

Discussion of
**Central Bank Reserves and the Balance Sheet of
Banks**

by

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Paper Outline

- Monetary extension of a real model by the same authors
- Continuous-time, infinite horizon model
- Introduce commercial banks and a central bank
- Focus on interest-bearing reserves at the central bank: hot topic in Switzerland!
- Interesting dynamic model

Basic Strategy

- Analyze the dynamic system
- Stationary solutions may not exist or tend to be unstable
- Stable solutions with a time-varying and binding reserve requirement
- Examine fiscal and monetary policies that give dynamic stability
- Possible to have zero interest rate on reserves, by decreasing taxes on banks and increasing them on households
 - Otherwise the economy is unstable

Intuition

- Aggregate balance sheet of banks:

$p_t A_t$	M_t
R_t	E_t

- M_t = household wealth: slow-moving variable
- E_t = bankers wealth: slow-moving variable
- $p_t A_t$ = capital: slow-moving variable
- The difference $p_t A_t - M_t - E_t$ is slow moving and typically will not converge to the level of reserves R_t
- Solution: set $R_t = M_t + E_t - p_t A_t$
 - But parameters must be such that $R_t \geq 0$. Not always a solution
- More technically define $x_t = \frac{p_t A_t}{E_t}$ and $h_t = \frac{M_t}{E_t}$. These two state variables drive the dynamic system

Basic Comment

- Unconventional model with many special assumptions
- Motivation? Why not start from a more standard model?
- What are the benefits of adopting this unconventional model?
- There are costs to that:
 - More difficult to understand what is going on
 - Difficult to evaluate the role of various assumptions and the robustness of the results

Comment 1

- Stationary solutions may not exist
- What does it mean (economically)?
- For example, one condition is the tax rate on bankers wealth is higher than on household wealth
- Would be useful to clarify when there is no solution and why

Comment 2

- Since dynamic stability is key, how sensitive is it to various assumptions?
- For example, production function is assumed to be linear and utility is log
- What would happen with concave production function and non-log utility?
 - Would it be easier to have stability?
 - Would policy implications be different?

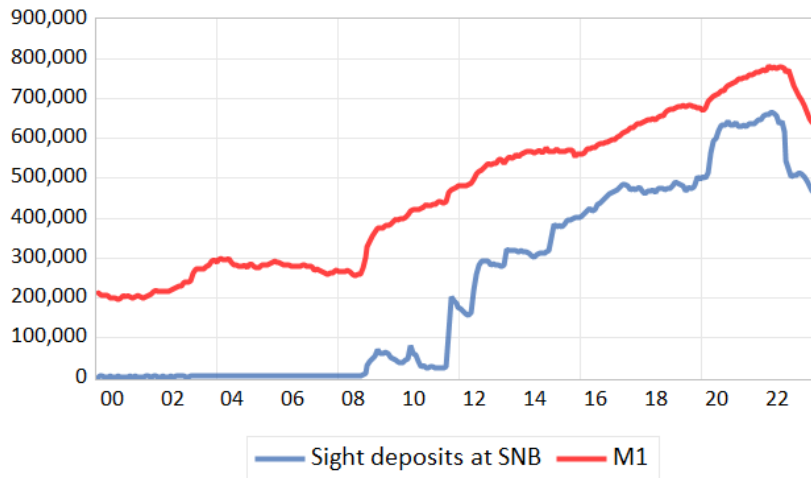
Comment 3

- Monetary policy is also very unconventional in the model. Makes difficult to relate to the real world
- Reserves requirement is endogenous and changes continuously: not really a policy variable
- Monetary policy is conducted by setting the interest rate on reserves
- Setting a zero interest rate on reserves is also a change in monetary policy

Comment 4

- What about the ZLB?
- Households only save in bank deposits. No bonds in the model => no portfolio reallocation and no liquidity trap
- Banks could also hold bonds
- Model cannot explain increase in reserves at ZLB and drastic change in money multiplier
- Having bonds in the model would allow to have a policy rate that is different from the rate on reserves
- Extension with bonds is considered in the Appendix, but these issues do not appear to be addressed

Reserves and Money in Switzerland



Comment 5

- The wording on banks is confusing and is not related to equations of the model
- *banks can create new deposits to acquire more goods at any time, which represents the banks' privilege to create money "out of thin air"*
- *the amount of deposits ... are exogenous to bank l since there are deposits received from other banks in the payment process.*
- Where do we see this in the equations of the model?
- In equilibrium, aggregate deposits are given by household wealth H_t

Conclusion

- The role of reserves at the central bank and their remuneration is important
- The model is interesting, but very special
- There are costs and benefits of using an unconventional model
- I have outlined some of the costs
- The authors should convince us of the benefits of using their model