

Bitcoin – the Evolution of Money

A digital world needs digital currencies. Cryptocurrencies such as Bitcoin are the logical development of a long-standing history of monetary evolution – in a journey through time, we dive deep to its origins.

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In the beginning, there were... seashells. These attractive items were used in Africa, India and China as one of the earliest kinds of money and were exchangeable for other services and goods. But why did ancient cultures even bother to move away from bartering and use an indirect medium of exchange instead?

The need for money arose naturally with the continued growth of civilizations and the simultaneously increasing division of labor. Resources such as ore mines or farmland were geographically distributed, requiring populations of these areas to trade – and hence establish a broadly accepted means of payment. To this day, money (from Latin *monere*, “to remind”) facilitates the indirect exchange of goods and services and allows to compare their prices. Another pivotal function of money is to act as a store of value: Work that is done today can be redeemed at a later point in time.

Over the centuries, money has taken many different forms and shapes. The Mesopotamian civilization used *shekels*, which were both a unit of weight of barley and of equivalent amounts of metal. The first coins made of precious metals such as silver or gold appeared around 600 BC in the region around the Aegean Sea. The advantage of metal-based coins was that they not only had *face value* (value that relied on both parties’ trust), but also *intrinsic value* due to their composition, making them acceptable across borders. Paper money

was developed by the Chinese during the 11th century, and the idea made its way to Europe when explorers (e.g. Marco Polo) returned from their adventures. European banknotes were first issued in 1661 by Stockholms Banco. British goldsmiths handed out promissory notes to gold depositors, which were redeemable for the gold entrusted to the goldsmith. These were ultimately not only the predecessors to more modern currencies that were exchangeable for gold or silver, but also laid the foundation for today’s fractional reserve banking and debt economy.

*“The United States
can pay any debt it has
because we can always
print money to do that.”
– Alan Greenspan*

In the 19th and early 20th century, Gold still was the backbone of international monetary transactions, and fixed relationships of currencies to gold were seen as beneficial to reduce the trade risks between countries. The economic turmoil that followed World War I and eventually was the root cause of World War II compelled leaders of the 44 Allied nations to meet in Bretton

Woods in July 1944, where an agreement was signed that fixed the exchange rates between currencies and the US dollar. The dollar itself was convertible to gold at a rate of \$35 per ounce. In part due to the economic disparities that emerged over the following years, notably the larger growth rate of Europe and Japan in comparison to the US, the US unilaterally decided to abandon the fixed convertibility of dollars to gold in 1971 (known as the *Nixon Shock*). Ever since, most currencies have been *fiat money* – backed only by people's trust in the governments to ensure the money will still be widely accepted in the future and to adopt monetary policies which keep the purchasing power of the currency relatively stable.

Nowadays, more than 90% of money is digital and exists solely as 0s and 1s in the databases of banks, fueled by the immense achievements in information technology. The advent of **cryptocurrencies** that was kick-started by Satoshi Nakamoto's Bitcoin whitepaper¹ in 2008 is **a logical continuation of our digitalization era**. They fulfill all the requirements of a widely useable medium of exchange: Cryptocurrencies such as Bitcoin are fungible (no Bitcoin is different from another), hard to forge (which would require gaining control of the entire network), durable (Bitcoins can be lost, but not destroyed²), easily transferable and divisible (in up to 100 million units per BTC called *satoshis*). And in stark contrast to central bank issued money, the supply of cryptocurrencies is programmatically well defined and limited – for Bitcoin, the total number of coins in circulation will converge towards 21 million with a defined inflation pattern until the year 2140, making it a potential store of value similar to gold.

The financial industry has acknowledged the need and potential of such digital, blockchain-based systems. JP Morgan has launched its own digital coin,³ UBS is leading a project on creating a settlement coin,⁴ and the People's Bank of China has recently announced (in response to Facebook's Libra⁵) that it will develop a central bank digital currency.⁶ As in all rapidly developing fields of technology, economics and science, only time will prove what will prevail.

“Bitcoin is the beginning of something great: A currency without a government, something necessary and imperative.”

– Nassim Taleb

Where do we stand today in the evolution of money?

This month, Bitcoin and distributed ledger businesses like Facebook's Libra have been the main talk of regulators in the US and in Germany. The Fed, Senate, Congress, White House, and even POTUS (President of the United States) have thrown in their two cents. The main message: **We like innovation, but please now, stop innovating or at least innovate a little bit slower so that we can keep up with you.** Digitalization and information technology are developing exponentially, whereas regulation is developing linearly. The stated goal of regulators is to provide security for customers and to stop illegal activities like criminal or terroristic activities.

However, there is another fundamental and rarely discussed reason why governments are hesitant to embrace stateless currencies. Seigniorage. Seigniorage is the difference between the value of money and the cost to produce and distribute it. Effectively, this is a transfer of wealth from the late receivers to the early receivers of the newly created currencies, known as Cantillon effect. Seigniorage has become a huge revenue source for governments and banks, and any corporate-issued money or cryptocurrency that is not backed with local currency cannibalizes that business.

1. <https://bitcoin.org/bitcoin.pdf>

2. The only way to “destroy” Bitcoins is to never redeem the full block reward for mining in the first place, see: <https://medium.com/@alcio/how-to-destroy-bitcoins-255bb6f2142e>

3. <https://www.jpmorgan.com/global/news/digital-coin-payments>

4. <https://in.reuters.com/article/us-banks-blockchain-exclusive/exclusive-banks-to-invest-around-50-million-in-digital-cash-settlement-project-sources-idINKCN1SM2U0>

5. <https://libra.org>

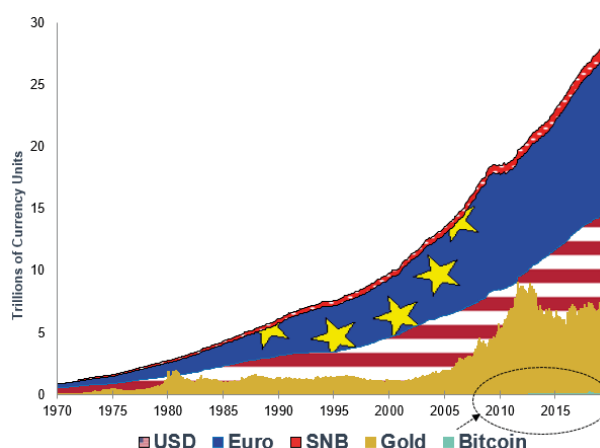
6. <https://www.scmp.com/economy/china-economy/article/3017716/facebooks-libra-forcing-china-step-plans-its-own>

*“By this means
the government
may secretly and
unobserved, confiscate
the wealth of the
people, and not one
man in a million will
detect the theft.”*
– John M. Keynes

Over the past 150 years, the state's role in money production has rarely been called into question. Britain severed the tie to gold in 1931, the US in 1971, and Switzerland in 1999. Pegging a currency to financial assets such as precious metals or cryptocurrencies limits the ability of central banks to print money to finance political objectives via seigniorage, also called inflation tax by economists. Three key laws have protected the state's monopoly: legal tender, capital gains taxes, and value-added taxes. The legal tender law defines what financial assets can be used to pay taxes. This law ensures that the state-produced money will have a certain level of demand. The capital gains and VATs are used to punish investors who hold alternative monies instead of government made fiat currency. On this point, the German Finance Minister, Olaf Scholz, explained this week that “the issuance of a currency does not belong in the hands of a private company... The euro is and remains the only legal means of payment in the euro area.”

In response to the global financial crisis, central banks around the world flooded the markets with liquidity to reflate asset prices in order to keep the monetary system afloat. Consequently, Swiss real estate prices and the Swiss Market Index have reached all-time highs in nominal terms. The increasing wealth gap has also increased political polarization and economic instability. The chart shows the growth of the M3 money supply for US dollars, euros, and Swiss francs. This is compared to the market capitalization of gold and Bitcoin in US dollar terms.

Illustration 1: Money supply of euros, Swiss francs, and US dollar are shown as stacked whereas gold and Bitcoin are not stacked.



Source: St. Louis Fed, OECD, Coinmarketcap.com, Incrementum AG

Are we on the verge of a paradigm shift?

Many towns in Switzerland accept Bitcoin as legal tender for paying taxes, and Switzerland does not have capital gains taxes on precious metals or cryptocurrencies despite having a VAT on silver. This helps to level the playing field between fiat currency and other asset classes. 50 years after the breakthrough discovery of asymmetric encryption and the Internet, we have entered the era of cryptocurrencies. A race to create the optimal form of money has begun, and, so far, there are three main contenders: state-issued monies, corporate-issued monies, and decentralized cryptocurrencies. Technological innovations cannot be reversed, and the emergence of a new monetary system is inevitable. **Investors are already placing bets on the outcome, but a diversified approach is often humbler and more prudent.**



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