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 and base fiat money are money creation and ownership

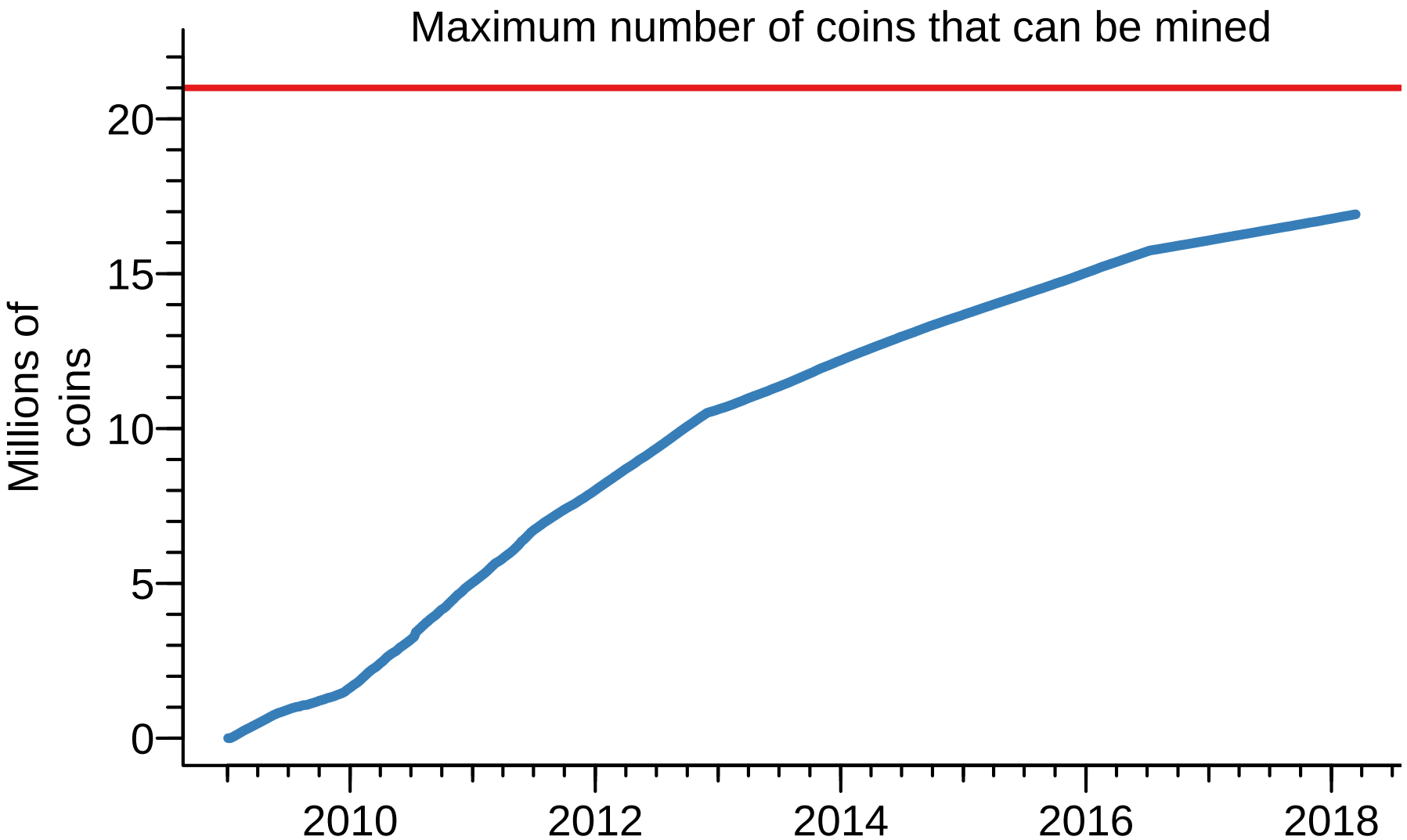
Fiat physical printing or arbitrary increases in reserve balances. Owned by state

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 cryptoscurrencies 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*

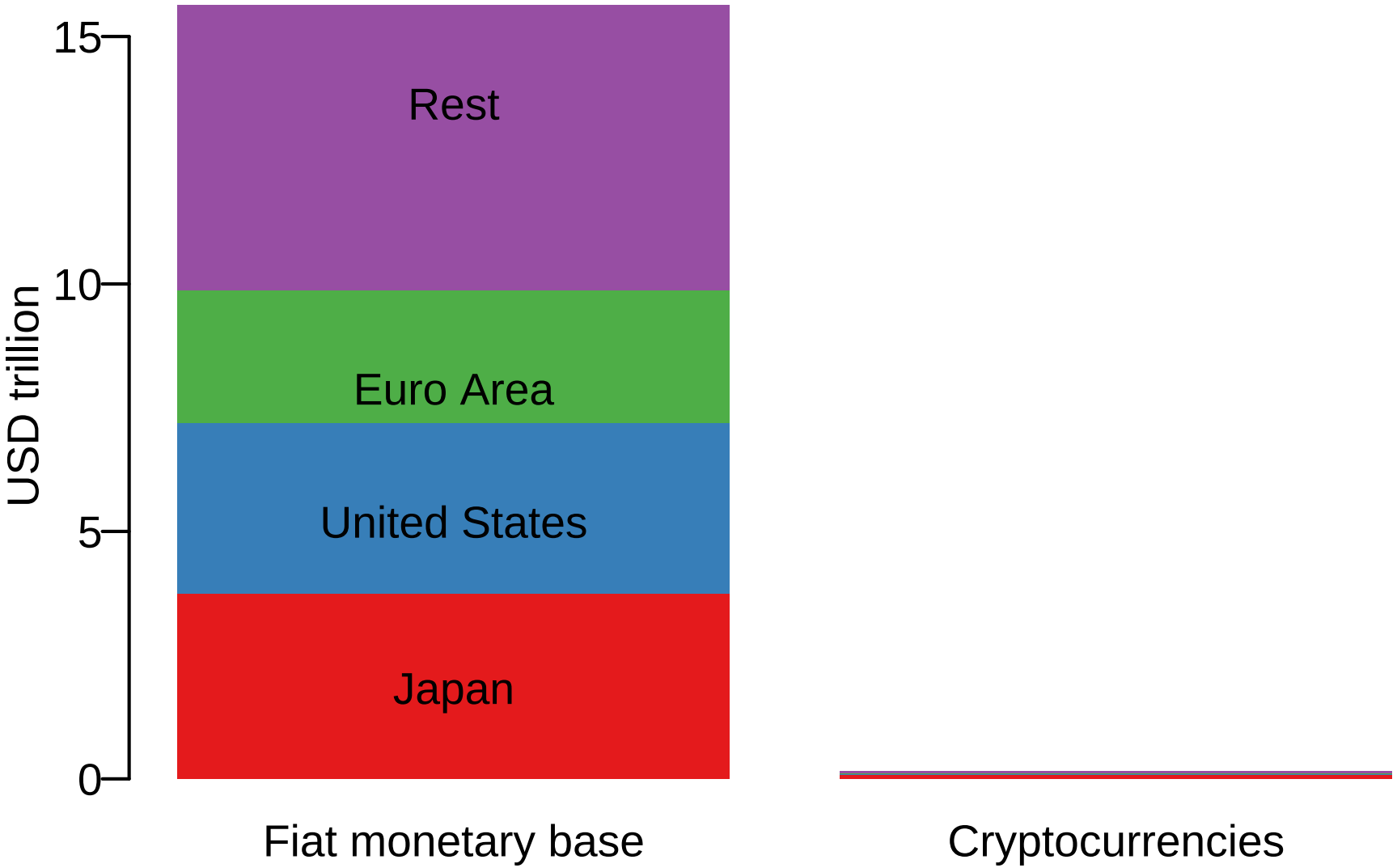
Resolution

- 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)



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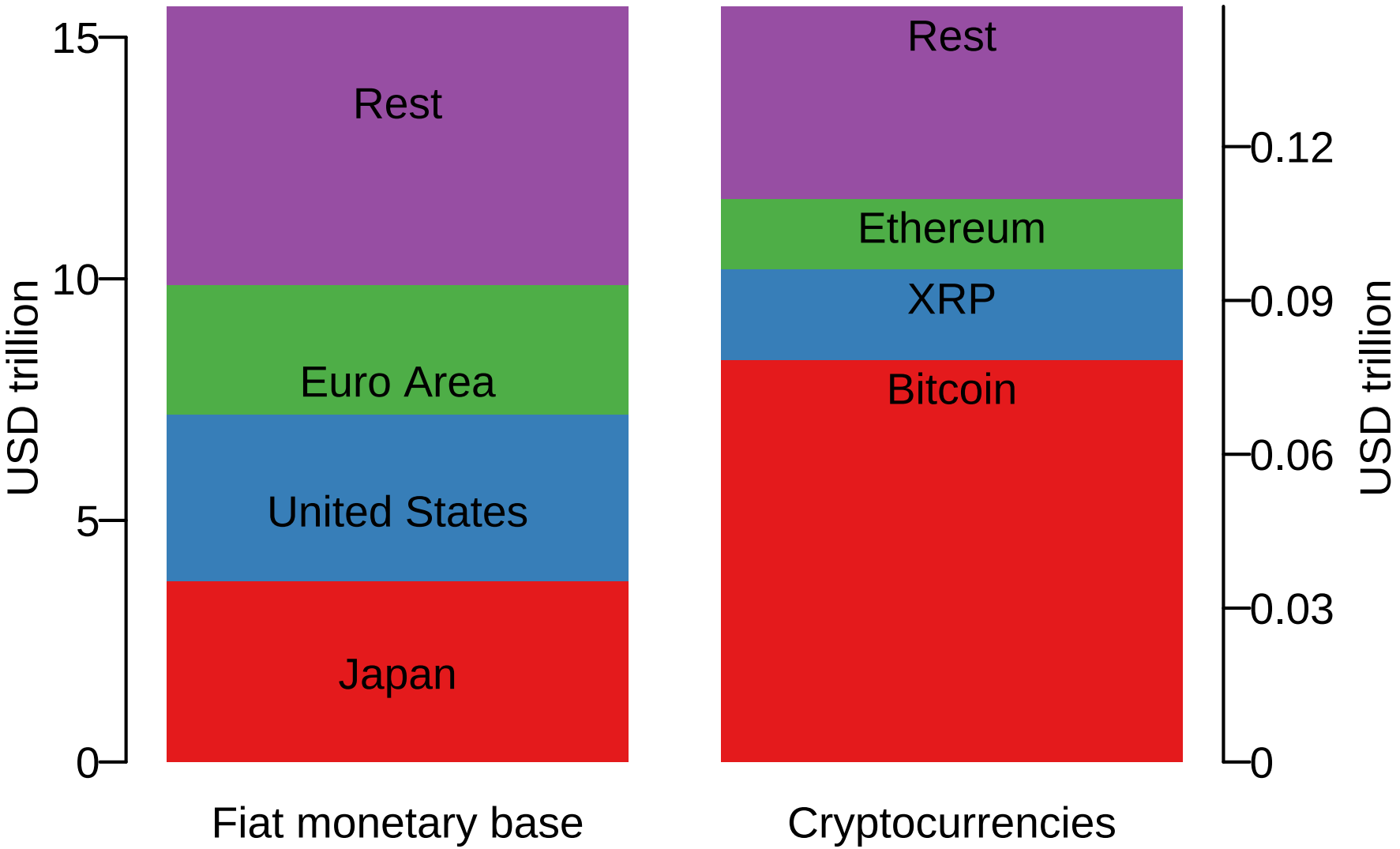
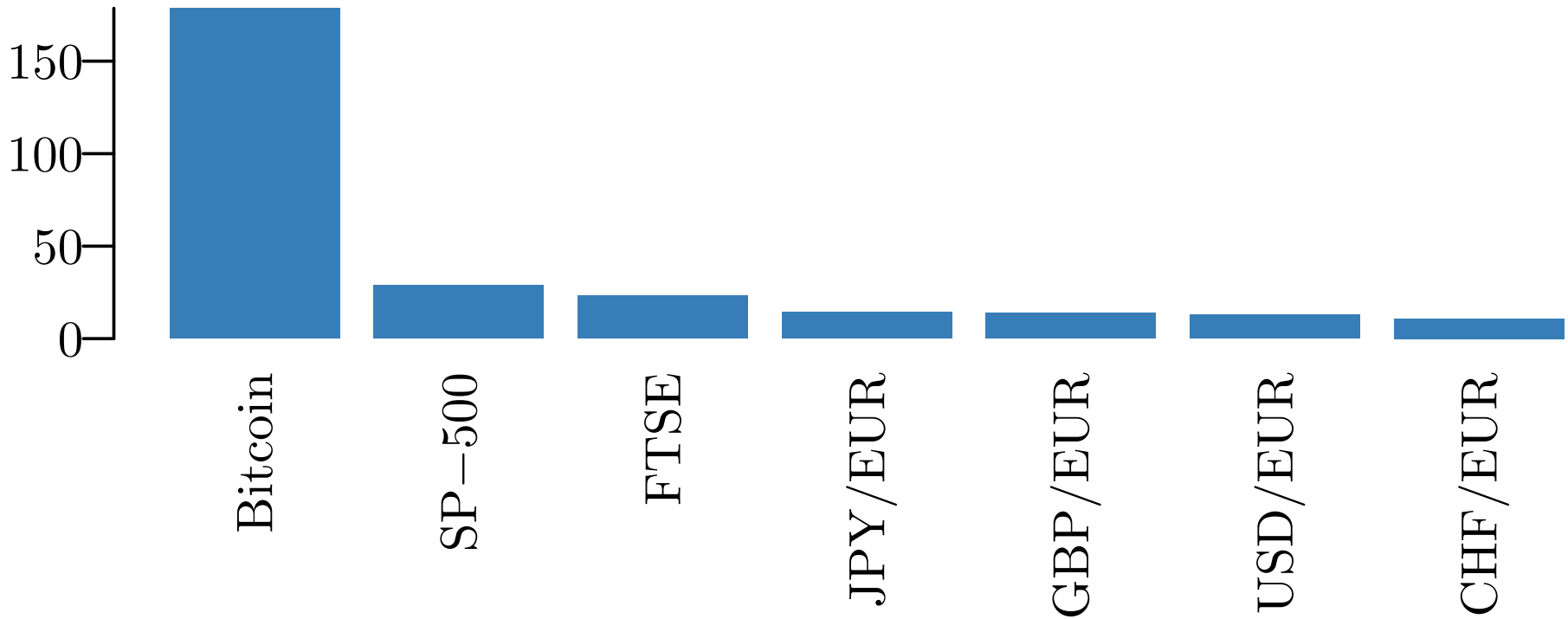


Risk

Average daily risk on a portfolio of value 1000



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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