

Money in the past and in the 21st century: Principles of trust and performance

S V E R I G E S R I K S B A N K



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What are money?



- Broad historical perspective
- Different views are connected to historical attempts to solve concrete problems in the monetary system
- Principles of trust

<i>Definition</i>	<i>Villkor</i>
Metallism	Consist of or be tied to a good with independent market value
Chartalism	Legal creation issued by a state
Functionalism	Must act as: 1) Means of payment 2) Unit of account 3) Store of value

Gold standard

- Market value of gold
 - Must be mined → natural scarcity
 - Automatic mechanism (Hume, Ricardo)
- In reality
 - New mining methods, new mines can create influx
 - Not automatic → large degree of decisions by central banks

Chartalist/functionalist system

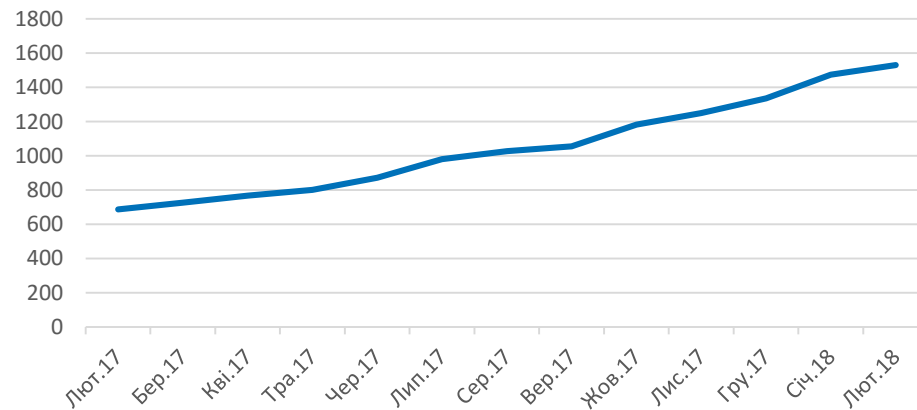
- Trust in Weberian bureaucracy
- Commercial bank money created by the market
- - some degree of trust that markets can do things better
- Set of regulations to ensure trust (deposit insurance) → financial stability and money two sides of the same coin

- Principles:
 - State with Weberian bureaucrats can maintain functionality of money while regulating

What are cryptocurrencies?

- "Digital units that are created and transferred between users through cryptography."
- Bitcoin (2009) first cryptocurrencies followed by rapid increase— more than 1500 at present

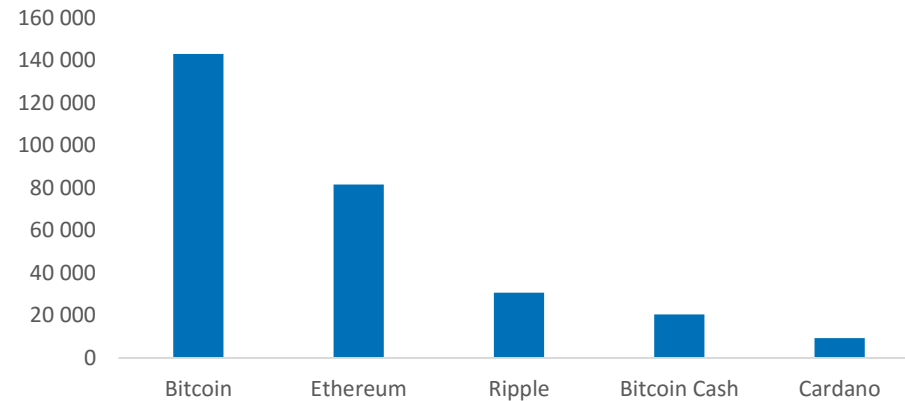
The number of cryptocurrencies in the world February 2017- Februari 2018



Source: Coinmarketcap

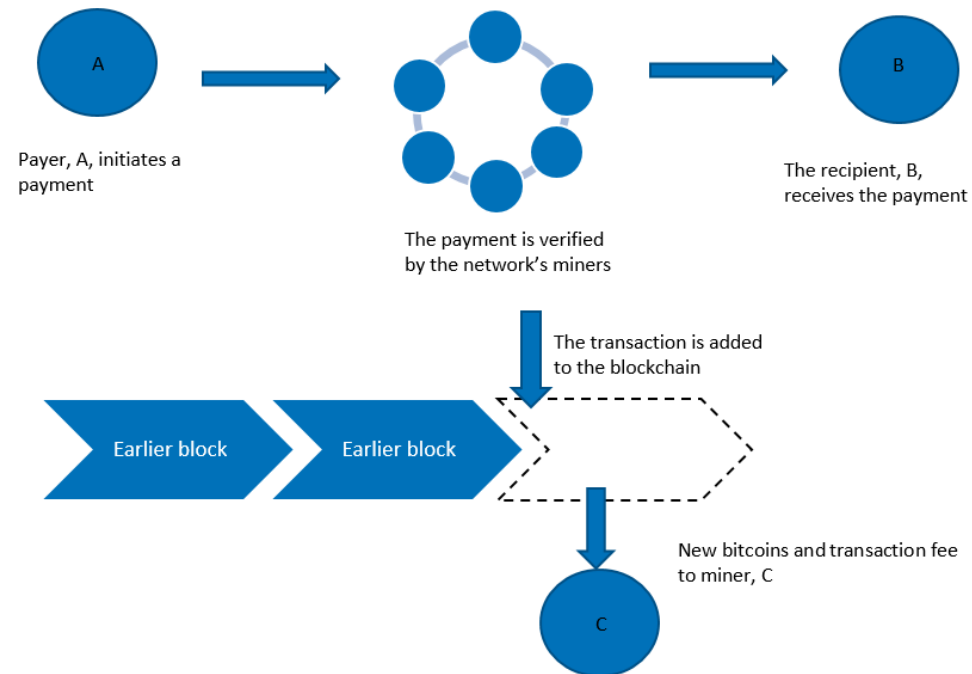
Bitcoin no longer the only cryptocurrency

Market cap of the five largest cryptocurrencies 8 February 2018 (million USD)



Källa: Coinmarketcap

Overview of Bitcoin's structure



Source: Segendorf (2014).

Cryptocurrencies

- Lack of trust in
 - Government
 - Weberian bureaucracy
 - Banking system and its regulations
- Trust in computers → non-human interference
- Trust in artificial scarcity (proof of work, proof of stake etc)
- Trust in a marketlike system

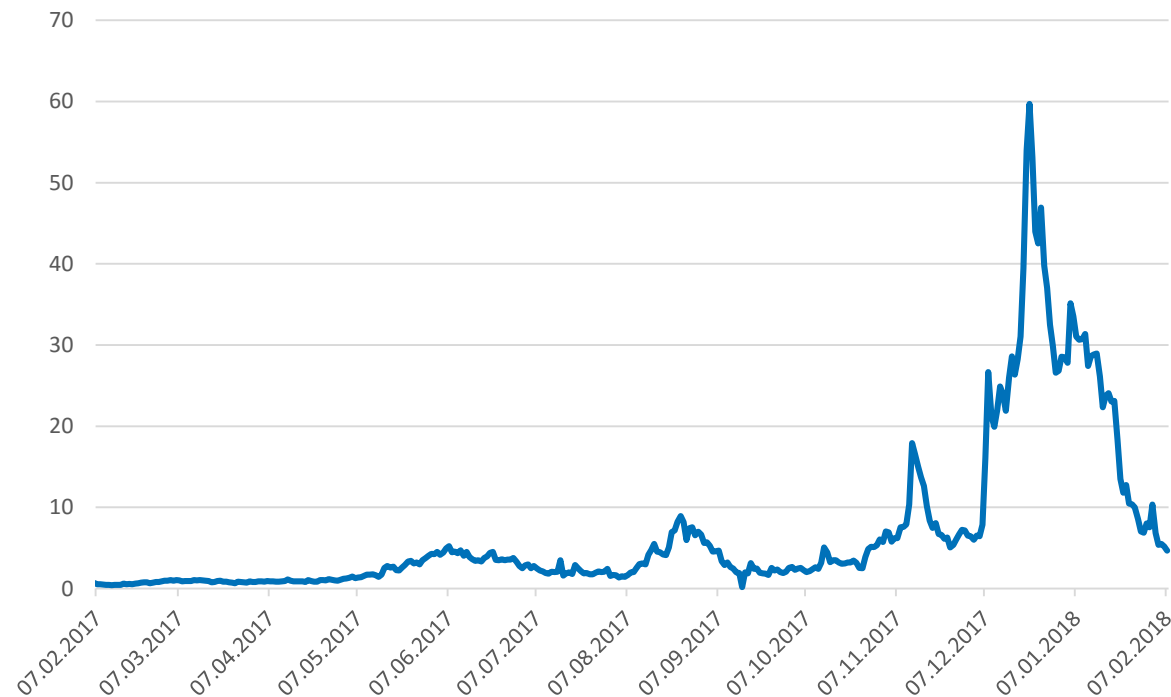
- Crypto-metallism?

Cryptocurrencies have problems as a means of payments



- Few possibilities to buy with cryptocurrencies
- Most people buy cryptocurrencies for speculation – not for use as means of payment
- Technical and organizational difficulties to guarantee a stable payment system

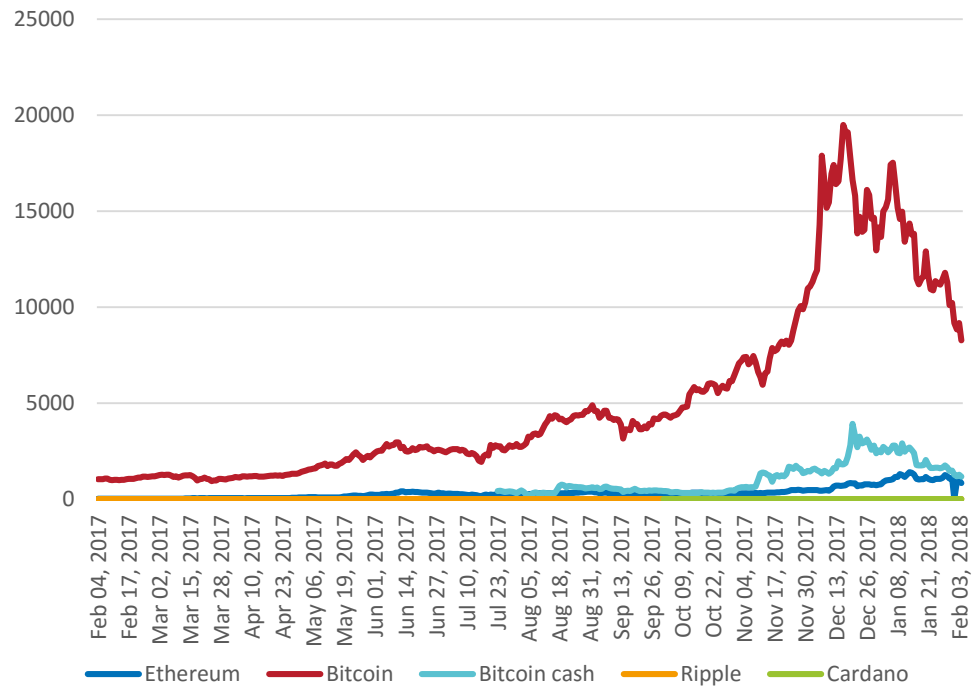
Average transaction fee for payments with Bitcoin during the last year (USD)



Source: Calculated from Blockchain.info

Cryptocurrencies are a poor store of value

Price development of the five largest cryptocurrencies February 2017-February 2018 (USD)



Källa: Coinmarketcap

Cryptocurrencies can't be classified as money

Definition	Established currency	Cryptocurrency
Metallism		
Chartalism	X	
Functionalism	X	

Risks mainly for individuals

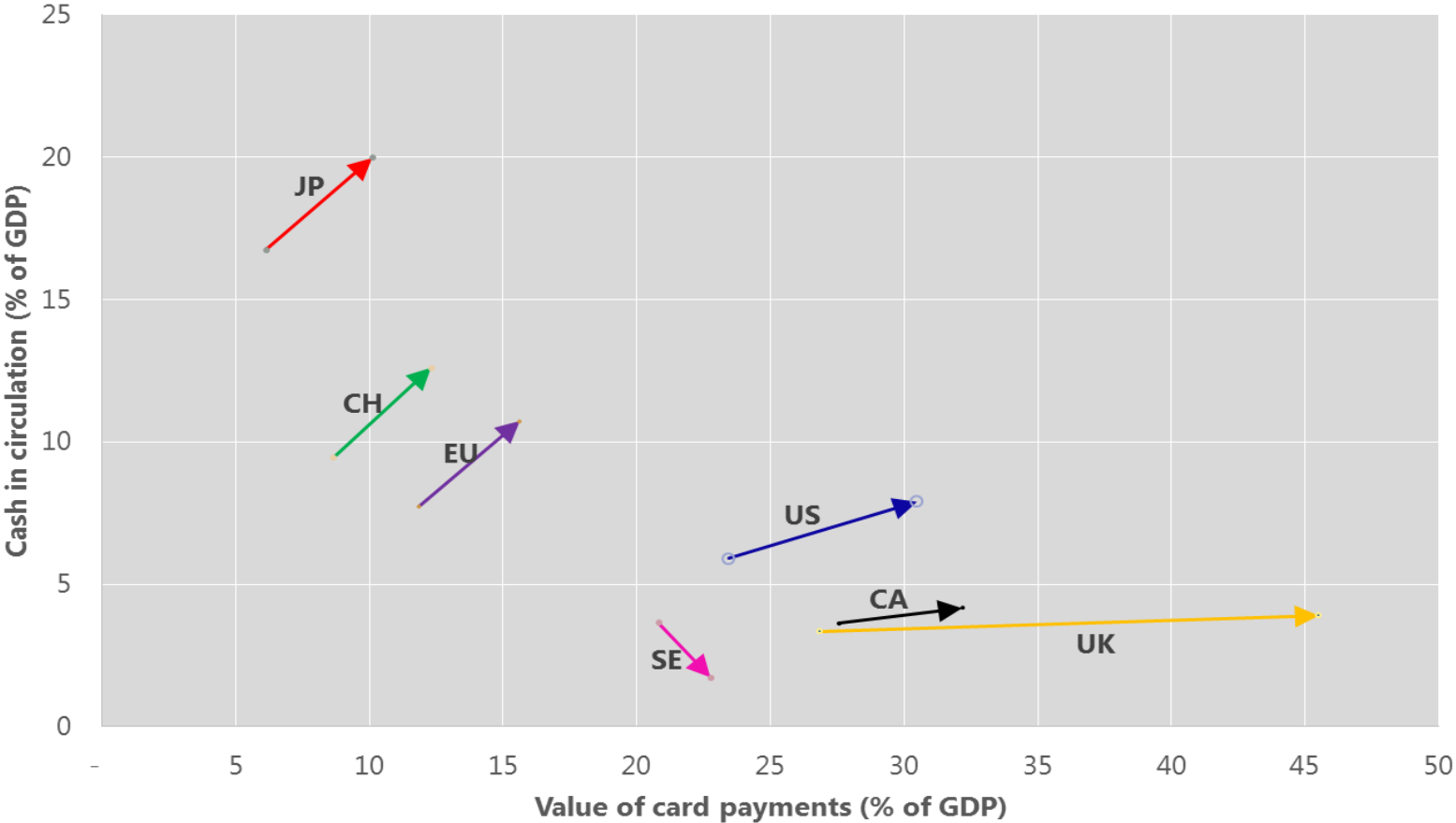
- Still low use: ca 275 000 transactions globally per day 2017
 - Swish: 1 million transactions per day, 9 million card transactions per day in Sweden
- Ownership still small compared to the total economy
- → Low risk for financial stability
- However: Large risk for price falls and individual losses
- Esma, EBA, Eiopa: cryptocurrencies "unsuitable" investment

Central Bank Issued Digital Currencies?



Declining use of cash

Cash in circulation and card usage in selected developed countries: 2007 – 2016



Note: The beginning of the arrow is 2007 and the end is 2016

Source: BIS



- "Contemporary monetary systems are based on the mutually reinforcing roles of central bank money and commercial bank monies." – BIS, 2003
- Central bank money:
 - Financial institutes: central bank reserves
 - The public: cash
- A situation where cash is crowded out by commercial bank money forces us to start thinking: What will happen when the public does not have access to central bank money?

No public access to central bank money?

- Ensuring access to zero risk money
- Ensuring resilience
 - Every-day malfunctions
 - Cyber attacks/war/natural disasters
- Financial inclusion
 - People without bank accounts
 - People with difficulties
- Efficiency
 - Future concentration
- Other factors?
- Conclusion: too many factors for a central bank to ignore

E-krona at a glance

- No decision taken yet
- Two main options
 - Register-based
 - Value-based
- Technological choices left open
- Decision by Executive Board late 2018

The e-krona would not be a cryptocurrency

- Issued by the Riksbank → claim on the Swedish state
- Expressed in Swedish SEK → covered by the Riksbank's inflation target
- The Riksbank has final responsibility for the infrastructure → transaction fees cannot be allowed to fluctuate

- Conclusion: The e-krona would be issued by a state and managed by the Riksbank in the Weberian tradition under chartalist/functionalist principles