

Open Source or Peer-to-Peer Money Whats new, whats old?

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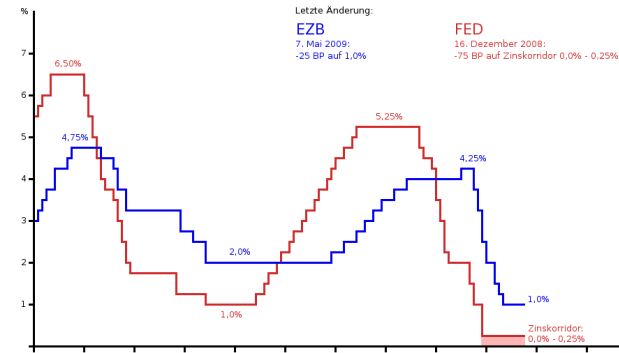


Motivation

- Derzeitige Wirtschaftskrise: Größter Bankencrash der Geschichte (Lehmann)
- Crashes sind ein wiederkehrendes Phänomen
- Wikipedia **Schwarzer Freitag**: ... lässt sich bis ins 18. Jahrhundert zurückverfolgen ... zuerst in England für den Black Friday vom 6. Dezember 1745 belegt (Zugriff 2009-10-21)
- Exponentielles (geometrisches) Wachstum ist inkompatibel mit begrenzten Ressourcen
- Gedankenexperiment: Wie dick wird ein 50 X gefaltetes Blatt Papier?



Zinsentwicklung

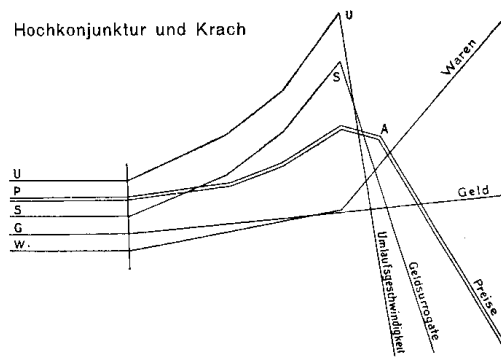


Quelle: boersennotizbuch.de

- Deflation: Preise im freien Fall
- ... bis zum Crash



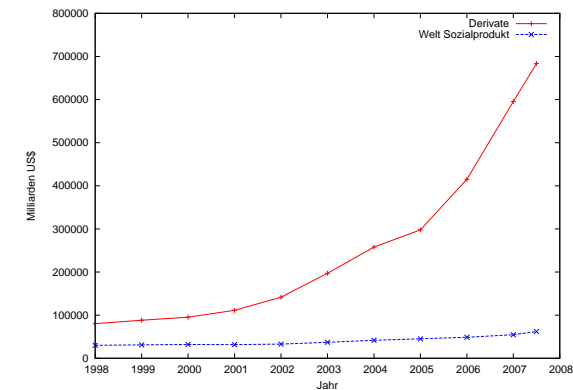
Zinsentwicklung und Crash



Quelle: Silvio Gesell, 1920



Derivate: Die Bombe tickt



Quelle: Bank für internationale Zahlungsausgleich (Bank for International Settlements) www.bis.org



Schuldenlast



Quelle: Die Presse
15. 10. 2009

- aus dem „Nachhaltigkeitsbericht zur Budgetentwicklung“ der EU-Kommission
- siehe auch Vortrag von Lynx (USA) auf den Linuxwochen
- die Schuldenlast steigt exponentiell und überholt das BIP



Bugs

- inefficient and unfair „I've got the money, so you have to work for me“
- controlled by „them“ not us → Central Banking
- tries to be both: commodity (Wertaufbewahrung) vs. means of exchange (Tauschmittel)
- crashes completely from time to time exponential function don't work in the long run in the real world
 - „Pyramidenspiel“ – Madoff!
 - Wikipedia: [Anlagesysteme mit Schneeballcharakter](#)
 - § 168a (2) StGB Ketten- oder Pyramidenspiele



Bugs: Central Banking

- *Privately-owned* bank with privilege to issue notes
- banknotes have “legal tender” status
- first example: Bank of England, William Paterson is incorporated as “Governor and Company of the Bank of England” 1694, nationalized 1946, independent public organisation 1997
- European Central Bank (ECB) 1998: independent from government, own budget sourced from national banks
- Federal Reserve: privately owned bank independent from government



Bugs: Central Banking

- Exclusive license granted to a bank by the state
 - State discovers that bank is a source of credit
 - Government begins to accept the private notes as tax payments (instead of metallic money)
 - state needs money in times of emergencies (e.g. war)
 - Note issuance becomes excessive, redemption (metal money) becomes impossible and is abolished by law
 - Notes are give “legal tender” status
 - Measure of value becomes the paper currency itself
- Rittershausen, Heinrich “Die Zentralnotenbank”, 1962 cit. Greco, H.



Federal Reserve

- 12 privately-owned banks
- seven-member Board of Governors is the main governing body of the Federal Reserve System → they serve 14 years!
- As an independent institution, the Federal Reserve has the authority to act on its own without prior approval from Congress or the President.
- The term „elastic currency“ in the Federal Reserve Act doesn't just mean the ability to expand the money supply, but also to contract it.
- So far the money supply has only been expanded



Money: Parameters

- consent
 - no dept collection (non-redeemable)
 - reputation
- interest rates, no interest, negative interest
- supply/control: who issues a currency
- units dependent on (some) national currency?
- units bound to other (real-world) unit, e.g. work-time (time bank), gold, commodity basket („Warenkorb“)
- legal tender vs market based tender
 - Free Banking Era (USA 1837–63)



Money: Parameters

- „supplementary“ to cash or trying to replace it
 - anonymous money or open accounts (e.g., LETS)
 - rural/urban – seems not to be a factor
 - local / global „Regio“ vs Fair Trade
 - community based
 - commodity (Wertaufbewahrung) vs. means of exchange (Tauschmittel)
 - b2b vs b2c vs p2p
- state money vs. separation of money and state
- central vs distributed



Evolution of Money

- Barter trade: “double coincidence”: no trade if no mutual offer/need
- Commodity money: payment medium, store of value, measure of value e.g., gold, silver
- Symbolic money e.g., warehouse receipt, paper money redeemable for gold
- Credit money: promise to pay, IOU → bank-runs when used together with symbolic money
- Credit clearing: accounting system: selling increases the account balance, buying decreases it

Understand that money exchanges information
Thomas H. Greco, “The End of Money and the Future of Civilisation”



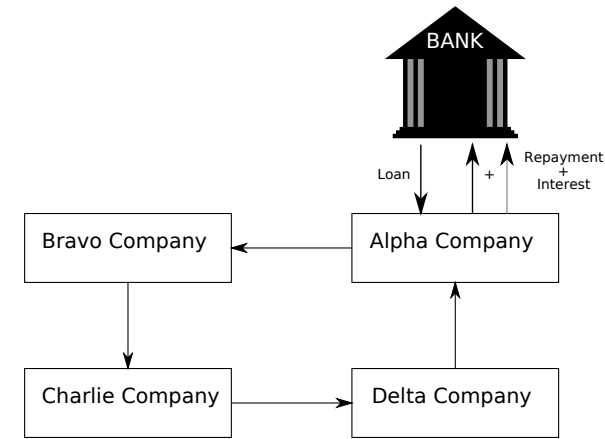
How Credit-Money malfunctions

- biggest challenge: transcending political money system that has gained a virtual monopoly on credit worldwide
- people's own credit is privatized and "loaned" back to them at interest
- benefit of credit money realized only if created democratically on a proper value basis *by the people themselves*
- enable *every producer* to create – within reasonable limits – the credit money needed: flexible yet sound means of facilitating exchange

Thomas H. Greco, "The End of Money and the Future of Civilisation"



Credit-Clearing



Thomas H. Greco, "The End of Money and the Future of Civilisation"



Solving the Money Problem

- insidious nature of elite power: fundamental problem is monopolization of credit per se, not who happens to be the owner of that monopoly
- what we really need for government to do is not to take control of the money monopoly, but to end it
- since the people do not control their government ... separation can only be achieved as people assert their money power

→ what is this "money power", how can it be done?

Thomas H. Greco, "The End of Money and the Future of Civilisation"



Separating the Functions of Money

- mediating economic exchange: what can be used as payment medium to settle accounts
→ let's call only this one "money"
- best way to "store" value
- measure economic values: define unit of account used for specifying contractual obligations and for pricing
→ commodity basket
→ energy, labour, commodity (e.g. gold)?

These functions are mutually contradictory!
And we're confused by legal tender laws!

Thomas H. Greco, "The End of Money and the Future of Civilisation"



Regional Development and Credit Clearing

- Community Economic Development: nurture businesses that are already part of local economy
 - Stage I: include *all sectors* of constituent development, first step might be a “buy local” campaign
 - Stage II: mutual credit clearing as alternative means of payment
 - Stage III: Credit of “Trusted Issuers” provides alternative currency for regional circulation
 - Stage IV: Support structures for localization: Saving, investment, finance, education
 - Stage V and beyond: Objective measure of value
- Thomas H. Greco, “The End of Money and the Future of Civilisation”



Geschichte von Geld-Experimenten

- **Silvio Gesell**: „Freigeld“ „umlaufgesichert“ 1920
- Fachbegriff „Demurrage“ – Liegegebühr für Schiffe
- **Wörgl in Tirol**: Freigeldexperiment 1932–33: 170 Gemeinden wollten sich anschließen, Experiment wurde von der Nationalbank beendet.
- Heute: Experimente mit Komplementärwährungen z.B. Chiemgauer:
 - Chiemgauer im Umlauf: >400,000
 - Zirkulation 2008: 3,000,000 €, 2007: 2,300,000 €, 2006: 1,450,000 €
 - Kooperation mit lokalen Banken (!)



Examples of (alternative) money systems

- **Local Exchange Trading Systems (LETS)**
- **Barter networks (Tauschkreise)**
- **Time Banks**
- **Mutual Credit**
- **Community Currencies (CC) Regiogeld**
 - **WIR Bank Switzerland**: Founded 1934, until 1948 Demurrage, 1.65 billion swiss francs per year traded. Also used for Credit, 26% of all SMEs are member
 - **Chiemgauer**
 - **Waldviertler**



Whats next? Web-based Trading Platform

Greco:

- a marketplace
 - a social network
 - a means of payment
 - a measure of value or pricing unit
- we will probably need multi-currency aware systems (e.g. web-shop)
- ... where one item can have ranges of prices in different currencies, e.g., “up to 60% in WIR”
- what do we need to achieve this?



Money: Reputation

From Open Money Manifesto

- must be earned to be respected
- your money is your word
- you're obliged to redeem it
- it's a matter of reputation
- when you have your own money you cannot be bought or sold easily
- not all „moneys“ will work



Cryptography

Six properties of an ideal digital cash system (Kazuo Ohta cited after Bruce Schneier):

1. Independence: Security independent of location – transferrable via network
2. Security: cannot be copied and reused
3. Privacy (Untraceability): No one can trace relationship between user and purchases
4. Off-line Payment: Protocol is executed offline: Shop doesn't need a network link
5. Transferability: cash transferrable to other users
6. Divisibility: A piece of cash can be subdivided



Cryptography

- Properties 1 (independence), 2 (security), 3 (privacy), 4 (offline) but not 5 (transferability), 6 (divisibility) is easy
- all except 4 (online) by several systems
- but being online becomes less of a problem as time goes by
- but all of these protocols assume a *trusted third party*
- do we want to trust a bank (privacy!)
- peer-to-peer social software: see my blog entry [Cloud computing, Vendor Lock-In and the Future](#)



Money: Software, Conceptual Work

- openmoney.org: semantic model
- opensourcecurrency.org
- [opentransact](#): REST based standard for financial transactions – has potential of p2p implementation
- [newcurrencyfrontiers](#): conceptual blog
- twollars.com: Appreciation currency on twitter
- OpenID based authentication
- REST-based authentication: [FOAF+SSL](#) by Henry Story



P2P Design?

Shortcomings of (some) current implementations

- Untraceability
 - Use crypto
 - Truly peer-to-peer: No central server?
 - Everybody should be a merchant and customer (p2p not b2b or b2c)
 - Need reputation tracking: Widely implemented for filesharing
- a REST based system like [openransact](#) maybe with REST-based authentication [FOAF+SSL](#) by Henry Story



Future

„Money has to change. It was created to serve us, not the other way around. It needs to change so that it meets our needs instead of exploiting them. To do this I believe money itself needs to go open source. We need to crack open the black box we call money and start experimenting with it.“ [p2pfoundation](#)

Users should act as though this is all a game, and be prepared for some of it to become real.
So let's start the game. [openmoney.org](#)