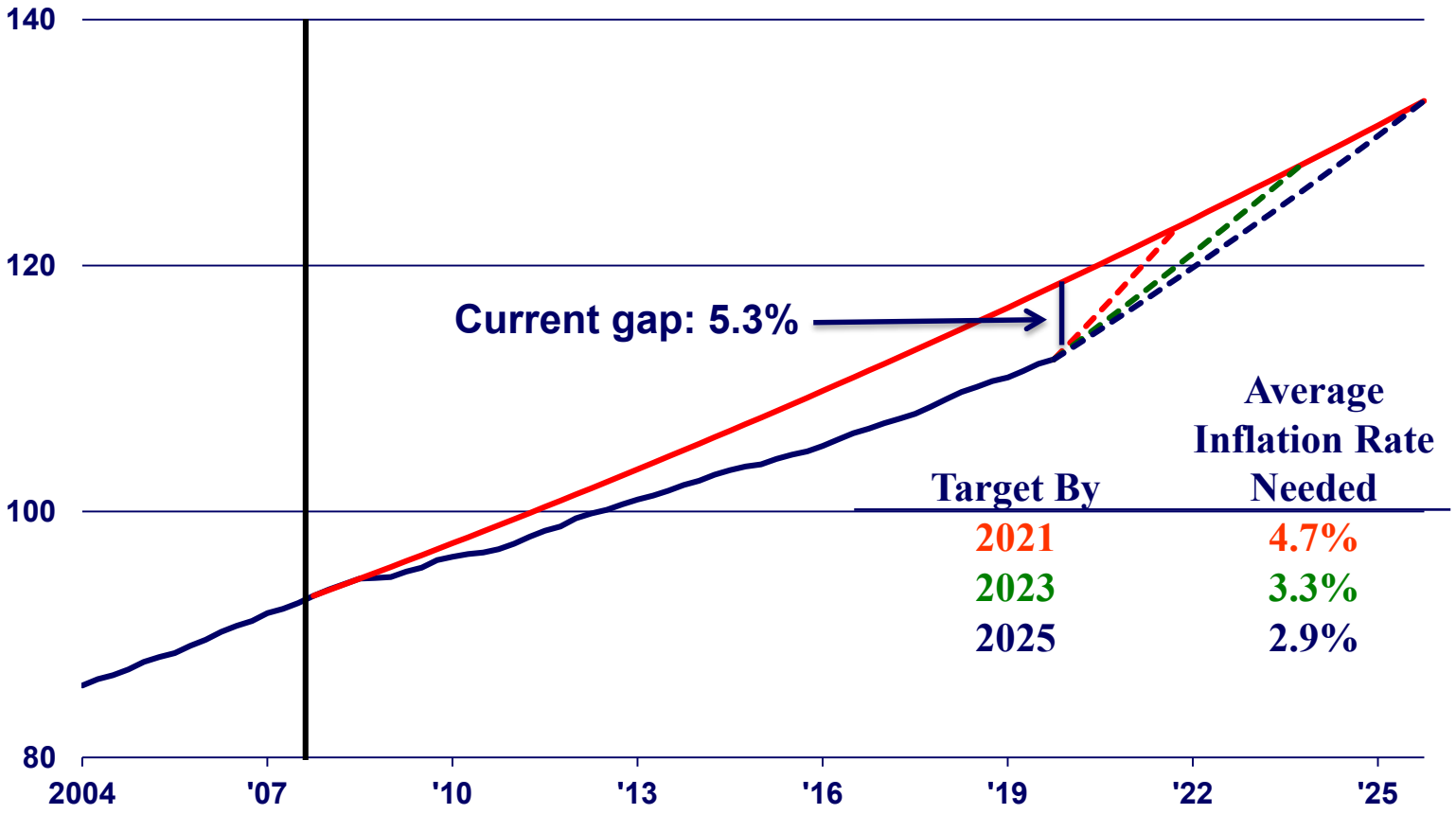
- **Heightened risk of ELB**
  - **Downward bias in inflation**
  - **Risk of $E[\pi] < \pi^*$**
- **To offset bias, likely need $\pi > \pi^*$ for some period of time so that:**
  - **$E[\pi]$ is firmly anchored at π^***
  - **$\pi = \pi^*$ in the medium term**
- **Embrace approaches aimed at these bias-adjusting 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**
    - Prescriptions from simple rules (e.g., Taylor) are inadequate
  - **Generate periods of $\pi > \pi^*$ to offset ELB downward inflation bias**
    - 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



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 λ*
  - *If $\pi(t) > \pi^*$, smaller λ*

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 π^L when at ELB
  - Aim for higher inflation π^U away from ELB to average π^* over time.

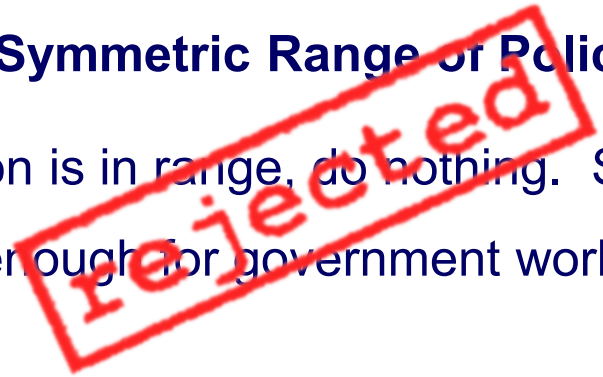
- **Alternative #2: Bianchi, Melosi, and Rottner (2020)**
  - When inflation is in range, react less aggressively
  - But set range asymmetrically about target
    - e.g., if $\pi^* = 2\%$, then $\pi^L = 1.5\%$, $\pi^U = 2.85\%$

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 π* 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**