Discussion: “Average Inflation Targeting: Time Inconsistency and Intentional Ambiguity” by Jia and Wu

Chen Lian

1UC Berkeley and NBER

March 24, 2022
Overview

- Benefit of AIT over IT: the expectations channel
  - Inflation expectations act as automatic stabilizers under AIT
  - Better inflation-output tradeoffs

- AIT is time inconsistent: the central bank wants to
  - announce AIT ex ante (better inflation-output tradeoffs)
  - implement IT ex post (maximize social welfare)

- Two rationales for ambiguous communication about the AIT horizons
  - flexibility
  - credibility
Outline

1 The Essence of the Model

2 My Comments

3 Conclusion
A IT vs I T

- **A IT:** the central bank conducts MP to minimize

\[
\mathbb{L}^c_{t} (L) = \frac{1}{2} \left( \frac{\pi_t + \pi_{t-1} + \cdots + \pi_{t-L+1}}{L} \right)^2 + \lambda^c (L) \hat{y}_t^2 + \beta_{t} E_{t} \left[ \mathbb{L}^c_{t+1} (L) \right]
\]

- **I T:** the central bank conducts MP to minimize the social welfare

\[
\mathbb{L}^{IT}_{t} = \frac{1}{2} (\pi_t^2 + \lambda \hat{y}_t^2) + \beta_{t} E_{t} \left[ \mathbb{L}^{IT}_{t+1} \right]
\]

  - effectively \(\mathbb{L}^c_{t} (1)\)

- Minimize one of the above objectives by picking a point on the NKPC

\[
\pi_t = \beta_{t} E_{t} [\pi_{t+1}] + \kappa \hat{y}_t + u_t
\]
The Benefits of AIT (over IT): The Expectations Channel

- AIT leads to a better trade-off between $\pi_t$ and $\hat{y}_t$.

- **Inflation expectations** act as **automatic stabilizers** under AIT
  - $\pi_t > 0 \implies E_t[\pi_{t+1}] < 0$
  - $\implies$ lowers $\pi_t$ through NKPC
  - $\implies$ less negative output gap $\hat{y}_t$ after cost push shock $u_t > 0$
  - $\implies$ improve inflation-output tradeoffs

- No such a channel under IT
The Time In-consistency of AIT

Key: AIT’s objective function is **different from social welfare**
  ▶ while IT’s objective function is the social welfare

AIT is **time inconsistent**: the central bank wants to
  ▶ **announce AIT ex ante** (better inflation expectations management)
  ▶ **implement IT ex post** (maximize social welfare)
Rationale I for Ambiguous AIT Horizons: Flexibility

- Consider a special case: a one-time cost-push shock at $t$.

- Optimal strategy for the central bank
  - announce the largest feasible horizon $L$ at $t$ (best inflation expectations management)
  - announce horizon $L = 2$ at $t + 1, \cdots$ (maximize social welfare)

- Ambiguous AIT Horizon gives the flexibility to switch between different horizons
Rationale II for Ambiguous AIT Horizons: Credibility

Background: social learning
- Agents have heterogenous beliefs about the AIT horizon
- Agents are randomly selected to meet in pairs.
- When two agents meet, they update their beliefs about AIT horizon by comparing errors
  - switch belief to the one which generates a lower error
- Possibility of random belief mutation (not get stuck)

Using social learning to model credibility
- Central bank announcement can control the agent’s initial belief about the AIT horizon
- But if the central bank actually uses IT, it will gradually lose credibility
- Lose the favorable inflation-output tradeoffs under AIT
Rationale II for ambiguous AIT horizons: Credibility

- Ambiguous communication gives agents a bigger choice set to form beliefs
- **Agents with different AIT beliefs may perform best at different time**
- Fewer agents learn that the central bank actually uses IT
Outline

1 The Essence of the Model

2 My Comments

3 Conclusion
Currently study a special case: a one-time cost-push shock at $t$
  ▶ incentives to switch between different AIT horizons

What about a stationary environment with recurring cost push shocks?

Do the benefits of flexibility come from the ability to maintain credibility?
  ▶ ambiguous horizons $\Rightarrow$ switch between horizons will not lose credibility?
  ▶ can we use the social learning approach above to formalize this?
A standard way to model credibility: **reputation**
- game theory: Milgrom & Roberts (82); Kreps & Wilson (82)
- macro: Barro (86); Backus & Driffill (85); Dovis & Kirpalani (20); Amador & Phelan (21)

Two types of central bank
- Commitment type (C): follows AIT with certain horizons
- No-Commitment type (NC): chooses policy sequentially (deviates to IT)
- agents update their **beliefs about the central bank’s type** given realized outcomes

A good follow-up paper?
- does ambiguity AIT horizons help sustain the central bank’s reputation?
Comments 3: Ambiguous AIT Horizons in ZLBs?

- **The expectations channel** of AIT matter for the AD (the IS curve) in ZLBs
  - $\pi_t < 0 \implies E_t[\pi_{t+1}] > 0$
  - $\implies$ raise aggregate demand $c_t$ through IS
  - $\implies$ alleviate the negative consequence of ZLB

- For this channel, maybe **clarity** of AIT horizons helps?
  - to maximize the expectations channel

- The current draft does not touch communications in ZLBs
Outline

1. The Essence of the Model
2. My Comments
3. Conclusion
Conclusion

- Study an important and policy-relevant question
- Great paper with very clearly explained channels
- Many interesting venues for further explorations