

Comments on  
“The Implications of Digital  
Currencies for Monetary Policy  
and the International Monetary  
System”

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# Much that is good, little that is not

... and some that is irrelevant (to the topic)

Agree wholeheartedly with the main conclusion:

- No immediate effects on monetary policy and/or international monetary system
  - Exception: loosening of capital controls

Disagree (mildly) about long-run

- Uncertainty overstated

Caveat: hard to have clarity in slides!

# What I like most

Digital Currency has *Potential* for Increase in Capital Mobility

- Lowered costs of currency substitution
- Could have worked harder on implications (e.g., through Mundell's Trilemma)
- More importantly: how important is this effect?
  - Crypto currencies are small compared to current capital flows
  - Currency substitutes already exist (foreign currencies), as Engel points out
    - Most foreign currencies inconvertible/small and hence irrelevant ... just like most cryptocurrencies
    - Introduction of a cryptocurrency similar to entry of a new country with its own currency
      - How much of an effect have South Sudan, Kosovo, and Montenegro had on capital mobility?
    - How different are cryptocurrencies?
- Seems reasonable that the choice between fixing and monetary sovereignty will slowly become sharper
  - But little GDP in countries that fix ... so little relevance

# Worth remembering

- Most Money is *already* digital/electronic
  - Most of American M2, half of M1 *de jure*, more in practice (\$100 bills are US)
  - Credit cards, reserves, ...
  - Substitution of cash with electronic money ... not a big thing historically
    - Money has evolved continuously for decades (gold ... notes ... cheques ... credit cards ...)
    - My FX acquisition; direct → traveler's checks → credit cards → ATM card → Apple Pay
      - Recent transition from “no cash trip” to “no credit card trip”
- But these technologies have not compromised effectiveness of monetary policy!

# Size: How big is cryptocurrency?

## *Small*

- *All* (>2000) cryptocurrencies at market value (Oct 11, 2018): \$202b
  - About half in Bitcoin (and 35 variants)
  - 10% in Ethereum (and 24 variants)
- *Very* small compared to relevant benchmarks
  - <4% of *daily* FX turnover, capital flows (BIS: \$5.1t, April 2016)
  - Stock of notes and coins (transactions)
    - <13% of US Federal Reserve currency (\$1.6t in circulation, Sept 2018)
    - <2% of Worldwide currency (\$8t)

# Compared to money (M1)?

## *Crypto insignificant*

- *To repeat: All (>2000) cryptocurrencies ≈ \$202b*
- US M1 currently \$3.7t (18x)
  - M2 \$14.2t (70x)
  - Crypto currently around size of Danish M1 (26<sup>th</sup> largest national money supply)
- Denmark interesting for gauging currency substitution effect
  - July 2012, short interest rates: Euro (.5%); Norway (2.2%); Sweden (1.1%)
  - But Denmark still introduced negative nominal interest rates without problems!
  - So currency substitution effects likely *small*
- These are stocks. But *even smaller* in flow/transaction terms (crypto transactions primitive)

# How money is crypto?

- Need clear taxonomy on different types of digital currencies
  - Engel: private vs central bank cryptocurrencies
- Private cryptocurrency *isn't currently money*
  - Doesn't satisfy any roles:
    1. Medium of exchange
    2. Unit of account
    3. Store of value
- Unlike currencies, even of inflationary developing countries!

# Difficult to see how crypto could, *in principle*, evolve into money

- Could private, digital, crypto (enabling peer-to-peer transactions) eventually become *money*?
- Far from it now!
  - Money is a social institution
  - Historically, currencies are successful with stable value and large user network
  - Crypto *WAY* short of that now, for *intrinsic reasons*
    - *Volatility* stems from inelastic supply (also unstable demand)
    - This instability precludes use as either unit of account or store of value
    - High transactions costs also limit network size, use as medium of exchange
    - Private crypto has no extrinsic backing or possibility of coercion
  - So currently a speculative asset (not money) and will remain so



# Which leads to inelastic supply of crypto

- Little direct confrontation of issue posed in title
  - Part of Bitcoin idea was to limit inflation via formulaic growth
  - Preclusion of discretionary policy might be inseparable from idea of crypto currencies
    - Inelastic supply big part of appeal to libertarians
    - Built into Bitcoin
      - Potentially modifiable with widespread consensus
      - Not part of all cryptocurrencies (*many* Bitcoin splinters ... Basis ...)
      - But most cryptos are failures

# Discretionary monetary policy *key* to titular issue!

- Could *decentralized* (private) cryptocurrencies be designed with monetary policies that include feedback or even discretion?
  - Need to if want to substitute for Central Bank roles:
    1. Avoid inflation/deflation (“Cross of Crypto”)
    2. Provide counter-cyclic monetary policy
    3. Act as lender of last resort in crises, support financial stability
  - A future of algorithmic central banking?

Can we write *complete* rules for monetary policy?

Could we eliminate *all* discretion? (Would we?)

- If so, can write central bank reaction function into mining rules
- But if we could, why do we still have central bankers?
- Knightian uncertainty: we're a long way from this knowledge!
  - Hard to believe we will *ever* be there

# But even ignoring all this ...

- Why should *any* form of **money** matter, even in principle?
  - Indeed, why should the stock of money matter?
  - Central banks use prices/interest rates, not money supplies/growth
- *Highly* relevant in this context because cash does create effective lower bound on nominal interest rates
  - So digital currency facilitates negative nominal interest rates, more counter-cyclic monetary policy
  - Can reduce exchange rate/currency war issues associated with ZLB/ELB (Caballero, Farhi and Gourinchas)
  - More analysis here warranted

# Which leads to central bank digital currency

## Modern Central Bank could issue e-currency

- Not (private) cryptocurrency, merely another digital form of money
- *Could* lower costs, increase access to money
- But without offering anonymity of private cryptocurrency

# Most issues are micro, not macro

- Technical problems in providing fast transactions, prevent hacking
- Do central banks want money launderers and bad consumers to deposit directly, encouraging illicit behavior?
- How much does digital money *per se* facilitate settlement, esp. international?
- Does central bank have an obligation to provide public with access to risk-free central bank money like currency *if latter fails market test?*

# But some are ...

Suppose anyone could deposit directly with central bank

- Small Pro: (even) easier to have negative interest rates
  - Easier to handle business cycles, avoid de/inflation with time-varying/low real rates
  - But ... doesn't require central bank deposits for all: just less cash, more commercial bank digital money (Rogoff)
- Big Con: bad for commercial banks
  - Central Bank Digital Currency: totally safe
  - So raises risk and spreads for commercial banks, reduces private credit, monitoring
  - Commercial banks already squawking about negative nominal interest rates
- Agree with Engel: tradeoff likely to seem bad for society

# But even if central bank issues digital money

- Central bank still controls central bank deposits
  - No obvious negative effect on ability to conduct monetary policy
  - Keeps ability to control monetary policy for cyclic, counter-in/deflationary reasons
  - Seigniorage retained (small)



# Will central banks ever surrender monopoly on money creation?

- If central bank is NOT monopoly supplier of reserves, it loses its ability to control interest rates and carry out monetary policy
  - If central bank does not control unit of account, its monetary policy becomes irrelevant (think of dollarized economies)
  - Seems unlikely for almost any central bank (Venezuela)
- Society wouldn't *allow* central banks to lose power
  - Social contract: central bank power and independence to create stable money in return for trust-generating accountability
    - Checks and balances required for durable institutions like money

# Conclusion

- Seems like private cryptocurrency may *eventually* facilitate some transactions
  - Will enhance capital mobility *a little*
    - *A little* more pressure on fixers
  - Unlikely to change monetary policy
- An analogy
  - Transition from paper airline tickets to electronic tickets



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