Discussion of Bianchi, Melosi and Rottner (2019) Hitting the Elusive Inflation Target

Flora Budianto

Bank for International Settlements

SUERF/Banca d'Italia Workshop
18 November 2020

The views expressed here are those of the speaker and do not necessarily reflect the views of the BIS.

Summary: Deflationary bias under a symmetric objective

- While the inflation objective is typically symmetric, the tools to achieve it are **asymmetric** (Draghi, 2016).

  - ▸ No limit to raise interest rates when inflation is too high but a limit to how far interest rates can be cut due to ELB when inflation is too low.

- The tail risk induced by the ELB constraint can lead inflation to fall, ie deflationary bias, under conventional monetary policy.

- Removing the deflationary bias requires an **asymmetric strategy**:

  - ▸ Richard Clarida (2020): "[...] the aim to achieve symmetric outcomes for inflation [...] requires an asymmetric monetary policy reaction function in a low r^* world with binding ELB constraints in economic downturns."

Summary: The Policy Proposal ● Chart

- Under an asymmetric rule, the central bank reacts less aggressively to positive deviations of inflation from target than to negative deviations.
  - ▸ This raises the probability of positive inflation rates and mitigates the downside risk due to the ELB.

- The modified interest-rate rule:

$$R_t = \max\left\{ 1, \left[\mathbb{1}_{\Pi_t < \Pi} \left(\frac{\Pi_t}{\Pi}\right)^{\underline{\theta_\Pi}} + \left(1 - \mathbb{1}_{\Pi_t < \Pi}\right) \left(\frac{\Pi_t}{\Pi}\right)^{\overline{\theta_\Pi}} \right] \left(\frac{Y_t}{Y}\right)^{\theta_Y} R \right\}$$

with $\overline{\theta_\Pi} < \underline{\theta_\Pi}$

- Extension: Asymmetric rule with target ranges.
- Solve non-linear New Keynesian model using global solution methods.

Summary: It's not a makeup strategy

- The asymmetric strategy does not rely on history dependence.

  - Under makeup strategies, the central bank commits to offset past misses of inflation from target (eg Billi (2006), Nessin and Vestin (2005), Budianto et al (2020), Reifschneider and Williams (2000), Bernanke et al. (2019), Mertens and Williams (2019), Coenen et al. (2020), Amano et al. (2020))

    - Makeup strategies can be hard to communicate and less effective if people do not understand them.

- Under an asymmetric strategy, the central bank commits to "care less" about above-target inflation.

  - It raises inflation expectations in bad times (particularly, at the ELB) at the cost of **higher** inflation rates in good times.

Comment 1: Stronger emphasis on welfare vs. deflat. bias

- There can be a trade-off between maximizing welfare and removing the deflationary bias.

    - In Figure 8, the welfare-maximising rule implies a moderate deflation bias.

- Discuss the welfare implications of asymmetric rules more systematically.

    - Lower r^*: welfare-maximising asymmetric rule can coincide with the one that removes the bias.

    - Rules with different target ranges might have different welfare implications.

Comment 2: Possible extensions to the rules 1

- What is the welfare-maximising rule that removes the deflationary bias?

- Interest rate rule with multiple target ranges: react (slightly) more aggressively when inflation is higher than upper limit of range.

$$R_t = \max\left\{1, \left[\mathbb{1}_{\Pi_t < \Pi_L}\left(\frac{\Pi_t}{\Pi}\right)^{\theta_\Pi^1} + \mathbb{1}_{\Pi_t \in \{\Pi_L, \Pi_H\}}\left(\frac{\Pi_t}{\Pi}\right)^{\theta_\Pi^2} + \mathbb{1}_{\Pi_t > \Pi_H}\left(\frac{\Pi_t}{\Pi}\right)^{\theta_\Pi^3}\right]R\right\}$$

with $\theta_\Pi^3 > \theta_\Pi^1 > \theta_\Pi^2$.

Comment 2: Possible extensions to the rules 2

- Flexible asymmetric rule: activate asymmetric rule only in recessions for some period of time.

  - Francois Villeroy de Galhau (2020): *"I personally add that we might [...] be willing to accept inflation higher than 2% for some time, without mechanically triggering a tightening of our monetary stance. [...] If credibly symmetric and medium-term, our inflation objective would probably achieve similar outcomes ex post than explicit average inflation targeting.*

Comment 3: Performance under supply shocks

- How do asymmetric rules perform under supply and demand shocks?
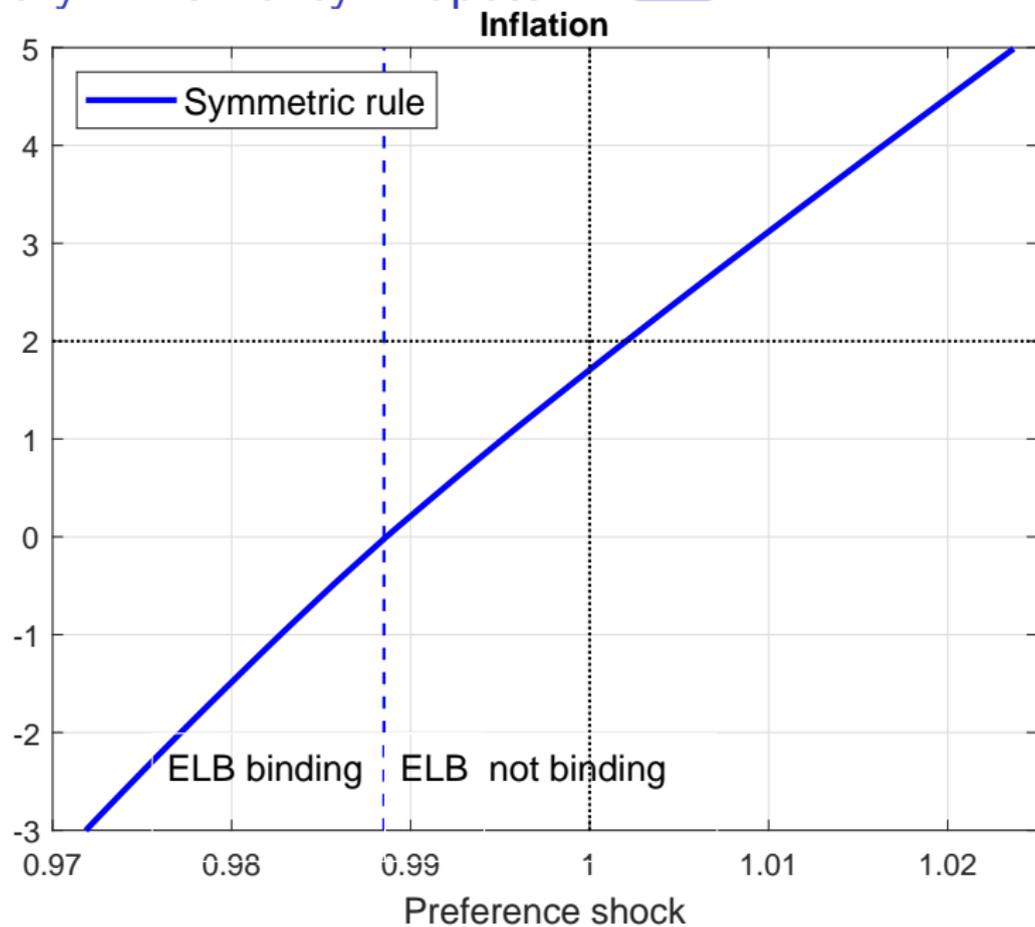
- What are the welfare implications?

Comment 4: Model setup

- Why not a semi-linear model (ie log-linearized NK model subject to ELB)?

  - Results of linearized model can differ from solution of nonlinear model (Boneva et al. (2016), Lindé and Trabandt (2018,2019)).

  - But in the simple model, the main source of non-linearity is the ELB (p. 21).

  - The semi-linear model allows for more flexibility in terms of calibration and possible model extensions.

- Alternative parameter values?

  - Steep Philipps curve (equivalent to Calvo parameter of 0.75).

  - Low persistence of preference shocks ($\rho_\xi = 0.6$) relative to estimates (Nakata and Schmidt, 2019)

- Extensions of the model?

  - How would additional backward-looking elements (ie price indexation, habits) change the stabilisation effects?
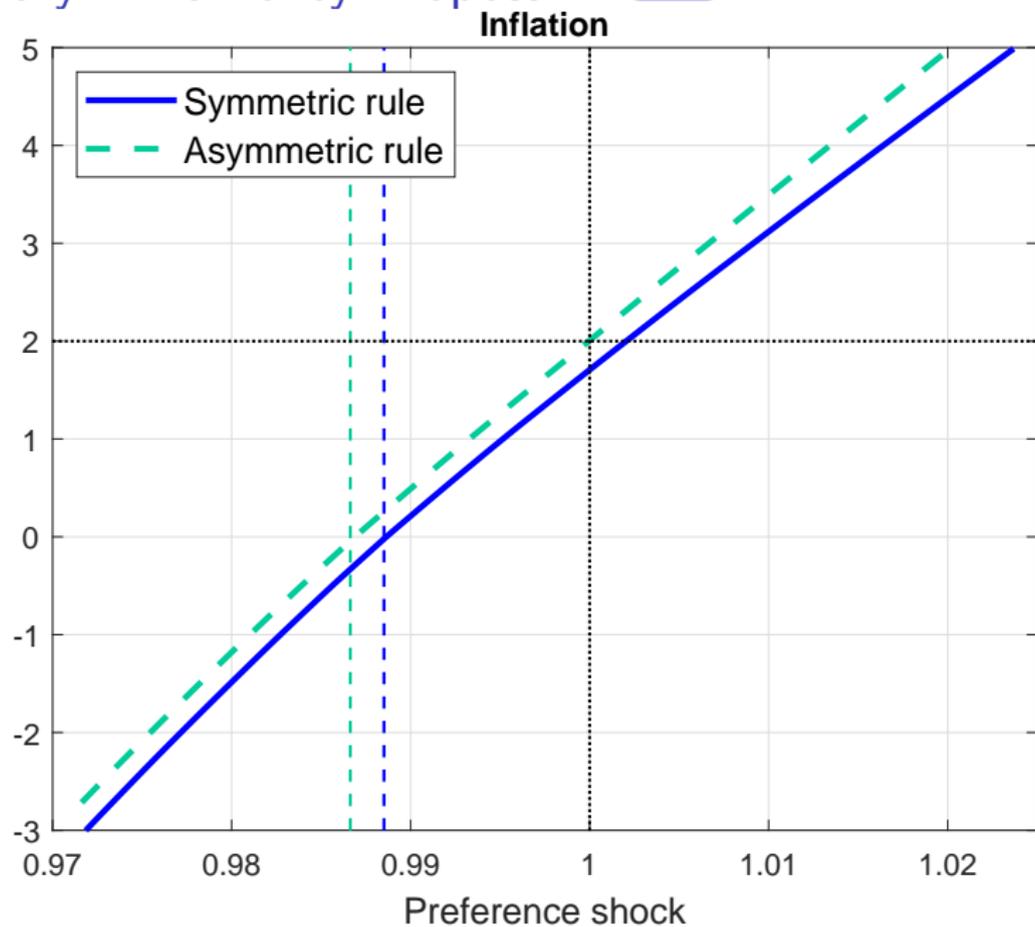
Conclusion

- Very interesting, highly relevant paper, especially in the context of recent monetary policy framework reviews.

- Simple, intuitive and straight forward idea.

- Further analysis on welfare implications of asymmetric rules under different circumstances (eg lower r^*, different target ranges) needed.

Inflation