

Cryptocurrencies don't make sense

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From

- “Cryptocurrencies: Policy, economics and fairness”, Systemic Risk Centre discussion paper 86
- “Cryptocurrencies don’t make sense”, VoxEU.org
- Slides are on modelsandrisk.org/cryptocurrencies

Old school money

- Gold
- *Fiat*, from the latin “let it be done”
 - money created by the central banks out of thin air
 - whose value is guaranteed by the state
- Scrip/e-money
 - privately issued money
 - can have one-to-one value mapping to fiat

Forms of fiat money

- *Fractional reserve* system
- Central banks create the *monetary base*
 - CB reserve account + physical money
 - in Eurozone €3.2 trillion
- Money in circulation
 - M1** amount of physical money in circulation plus demand deposits (€8.1 trillion)
 - M2** + savings deposits (€11.1 trillion)
 - M3** + large time deposits, institutional money market funds, short-term repurchases and other liquid assets (€12.0 trillion)

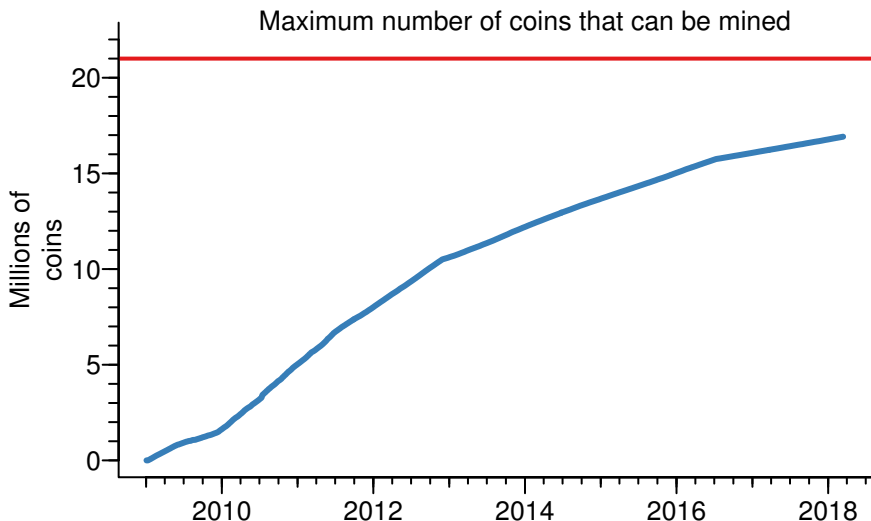
Cryptocurrencies

- 21st century replacement for fiat
- A large number of different cryptos, *Bitcoin* most common
- Units of money are called *coin*
- Main differences between crypto and base fiat money are money creation and ownership
 - Fiat** physical printing or arbitrary increases in reserve balances. Owned by state
 - Crypto** an algorithm generates new coins. Owned by private entities

Bitcoin

- New coins created by *algorithm* using cryptography — *mining*
- Mining has two purposes:
 - a. limit the creation of new coins
 - b. verify new transactions and prevent malicious changes to existing transactions
- Mining progressively harder and harder
- Theoretical upper limit 21 million coins. Year 2140
- To date, 17 million Bitcoins mined

Bitcoin supply, 2009-2018



Why cryptocurrencies?

- a. Elegant technology
- b. Macrohedge
- c. We can not trust the government with money
- d. Freedom
- e. A lot of money to be made

Issues

- Not addressed here
 - a. market manipulation and fraud
 - b. environmental impact
 - c. Central Bank digital currencies
 - d. blockchain
 - e. smart contracts
- Discussed below
 - f. monetary stability
 - g. financial stability
 - h. (in)equality, fairness and social stability

Can fiat money and cryptocurrencies coexist

- Conceivable, but not yet tested
- Until now, cryptos are mostly held for investment/speculative reasons
- Almost never used for transactions (or anything else), except things illegal
- That might change, perhaps
 - CBs might start hold cryptocurrencies as reserves
 - Amazon could accept cryptocurrencies for payments
 - we might begin to earn our salaries in cryptos

The power of the incumbent fiat money

- Embedded in employment contracts and mortgages and lending and every aspect of the economy
- Few would like to earn their salaries in dollars, pay rent in Bitcoin, buy groceries with Ethereum and compensate the hairdresser in Ripple
- We want to use a single currency, one that provides price predictability and ease of transactions
- Know how large the monthly mortgage payment is, and will be, as a fraction of salary

Edge cases

- Live off the grid
- Transactions (especially international)
 - transactions using fiat money are much cheaper, secure and faster than with any of the cryptocurrencies
- The unbanked and bad currencies
 - Fintec and dollarization better
- Macrohedge
 - discussed below

Macrohedge

- Hedge against poor government policies
 - QE, political risk, macroprudential risk, and expropriation risk
- All of these threats are real
 - 20% decline in the purchasing power of the dollar over the past ten years
- The government has confiscated assets like gold. For example, in 1933 US
- Cryptocurrencies, at least those on a visible blockchain, are even easier to confiscate
- And in expectation underperform other macrohedges
 - like gold, property, land, and art

Suppose success

- What might happen *if* cryptocurrencies become successful

Financial policy

- Monetary policy
- Financial stability

Monetary policy

- Velocity matters

$$P = \frac{V \times M}{Q}$$

- Slow mining will result in persistent deflation
- Rapid mining will be inflationary
- Neither are necessarily costly
- Under fiat, the CB can set a target (e.g. 2% a year inflation) to get stability
- Not possible (or acceptable) under cryptos
- So a crypto monetary system would have more price volatility than a *well managed* fiat system
- And opposite if fiat is badly managed

Money creation

- Fiat creates M1, M2, M3
- A transaction with a Bitcoin takes place on the blockchain, so no money created
- But, if we lend coins (inevitable) and these claims are traded (inevitable)
 - bilaterally and/or via financial institutions
- Then crypto M1, M2 and M3 is created
- We will also get crypto derivatives
- Crypto M1 is a *claim on coin*

Crises

- The forces of crises are the same regardless of the monetary system
- Crises are inevitable
- Under gold, higher forms of money converted into gold
- Under fiat seek most liquid and safest forms of money (ideally central bank reserves)
- Under crypto, transform crypto M1/M2/M3 into coins and unwind derivatives
 - and uniquely to cryptos, we will doubt the veracity of M1/M2/M3/derivates
 - *additional cryptospecific crisis channel*

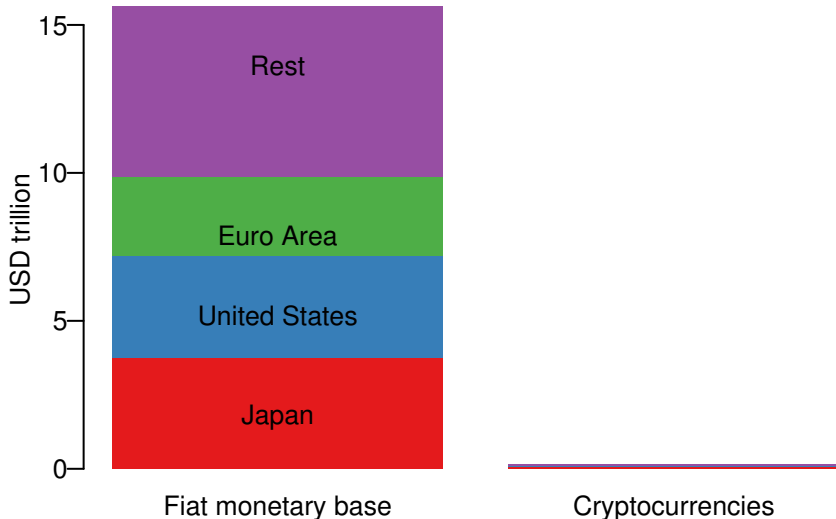
Resolution

- Fiat has a *safety valve*
 - CB can create money
- Cryptos do not
 - while conceivable that an algorithm for coin creation could do that, it would be seen as unacceptable by the crypto community

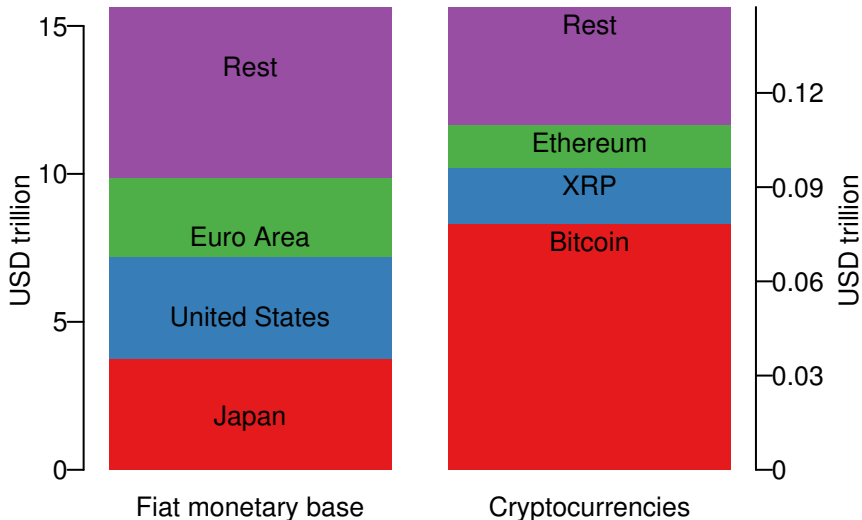
Implications for monetary and financial stability

- A crypto monetary system would have more
 - a. price volatility
 - b. and systemic risk
- Than a well managed fiat system
- And opposite for a badly managed fiat system

The value proposition (November 22)



The value proposition (November 22)



Hopes of a 10,000% return

- On November 22 crypto market cap was \$150 billion
- Global base money is \$15 trillion (2016)
- The hope is that base money is replaced with cryptos
- I don't think they can coexist, so
- A risk neutral investor gives success a 1% chance
- Of getting a 10,000% return

Fairness

- \$15 trillion of a public good transferred to a hand full of cryptospeculators
- US GDP is \$19 trillion and China's \$12 trillion
- Dwarfs
 - Inclosure Acts in England and Wales
 - Highland Clearances in Scotland
 - confiscation of Native American and Aboriginal land
 - Russian and Chinese privatizations
- Sovereign decides but
- I buy Bitcoin at my own volition today but
- Any large scale displacement requires sovereign to acquiesce

Inequality and social cohesion

- The number of cryptospeculators is small, so inequality would worsen
- We know that persistent deflation leads to social strife
 - from Gold standard experience
- Increased price and financial instability will do the same
 - e.g. experience from 2008 and 1930s
- So with cryptosuccess can expect more social unrest and support for populist parties

Conclusion

- There is no economic need for cryptocurrencies
- Their success would
- Increase price and financial instability
- And exasperate inequality and erode social cohesion
- In addition to the environmental, fraud and manipulation issues

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