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A Central Bank Digital Currency in Our Monetary System?

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Overview

Is CBDC relevant for macroeconomic outcomes?

Brunnermeier and Niepelt (2019) give general conditions for irrelevance, discuss violations of these conditions

Böser and Gersbach consider one such violation—due to cb collateral requirement subject to haircuts

Irrelevance

Consider equilibrium with bank money

Does allocation change when cb money (e.g., CBDC) replaces deposits?

Not, when

- Cb refinances banks, and intervention satisfies
- Liquidity neutrality (condition on m-o-p friction)
- Wealth neutrality

Independent of degree of competition, liquidity differences between monies, heterogeneity, stochasticity, ...

Irrelevance

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This Paper—Three Period Model

1. Banks create deposits, fund firms purchasing capital from hhs

2. Hhs exchange deposits into CBDC (by asspt)

Cb refinances banks against loan collateral, subject to haircut

If haircut is large banks lack funding, go bankrupt ...

...because noone purchases loans from banks (by asspt)

3. Bankruptcy costs reduce consumption (not investment)

This Paper—Comments

Default risk

- Firms face idiosyncratic risk, so do non-diversified banks
- ▷ Seems orthogonal to question of interest

Households are passive, do not optimize

- No transactions motive, exogenous portfolio choice
- ▷ If given a choice, hhs would only hold CBDC since cb absorbs default losses (by asspt) while banks don't

Government budget constraint

- Not modeled but key for (missing) wealth effects of cb losses
- ▷ Cb cannot shield private sector from default losses
- ▷ Partial equilibrium models of “money” (e.g. Diamond and Dybvig, 1983) inadequate in macro

Optimal policy

- No reason for cb to apply haircut
- ▷ Irrelevance of CBDC under optimal policy

Imperfect substitutability deposits, CBDC (sections 4, 5)

- Deposit-CBDC tradeoff modeled as CES return composite in budget constraint
 - ▷ Nonlinear budget—dubious
 - ▷ Imp subst relates to m-o-p function (cf. liquidity neutrality)

Not a model of CBDC but a model of any cb money

- ▷ Story applies equally to cash

Conclusion

Irrelevance of CBDC with cb refinancing, liquidity neutrality, wealth neutrality (Brunnermeier and Niepelt, 2019)

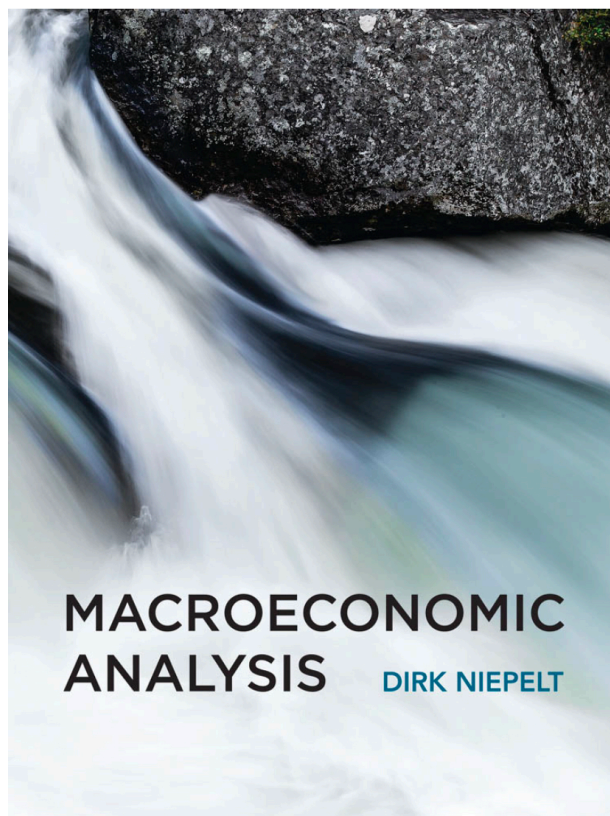
⇒ Relevance of CBDC with

- Refinancing friction (Böser and Gersbach, 2019)
- Differential usefulness of deposits, CBDC as mop (NN)
- Redistribution (Andolfatto, 2019)
 - Politics (Niepelt, 2020)

Refinancing friction seems plausible

To judge relevance, need to endogenize friction, policy

Macroeconomic Analysis



www.niepelt.ch/book

MIT Press, *forthcoming*

For MA and beginning PhD

Endorsements

F Alvarez

G-M Angeletos

M Brunnermeier

J Galí

R Reis

T Sargent

G Violante

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References

- Brunnermeier, M. K. and Niepelt, D. (2019), 'On the equivalence of private and public money', *Journal of Monetary Economics* **106**, 27–41.
- Diamond, D. W. and Dybvig, P. H. (1983), 'Bank runs, deposit insurance, and liquidity', *Journal of Political Economy* **91**(3), 401–419.
- Niepelt, D. (2020), 'Reserves for all? Central Bank Digital Currency, deposits, and their (non)-equivalence', *International Journal of Central Banking* (**forthcoming**).