

Bitcoin – Money without banks?

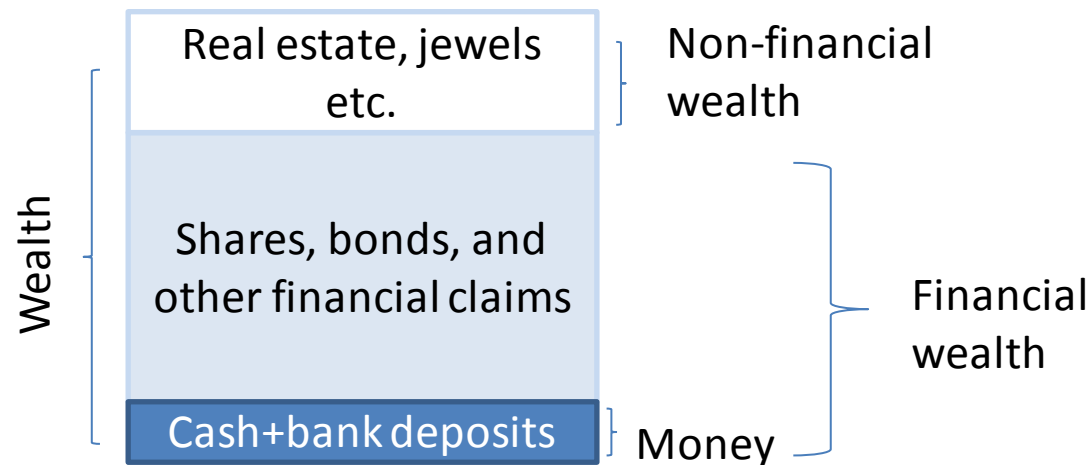
Beat Weber

Overview

- What is money?
- Context: Monetary reform as one minority idea emerging as possible lesson from the crisis
- Bitcoin as the most spectacular among monetary reform proposals
- Bitcoin: How it works in comparison to traditional money and payment systems
- Bitcoin: Pros and cons, future prospects

What is money?

1. Unit of account
2. Generally accepted means of payment
3. The most liquid store of value



Who's to blame for the crisis?

Four competing groups of explanations:

- **Capitalism!** (inherent instability)
- **Economic policy!** (inequality, imbalances)
- **Financial sector and its regulation!** (too much room for speculation)
- **The monetary system!** (too much vs. too little money)

Monetary system explanations of the crisis and the call for monetary reform

Competing camps within this group on two issues:

- **Too little or too much** money as the main problem behind crisis?
- Monetary reform centered on the **state or decentralized private initiatives** as the solution?

Monetary reform proposals resulting from these perspectives:

- „Too little money is the problem“: Debtors and unemployed lack money => economy suffers from overindebtedness and underspending.
Monetary reform solutions: Central bank financing of state spending; Introducing regional currencies for autonomous communities.
- „Too much money is to blame“: Lack of money-issuing discipline by banks and central banks inflated financial bubble => economy suffers from loss of value of money.
*Monetary reform solutions: Strict state monopoly and restraint on money issuance; introducing private currencies to compete with official currency (e.g. **Bitcoin**).*

What is „Bitcoin“?

Open source software ,
invented by anonymous programmer „Satoshi Nakamoto“ in 2009

Claim:

A private online alternative to banks and central banks -
an independent money and payment network

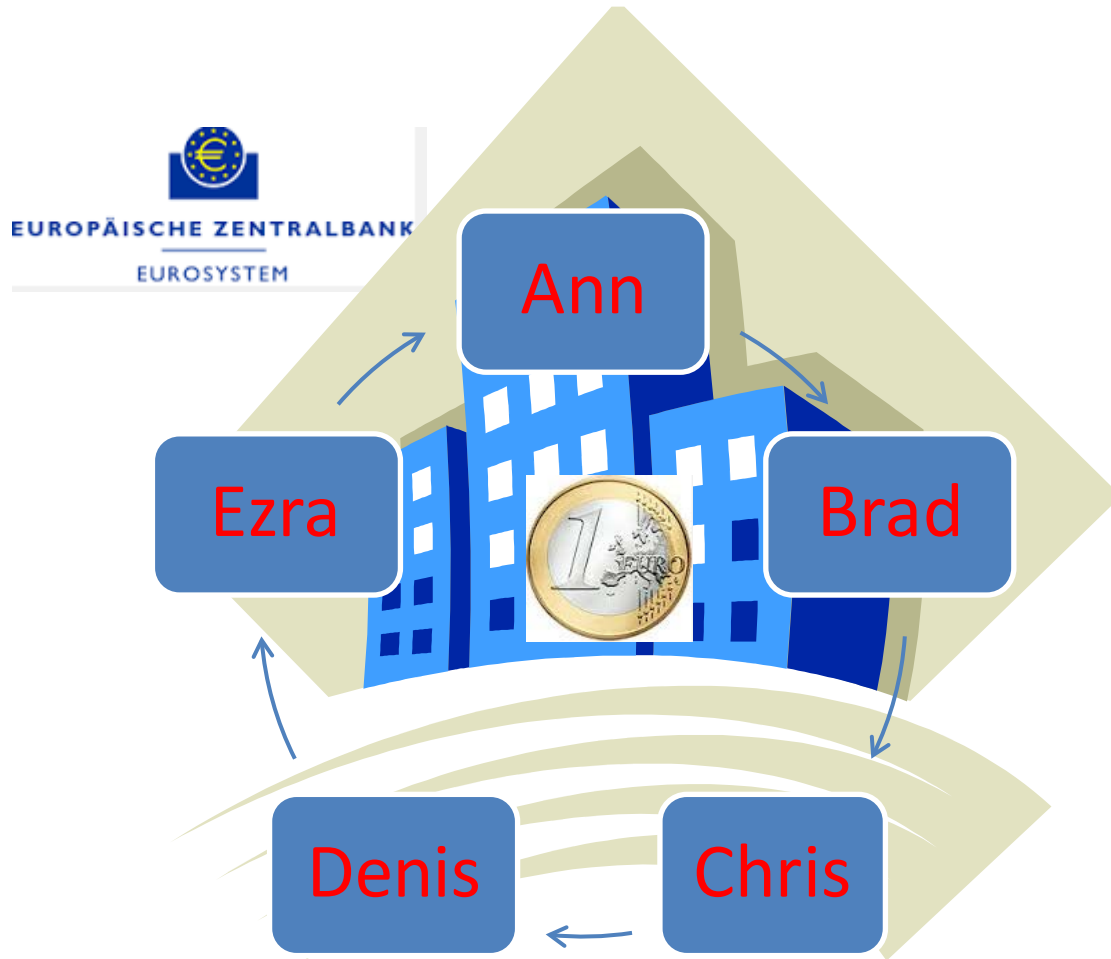
Characteristics:

- Administered by decentralized peer-to-peer computer network of voluntary participants – no central issuer and administrator (central bank)!
- „Coins“ defined as chains of digital signature registered in an open register administered by the crowd – a separate money unit!
- Strict supply limit (21 mio), released step by step

Motives:

- Economic liberalism
- The desire for a genuine internet-money (digital, p2p, anonymous)
- Mistrust against financial sector: expensive, data privacy abuse, losses for customers...

Traditional payment systems



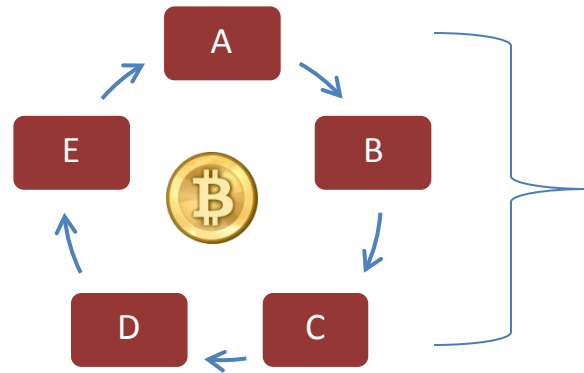
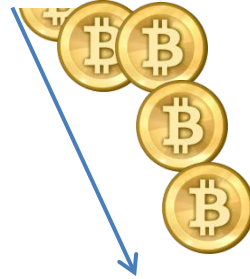
- Banks administer customers' payments
- Central bank provides stable means of payment

The Bitcoin system

Bitcoin protocol: Software regulates procedure



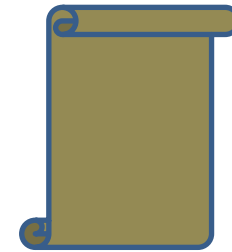
Bitcoin supply limited; step by step release as reward for „miners“



Transactions among pseudonymous users



„Miners“: Verify and record transactions



„Blockchain“: Ledger of all accounts and transactions, continually updated by miners

How does Bitcoin work?

- **Pseudonyms instead of customer accounts held by banks:**

Users can register and make payments among each other using pseudonyms. No data transfer to payment intermediaries, no chargebacks.

- **Rule based computer network instead of intermediaries:**

Computer in the network compete for processing of payment orders. The fastest one wins and gets 25 new Bitcoins from the central vault („Mining“).

- **Anonymous public record keeping to prevent fraud:**

All transactions are recorded in ledger that is copied and held by all network participants; update after every transaction – control against „double spending“.

- **Payment services are remunerated by release of new „money“ from the central vault instead of customer fees**

- **Speculation:**

Bitcoins are exchanged against official currency on private exchanges, their value fluctuating from day to day.

Payment with Bitcoin

How do I get Bitcoins?

- „Mining“ (=participating in the race to process payment transmission orders)
- Purchase on private exchanges against Euro, Dollar.
- Offering a service against Bitcoin payment
- Receiving donations and gifts

What to do with it?

- Payment for services of merchants accepting Bitcoin
- Donating to non-profit projects (e.g. Wikileaks)
- Speculating (buy and sell against other currencies. Currently 1 BTC~400 USD)
- Hiding transactions from authorities

Actual use?

- 15,3 mn. bitcoins out of 21 mn. Already in circulation (current value: 6 bn. USD)
- Transactions: 200,000 (Visa: 212 mn.)
- Value of transactions : 100 mn. USD on average each day (Visa: 16 bn.USD)

What are „payment services“?

Traditional Payment Service providers



- Payment transmission
- Convertibility
- Running your account
- Protection against loss of data, fraud, error
- Stability of value

Bitcoin system



Rely on yourself or on commercial unregulated third party providers in Bitcoin universe

Bitcoin: Volatility of value

A consequence of supply limit, variability in use and lack of issuing entity



Bitcoin: Future prospects?

- **Competition for Euro, USD?** Lack of stability due to supply limit, unstable demand and lack of issuer with a stability mandate.
- **Competition for payment service providers?** „No fees“ only temporary; very narrow range of services, significant risks for users; advantages in niches of payment market (small scale money laundering, payments from/to non-EU-countries, small denomination payments online).
- **„Blockchain“ technology:** After initial wave of Bitcoin imitations and variants („alt coins“), focus has shifted towards exploring non-currency uses, e.g. rationalisations within financial industry.

Other private currencies

- There are various attempts to launch alternative currencies with other design features (e.g. regional currencies conforming to „too little money“ perspective)

Problem:

- Network effects favour more or less monopoly position for one currency.
- In user's judgement, there is a hierarchy of money, ranked according to quality (widespread acceptance, stable value, unit for pricing). Official currencies' status can hardly be matched by private upstarts unless there are striking performance differentials.
- Possible exception: A private currency that gives exclusive access to sought-after goods and services.