

Discussion of:

Digital Economy, Stablecoins and the Global Financial System

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Conference on “Payments in a Fragmenting World”

October 8, 2026

The views expressed here are those of the author and do not necessarily reflect the position of the Federal Reserve Bank of New York or the Federal Reserve System.

Motivation

- ▶ The “digital economy” may grow rapidly in the years ahead
 - ▶ definition: services facilitated by blockchain or DL technology
- ▶ Raises a number of interesting questions:
 - ▶ example: how will the interest rate on U.S. Treasuries be affected?
 - ▶ many others (effect on exchange rates, capital flows, the role of the US\$, etc.)
- ▶ Want to address these questions using a macroeconomic model
- ▶ But ... what is the “digital economy” in the context of an economic model?
 - ▶ answer is not so obvious; can imagine different approaches
 - ▶ this paper offers a new and interesting approach

A macro model

- ▶ Start from a Bewley economy with Lucas trees
 - ▶ many households, single consumption good (apples)
 - ▶ capital is in fixed supply; directly produces output
 - ▶ households face idiosyncratic, uninsurable risk (the output of their trees)
 - ▶ government issues bonds, has lump-sum taxes
 - ▶ Ricardian equivalence holds (perhaps not obvious, but true)
- ▶ Key point: uninsurable risk $\Rightarrow$ low real interest rate
 - ▶ note: a risk-free investment technology would be very useful (but does not exist)

Q: How should we think about stablecoins and the digital economy in this setup?

Means of payment (1)

- ▶ One approach: focus on stablecoins as a means of payment
- ▶ Add monetary exchange to the model (bilateral meetings, CIA, etc.)
 - ▶ need to specify how money is created, what assets back it (if any)
- ▶ Introduce stablecoins as a new, competing form of money
 - ▶ created by different entities, backed by different assets
 - ▶ may (or may not) change the equilibrium allocation
- ▶ Much of the literature on CBDC takes this approach; some on stablecoins, too
- ▶ But ... there is nothing really “digital” here

Means of payment (2)

- ▶ Alternative: the digital economy makes new types of exchange possible
- ▶ Add a second consumption good ("digital services")
 - ▶ output is divided between traditional and digital consumption (apples and oranges)
 - ▶ digital consumption must be purchased with digital money (oranges trade on blockchain)
- ▶ Now the digital economy is facilitating new economic activity
 - ▶ allows trades that were otherwise infeasible or too costly $\Rightarrow$ raises welfare
- ▶ Could be extended to include foreign demand for stablecoins as a store of value
 - ▶ and study the effect on equilibrium interest rates, etc.
- ▶ But ... still seems to be missing features of the digital economy?

This paper

- ▶ Start from the two-good model
 - ▶ the “traditional” economy can produce both types of goods, but ...
- ▶ Add a second, “digital” economy
- ▶ New set of households, new set of trees (“crypto assets”)
 - ▶ these trees only produce digital consumption (oranges)
 - ▶ and output is proportional to their market price (story: Ethereum and staking)
- ▶ Assume: stablecoins are needed for this production process
 - ▶ must be held in proportion to the quantity of output produced (SIA in production)
 - ▶ and must be fully backed by govt bonds from the traditional economy

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- ▶ Emphasize: stablecoins are not used to *purchase* digital goods here
 - ▶ instead, they are used in the *production* of digital goods
 - ▶ interpretation: used as collateral in smart contracts that enable particular trades
 - ▶ Segmented asset markets: agents cannot trade trees across economies
 - ▶ but they can borrow and lend (i.e., trade a risk-free bond)
 - ▶ in equilibrium, trad. economy households buy bonds issued by the digital economy
 - ▶ only some traditional households can buy digital goods and digital bonds
 - ▶ Growth of the digital economy:
 - ▶ fraction of traditional households that interact with the digital economy increases over time (to 20% in steady state)
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Results: what happens to the interest rate?

- ▶ Competing effects:
 - ▶ the digital economy **lends to** the traditional economy as part of the production process
 - ▶ demand for stablecoins tends to push the interest rate on govt bonds *down*
 - ▶ the digital economy **borrow from** the traditional economy to finance its capital
 - ▶ competition from digital bonds tends to push the interest rate *up*
- ▶ Either effect can dominate
- ▶ In the calibrated model:
 - ▶ interest rate initially decreases (the first effect)
 - ▶ but is higher in the steady state (counterintuitive; the second effect)

Comments

- ▶ Paper pushes us to think about stablecoins in a broader context
 - ▶ not just a new form of money; an element of digital finance or the digital economy
 - ▶ need to study the effects of stablecoins in this broader context
 - ▶ thinking this way seems very useful, promising
- ▶ Two comments:
 - ▶ understanding the mechanism
 - ▶ why stablecoins?

1) Understanding the mechanism

- ▶ Why do traditional households lend to the digital economy?
 - ▶ in principle, the flow of saving could go either way
- ▶ Recall: idiosyncratic risk makes a risk-free saving instrument valuable
 - ▶ government bonds don't solve this problem because they are not net wealth
 - ▶ debt issued by the other (digital) economy *is* net wealth for traditional households
 - ▶ makes their portfolio less risky ($\Rightarrow$ smaller risk premium; higher risk-free rate)
- ▶ But there is also a technological component
 - ▶ borrowing allows digital households to lever up $\rightarrow$ increases demand for digital trees
 - ▶ supply is fixed, so the price increases ...
 - ▶ ... which increases the (real) output of these trees (!)

Q1: How important is this second component?

- ▶ is it critical for the counterintuitive interest rate results?

Q2: How should we interpret the asymmetry?

- ▶ if demand to invest in the traditional economy increases → output is unchanged
- ▶ if demand to invest in the digital economy increases → output increases
- ▶ Does this capture a fundamental difference between trad. and digital economies?
 - ▶ if so, how should we interpret it?

2) Why stablecoins?

- ▶ Model: stablecoins backed by govt bonds are needed to produce digital goods
- ▶ Why?
 - ▶ in principle, stablecoins could be backed primarily by bank deposits (MiCA in Europe)
 - ▶ also: tokenized bank deposits or private debt might serve this purpose?
 - ▶ in the model, digital good producers are issuing safe debt
 - ▶ why can't stablecoins be backed by this digital debt? (would that be equivalent?)
- ▶ Looking ahead: could we start at a more basic level?
 - ▶ what fundamental "input" does the digital economy need from the traditional economy?
 - ▶ and what would be the efficient way to provide it?

More broadly:

- ▶ Which model features are *fundamental* to the digital economy ...
 - ▶ represent technologies, preferences, etc.
- ▶ ... and which represent current practice/arrangements that may change?
- ▶ Value of the approach here: focus is on the (broad) digital economy
 - ▶ rather than (only) on stablecoins
- ▶ Could future work start from deeper frictions in this type of digital economy?
 - ▶ see what the equilibrium outcome is: stablecoins or something else

Bottom line: Interesting and thought-provoking paper!
