Discussion of

A macroeconomic model of central bank digital currency

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Outline

1. Summary
2. A maturing literature?
3. Taking bank profitability seriously
4. Cross economy calibration
5. Holding limits
6. Economic dynamics and monetary policy transmission

Summary

Questions

- Is CBDC beneficial for economy as a whole?
- How should central banks set CBDC remuneration?
- How does presence of CBDC affect monetary policy and macro dynamics?

Approach questions (as appropriate) with a structural model

- NK calibrated model with a 'realistic' banking sector

Answers

- Yes, CBDC can be beneficial - especially where bank market power is great (cet. par. where r^* high)
- Optimal $i_{CB,t}$ is context specific - but closely approximated by a simple rule
- Little effect on dynamics

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A maturing literature?

Stark frameworks in early papers

- Monopoly bank (Andolfatto 2020)
- Perfect competition (Keister and Sanches 2021)

Whited et al (2022)

- Estimate demand for different asset and liability characteristics
- Synthesize CBDC demand by assuming is a bundle of characteristics
- Banks' mkt power (deposits and loans) implicit in estimated elasticities
- Considers dynamics of bank equity (like this paper) but also wholesale funding options for banks (not in this paper)

Chiu et al (2022)

- Nests (loosely) Andolfatto and K&S in parameterizing deposit market power (though perfect competition in loans) in a new monetarist framework
- $i_{CB,t}$ puts floor under $i_{D,t} \Rightarrow$ crowds-in deposits and expands scale of banks
- Lacks rich dynamic feedbacks to bank equity, and simpler competitive structure than this paper (CBDC and deposits perfect substitutes)

A maturing literature?

This paper doesn't *dominate* Chiu, Whited etc...

- 'Hedonic' Whited approach seems useful in projecting demand for new moneys (including stablecoins etc)
- 'New monetarist' Chiu approach very attractive for fundamental rethinking of our attitude to money

...but pushes the literature along in important dimensions

- Very important to embed CBDC into a carefully calibrated NK model
- Builds on the nice Ulate framework to incorporate market power among banks (AER 2021) and takes bank equity seriously
- Somewhat more realistic quantitative guidance on $i_{CB,t}$

I think they can push it even further

- A good paper but can be even better - take the time to nail it

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Taking bank profitability seriously

One of the strengths relative to Chiu is richer feedbacks via bank profitability

- Trade-off from raising $i_{CB,t}$ - eventually you nuke banks net worth
- Does this lead to more realistic predictions for $i^*_{CB,t}$?
- Would like to see more connection with Chiu - is there a simple calculation that decomposes gaps between his 'ideal' $i_{CB,t}$ and yours

Bank franchise value is a topic that is very important in CBDC policy discussions *and is almost completely unresearched*

- Banks will be PSPs and yet they have competing products?
- Whited considers banks intermediating CBDC usage and obtaining fees, you perhaps should too
- Put more structure on your μ_d and μ_l ('costs' of issuing deposits, loans)

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Cross economy calibration - I

The authors consider introducing CBDC in different 'economies'

- Characterized by different steady state policy rates ($r^* \Leftrightarrow \beta$, essentially)
- *Side note:* In the main paper they don't 'fully' recalibrate, but include a 'full' recalibration in the appendix

Interesting and helps elucidate source of welfare gains (more market power in higher rate environments)

- **But** partly done to get more punchy policy implications
- Makes the interpretation of the r^* exercise somewhat strained
- Still targeting **US economy**

Cross economy calibration - II

I would take the 'different economies' message more seriously - so they actually are different countries (not just different versions of US)

- Instead of varying r^* which is pretty similar (?) across countries, perhaps take seriously different degrees of market power, cash demand (current and projected)
- Would be fascinating to make statements about diverse economies within €Z!

Possible modeling avenue?

- Common money across islands with people constrained to use local banks?
- See Darracq Pariès (2016) for fragmented bank lending conditions in DSGE

Cross economy calibration - III

Don't be trapped in standard monetary policy / macro DSGE questions

- See last week's Piero Cippolone speech at ONB
- Discusses European competitive position w.r.t. US and China
- Interesting debates over how far banking advances (SEPA, PSD3) can be achieved with legislation/regulation of banks
- If they have stalled, does that justify D€?

See also Central Bank of Israel's openness to remunerated CBDC as a correction to competitive distortions in banking sector

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Holding limits

Can you put in limits on CBDC holdings?

- Usually discussed in the context of financial stability concerns
- But *also* interesting for market power, perhaps - especially if it shuts down store of value dimension
- *Effect on solution:* could use extreme polynomial to implement

Related: More detail on quantities - rather than just spreads and pass through sensitivities - would be nice

- Ulate banking model is nice - but hard to interpret n - is this just a convenient flexibile functional form for rate pass through?

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Economic dynamics and monetary policy transmission

Early CBDC work was partly motivated by the idea it could improve policy transmission and strengthen monetary policy

- You find 'nothing' of interest - even in response to monetary policy shocks
- Surprising property of model - or just solution method?
- Might you have more luck with a more 'European' (bank-dependent) calibration (probably also need richer balance sheet channel with non-linearities - different paper...)?
- Could be nice to reopen the negative interest rate debate (especially as Ulate framework was developed for it, absent CBDC)