"The Coming Battle of Digital Currencies" by William Cong and Simon Mayer

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ABFER

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- Central banks are reacting by introducing their own digital currencies.

Model and Findings

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- Cryptocurrencies hurt stronger fiat currencies
- ...but benefit weaker currencies by reducing competition from stronger one.
- Countries with stronger but not dominant currencies have more incentive to strategically implement CBDCs in response to competition of other crypto or government currency.

Model of competition between two (fiat) moneys

- At time t, one unit of good can be invested in two moneys

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$$C_{t+1} + v\left(\frac{M_t}{P_t}\right) + v^*\left(\frac{M_t^*}{P_t^*}\right)$$

$$C_{t+1} = \frac{M_t}{P_{t+1}} + \frac{M_t^*}{P_{t+1}^*}$$

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- Optimal demand of M_t and M_t^* is

$$\frac{\lambda_t}{P_t} = \frac{1}{P_t} v_m \left(\frac{M_t}{P_t} \right) + \frac{1}{P_{t+1}}$$

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- When $v_m = v_{m^*} = 0$ then the two currencies compete if inflation rates are the same. When inflation is higher in country H domestic money is not used.

Results

- Consider the case $v_{m^*} = 0$ then

$$v_m \left(\frac{M_t}{P_t} \right) + \frac{P_t}{P_{t+1}} = \frac{P_t^*}{P_{t+1}^*}$$

therefore

$$\frac{P_t^*}{P_{t+1}^*} - \frac{P_t}{P_{t+1}} = v_m \left(\frac{M_t}{P_t} \right) > 0$$

implying that $P_{t+1}^*/P_t^* < P_{t+1}/P_t$.

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- Why would denomination of trade in one currency versus the other change the above relation?
- The paper introduces the parameters π and π^* to capture the linkage between fiscal strength and currency? What is fiscal strength?

How is the indeterminacy of the exchange rate solved?

- Indeterminacy of prices:

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- Therefore real money balances are also not determined

$$\frac{M_t}{P_t}? \qquad \frac{M_t^*}{P_t^*}?$$

Adding a crypto currency

- At time t, one unit of good can be invested in three moneys

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home currency will be used only if there is a deflation
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- Is this harmful for currencies? What is the meaning of "harmful" here?

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