

Discussion

# Cryptocurrencies, Currency Competition, and the Impossible Trinity

Benigno, Schilling and Uhlig (2019)

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OeNB, October 2019

# Overview

The model (deterministic version):

- Two countries,  $h$  and  $f$
- Two bonds, with interest rates  $i_t$  and  $i_t^*$
- Two 'traditional' local currencies: currency  $h$  ( $f$ ) means of payment in country  $h$  ( $f$ ) only
- Global currency ( $g$ ): means of payment in both countries (equivalent to local currency in terms of liquidity services  $L$ )
- Exchange rates:
  - Between domestic and foreign currency:  $S_t$  ( $S_t DC = 1 FC$ )
  - Between domestic and global currency:  $Q_t$  ( $Q_t DC = 1 GC$ )
  - Between foreign and global currency:  $Q_t^*$  ( $Q_t^* FC = 1 GC$ )

## Overview

If capital markets are perfect and all currencies/bonds traded/used:

$$1 + i_t = (1 + i_t^*) \frac{S_{t+1}}{S_t}, \quad (1)$$

$$Q_t = S_t Q_t^*, \quad (2)$$

$$\frac{1}{1 + i_t} = \mathcal{M}_{t+1}, \quad \frac{1}{1 + i_t^*} = \mathcal{M}_{t+1}^*, \quad (3)$$

$$L_t = 1 - \mathcal{M}_{t+1}, \quad L_t^* = 1 - \mathcal{M}_{t+1}^*, \quad (4)$$

$$L_t = 1 - \mathcal{M}_{t+1} \frac{Q_{t+1}}{Q_t}, \quad L_t^* = 1 - \mathcal{M}_{t+1}^* \frac{Q_{t+1}^*}{Q_t^*} \quad (5)$$

$$Q_{t+1} = Q_t, \quad Q_{t+1}^* = Q_t^*. \quad (6)$$

If e.g.  $L_t < 1 - \frac{1}{1+i_t} \frac{Q_{t+1}}{Q_t}$ , global currency not used in  $h$

# Crypto-enforced MP Synchronization

An immediate consequence of

$$1 + i_t = (1 + i_t^*) \frac{S_{t+1}}{S_t}, \quad Q_t = S_t Q_t^*, \quad Q_{t+1} = Q_t, \quad Q_{t+1}^* = Q_t^*$$

is that

$$\begin{aligned} S_{t+1} &= S_t, \\ i_t &= i_t^*. \end{aligned}$$

→ '*Crypto-enforced Monetary Policy Synchronization*' ! (???)

- If all three currencies ( $h$ ,  $f$ ,  $g$ ) are used, nominal interest rates in  $h$  and  $f$  must be identical
- If nominal interest rates in  $h$  and  $f$  are not identical, not all three currencies can be used at the same time

## Regaining MP Independence

- Authors argue that monetary policy independence can be regained, but only by setting  $i_t < i_t^*$   
→ global currency no longer used in domestic economy
- '*(...) a rat race between the two central banks may the eventually force both to stick at the zero lower bound forever (...)*'(p.16)
- Not an appealing perspective indeed! But how likely is it?
- Global currency not used in country  $h$  if

$$L_t = 1 - \frac{1}{1 + i_t} < 1 - \frac{1}{1 + i_t} \frac{Q_{t+1}}{Q_t} \quad \Leftrightarrow Q_{t+1} < Q_t \quad (7)$$

- In fact, when  $Q_{t+1} < Q_t$  and  $Q_{t+1}^* < Q_t^*$ , global currency not used in any country  
→ global currency is extremely prone to self-fulfilling crises!

# Asset-Backed Global Currencies (LIBRA?)

- Crisis risk could be tamed by asset-backed global currencies
- Assume that the issuer of the GC
  - invests proceeds of newly created GC in safe bonds ( $h$ );
  - collects a fee  $\phi_t$  on stock of GC (management fee or profits for shareholders; no add. profits);
  - promises to trade unlimited quantities at prices  $Q_t$  (and  $Q_{t+1}$ )
- Then

$$Q_{t+1} = (1 + i_t - \phi_t)Q_t \quad (8)$$

- If  $\phi_t \leq i_t$ , then  $Q_{t+1} \geq Q_t \rightarrow$  (only) global currency is used in country  $h$
- Potential for another rate race  $i_t \rightarrow 0$   
*'Libra may push central banks back to the zero lower bound' (p.21)*
- But then  $\phi_t = 0$  ! Why would private company issue global currency?

## Concluding Remarks

- Paper provides some useful insights into the effects a global currency could have on monetary policy makers
- Simple model, strong (and worrisome) predictions
- Maybe too simple to study the effects of GC a la LIBRA ?!?!
  - 'Worrisome' predictions driven by corner solutions (an  $\varepsilon$ -increase in  $i_t$  enough to drive domestic currency out of domestic market)
  - Leaves out the question why a private company should provide GC (and whether this would be worthwhile in the zero-lower-bound environment the model predicts)
  - No (interest-bearing) chequeable deposits
  - Asset-backed GC only backed by domestic assets; when both  $h$  and  $f$  assets are used to back GC, unclear whether self-fulfilling crises can be ruled out