# Monetary Policy Strategies

Michael Kiley

The views expressed herein are those of the author and do not reflect those of the Federal Reserve Board or its staff.

# Presentation based on

The Fed - Monetary Policy, Employment Shortfalls, and the Natural Rate Hypothesis (federalreserve.gov)

The Fed - Monetary Policy Strategies to Foster Price Stability and a Strong Labor Market (federalreserve.gov)

# Motivation

- I revisit three questions:
  - Is the ELB likely to bind, and, if so, what strategies can mitigate any adverse effects?
  - Should policy respond to measured slack and, if so, how forcefully and symmetrically?
  - How can monetary policy promote labor market strength, with price stability?

# Findings

- The ELB is a significant constraint on monetary policy for reasonable views on the equilibrium real interest rate—and make-up strategies alleviate this constraint.
- Strong responses to inflation and activity in a monetary policy rule limit ELB risks and employment shortfalls.
- Asymmetric (shortfalls) approaches can exacerbate economic volatility and worsen both employment shortfalls and price stability.

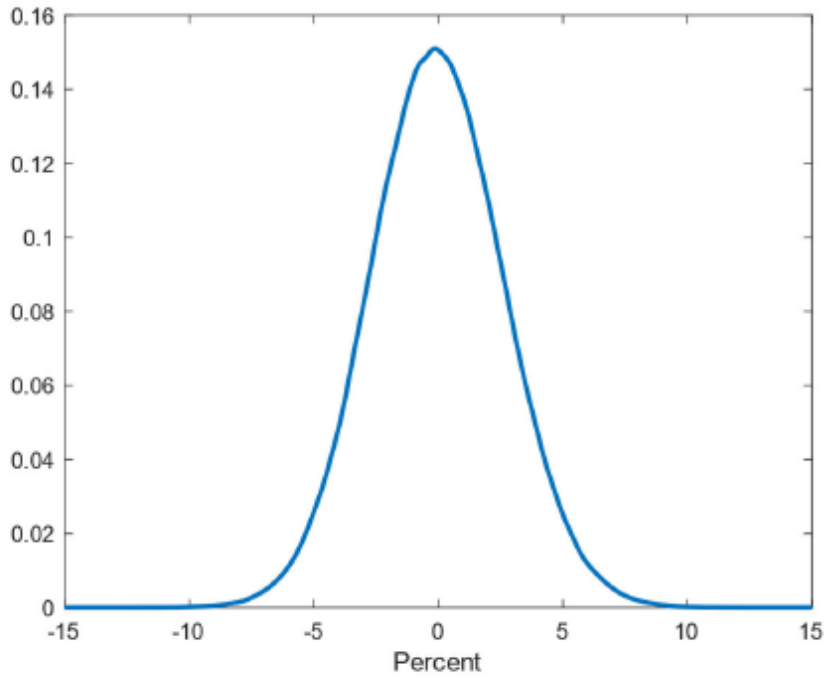
# Approach

- Models
  - Qualitative: Simple New Keynesian Model
  - Quantitative: Simulation of a large-scale policy model, FRB/US

- Factors considered
  - Uncertainty regarding the equilibrium real interest rate r*
  - Uncertainty/mismeasurement of resource utilization
  - Alternative views on how economic activity enters social loss function

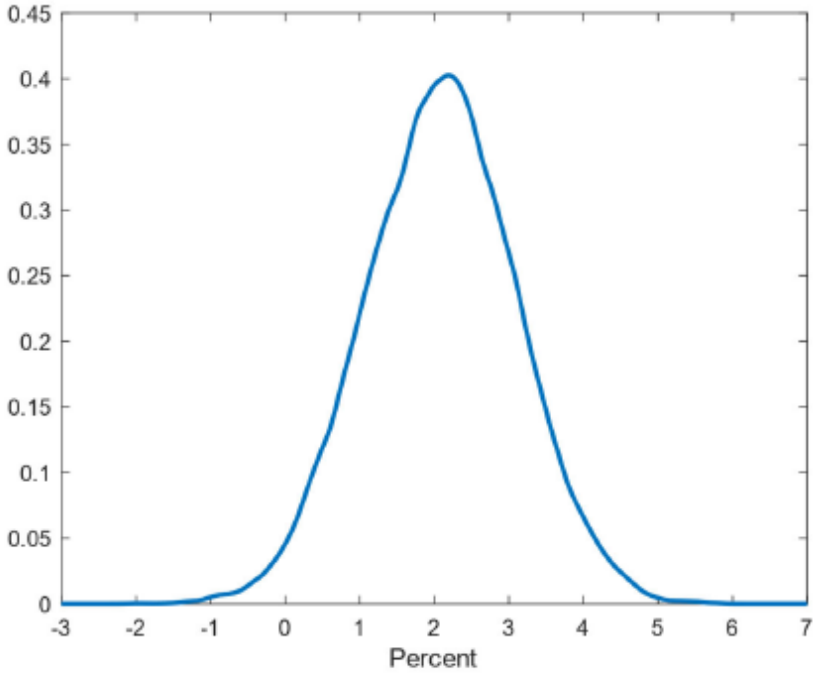
# Uncertainty/mismeasurement of resource utilization and r*

*Figure 3: Measurement error for the output gap in the monetary policy rule*




Source: Author's calculations

*Figure 4: Distribution of equilibrium real federal funds rate in stochastic simul*




Source: Author's calculations

# Alternative views on how economic activity enters social loss function

***Quadratic loss function around potential output***

$$L(t) = [\pi(t) - \pi^*]^2 + \alpha[y(t)]^2$$

- Policymakers view +/- deviations from the inflation objective and of output from potential as equally costly.

***Quadratic loss function for output shortfalls***

$$L(t) = [\pi(t) - \pi^*]^2 + \alpha min[y(t), 0]^2$$

- Policymakers view output shortfalls as costly

| | Balanced approach rule | | With make-up strategy | |
|---|---|---|---|---|
| | Mean | Standard Deviation | Mean | Standard Deviation |
| **Output** | -0.5 | 3.7 | 0.0 | 3.3 |
| **Inflation** | 1.4 | 2.5 | 2.1 | 2.0 |
| **ELB frequency** | 14.9 | | 22.0 | |
| **Symmetric Loss** | 20.4 | | 15.1 | |
| **Shortfalls Loss** | 15.8 | | 10.2 | |

*Balanced approach rule*:

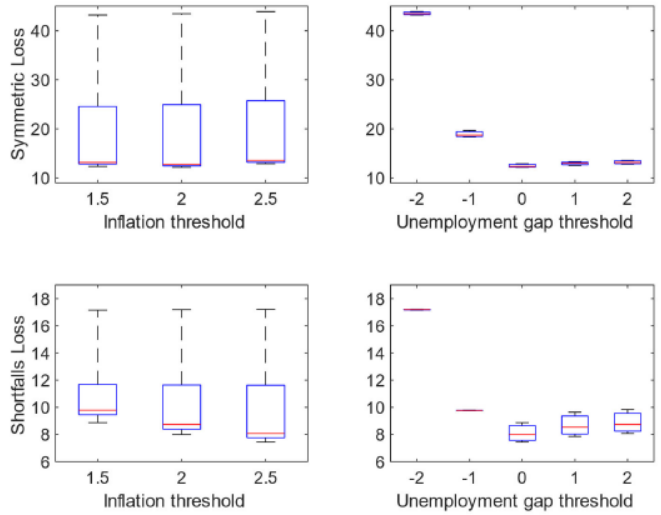
$$r(t) = 0.85 * r(t-1) + 0.15(r^*(t) + 2 + 1.5\{\pi(t) - 2\} + 1\{y(t) - y^*\})$$

# Is the ELB likely to bind?
# Outcomes for balanced approach rule

# Is the ELB likely to bind, and, if so, what strategies can mitigate any adverse effects?

- Threshold approaches (Evans, 2011; Bernanke, Kiley and Roberts, 2019) are effective "explainable" make-up strategies
- Importantly, threshold strategies are only operative if the ELB binds, and hence are effective away from the ELB as well
- Figure presents symmetric loss (top) and shortfalls loss for alternative unemployment and inflation thresholds

*Figure 7: Loss functions for inflation and unemployment thresholds under the preemptive rule*



| | **Preemptive rule, $\pi^{threshold} = 2$ & $(u - u^*)^{threshold} = 1$** | | **Shortfalls rule** | |
|---|---|---|---|---|
| | Mean | Standard Deviation | Mean | Standard Deviation |
| **Output** | 0.0 | 3.0 | 1.8 | 4.5 |
| **Inflation** | 2.0 | 1.9 | 3.6 | 2.4 |
| **ELB frequency** | 31.4 | | 8.0 | |
| **Symmetric Loss** | 12.5 | | 31.2 | |
| **Shortfalls Loss** | 8.5 | | 13.3 | |

# Should policy respond to measured slack and, if so, how forcefully and *symmetrically*?

- I examine a large set of coefficients in a reaction function, and stronger responses to output and inflation promote stability (despite sizable measurement error)
- *Shortfalls rule*:

$$r(t) = 0.85 * r(t-1) + 0.15(r^*(t) + 2 + 1.5\{\pi(t) - 2\} + 1\min(\{y(t) - y^*\}, 0)$$

# How can monetary policy promote labor market strength, with price stability?

- Symmetric policy responses promote stability, which limits employment shortfalls
- Asymmetric policies can lead to a deterioration in stability

**Robustness to risk management considerations**

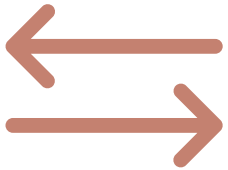
- Is policy robust to other forms of stimulus?
  - Symmetric make-up strategies—Yes
  - Asymmetric strategies—No
- Other considerations not analyzed
  - Is policy robust to nonlinearities in the Phillips curve?
  - Is policy robust to unmodeled costs and benefits of a high-pressure economy (positive hysteresis)?

# Conclusions

**The ELB remains a significant constraint, hindering achievement of the inflation objective and worsening employment shortfalls.**

Make-up strategies address ELB risks.

Threshold approaches are simple and effective



**Symmetric policy reaction functions mitigate the most adverse effects of employment shortfalls by contributing to economic stability.**

**Asymmetric approaches can exacerbate economic volatility**