

# A Comparison Between Cryptocurrencies and Digital Dollar

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In that article, we shall study the differences between the cryptocurrencies and what is announced as the national central bank-backed digital dollar.

The digital dollar - as a digital fiat currency - does not exist yet, nevertheless, there are many hints about the technologies that it may use and how it will be confronted with the actual cryptocurrencies.

First, let us recall what are the actual cryptocurrencies.

## A short reminder about the cryptocurrencies

The cryptocurrencies: Bitcoin (BTC), Ethereum (ETH), LiteCoin (LTC) and others are all the rage nowadays. Yet they are very recent, a dozen years ago, Bitcoin - the root of all known cryptocurrencies - was a confidential "cypherpunk" concept that only a few specialists and tech-curious people knew about.

There are of course by now many articles on the web about cryptocurrencies. What they are and what they are not - or not yet. Anyway, very few can correctly explain the deep concepts behind cryptocurrencies.

## A Bit of History

To understand these deep concepts, we have to go back to the history of money.

What is money? Initially, it is a token that is used to trade and exchange goods. It doesn't matter what it is as long as all parties agree on its value. Stones, colored coconuts, or empty sea shells can be and probably have been, used as money in the history of mankind.

Money presupposes a numerical value and prices. *How many tokens do we exchange to get such goods into our property?*

Historically, precious metals such as gold and silver have been used to forge such tokens, because the rarity and purity associated with these metals gave them an intrinsic value accepted by many people of different tribes, clans, or lands.

With time, the kings, queens, czars, emperors, and - in general - the rulers of a country became the sole "authorized" creators of such tokens. They put their marks on the money, usually a representation of their power like an eagle or symbolic heraldic signs or a portrait of the rulers engraved in the token - a *coin*.

Everybody has heard, at least once, of Roman sestertius, Spanish doubloons, French écus, English crowns, etc... They were such coins forged with precious metals.

Finally, in our recent history, money stopped being directly associated with precious metals and became emitted as banknotes or coins in nickel or low-value ferrous alloy. This is what we call fiat money and that we still use daily, at least in most countries.

With the rise of digital technology, starting in the late 70s, it became possible to develop electronic forms of payments and therefore electronic forms of money.

Since there, emitting money had been the exclusive privilege of the state powers, the successors of the powers of the kings and emperors.

In early 2000, an attempt was made to create a digital international, state-less money currency based on gold. The digital money was named E-Gold. After a certain success, it was rapidly shut down by the US federal law agencies.

E-Gold was using a relatively simple technology, without no real security and no way to validate or verify its authenticity. It also never reached the status of a digital currency; it came very close to it. It was also totally linked to the company behind E-Gold (e-gold Ltd) which had the similar role of a central bank.

Around the same time, some ideas started to appear about a decentralized form of money. Money that would never be emitted by a central authority. A paper authored by a certain Satoshi Nakamoto and entitled "[Bitcoin: A Peer-to-Peer Electronic Cash System](#)" was published on the web on 31 October 2008. This paper usually is conceived as the foundation of all further developments in cryptocurrencies.

## The main features of cryptocurrencies

The paper defined the main principles of a decentralized system of validation, using electronic signatures and hashes, which could be used to emit digital money, that is to say, a *blockchain*<sup>1</sup> system. One of the core and novel ideas is the extensive use of cryptography to create an *intrinsic* value because, in the paper, the Bitcoin is “extracted” - in a process which “mimics” - in a cryptographic way - the mining of gold and precious metals.

After Bitcoin, a great number of other cryptocurrencies were created, the most important are the Ethereum-like currencies using a system slightly different from Bitcoin.

As of 2019, it is estimated that more than [1,600 cryptocurrencies](#) are available on the internet.

They all share mostly several common features:

- Decentralized system;
- “Community”-based money;
- Not dependent (at least directly) on a country;
- Using cryptography to create intrinsic value;
- Very fluctuant.

The cryptocurrencies themselves are not available directly to their owners, they stay in *the blockchain*. Usually the knowledge of a private cryptographic key guarantees that someone is the owner of a certain quantity of cryptocurrency.

## What do cryptocurrencies represent?

Cryptocurrencies are still relatively new. Nevertheless, there are an estimated amount of 17.3 million of BTC in circulation at the moment<sup>2</sup> which - depending on the value of a BTC - may total several hundreds of billions of dollars.

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<sup>1</sup> Contrary to what many people believe, the Bitcoin creators did not invent the blockchain technology, it was already present since 1991 from the works of Haber and Stornetta, but the creators of Bitcoin developed a decentralized blockchain and pushed that technology into a financial context.

<sup>2</sup> Most of these BTCs are supposed, anyway, to be used as a niche by banks and financial trusts

If we compare this to the physical circulation of the dollar which is estimated to be 1.5 trillion dollars, we see that the BTC in circulation as of 2019 may represent up to 10% of the amount of total fiat money emitted by the USA and actually in circulation.

At such a stage it is obvious that the BTC - and the other cryptocurrencies- represent a threat to the “hegemony” of the US dollar.

Nevertheless the BTC for instance suffers from poor security. While it should be impossible to counterfeit a BTC (at least till quantum computers are not fully operational ), it is *not* extremely hard to steal them without physical violence which makes them not eligible as a good replacement for fiat money.

The lack of central laws - like a central bank authority - in the decentralized world of the BTC creates an ecosystem where trust is hard to get and where massive digital robberies are often making the headlines.

Finally, principally because of these risks, the value of cryptocurrencies can be extremely fluctuating and unstable, making their use as fiat money very difficult.

The rise of the BTC, and the cryptocurrency in general, masks another phenomenon: the arrival of the national digital fiat currencies and especially the arrival of the digital (US) Dollar.

## The Digital Dollar

The digital dollar, that is to say, the (national) digital cash-less representation of the dollar is still a project but analysts expect its realization in the short future, especially given the context of the competition with the cryptocurrencies.

## The example of Sweden

In Sweden - as of 2019 - there are entire areas that are no longer using cash for their transactions but using mainly credit card or mobile payments and where cash is even prohibited.

The government of Sweden is known to work on a project - eKrona - where cash would simply disappear from all the territory of Sweden and be replaced by a digital national

currency. Sweden is not in the eurozone and does not use the Euro, instead, it uses the Krona. The digital currency would use a variant of blockchain technology to trace the financial transaction involved with the money. Therefore someone receiving eKrona as payment for goods or as a salary would be able to trace the history of the money from its creation, what it has been used for, and which people or companies handle it.

Such a "transparency" would, of course, revolutionize the relationship of people with money and would make wrong the old Roman adage, *Pecunia non olet*<sup>3</sup>.

## What we know about a national digital dollar

There do exist as of 2019 cryptocurrencies that try to be a "digital dollar". The [Digital Dollar Coin](#) or the USD Coin (USDC) are some examples. Mainly they maintain parity with the value of the national US dollar. Some others maintain parity with other currencies and even with gold or precious metals prices. They are named "stablecoins".

Yet they are "just" cryptocurrencies that try to "mimic" a real national digital dollar.

The *Smart Contracts* that go with certain types of cryptocurrencies known as Crypto Tokens, have been well accepted and adopted by major actors in the financial sector: insurance companies, banks, etc. So there is no reason why a digital Dollar - as a central bank-supported currency - should meet hindrance.

While there is not much publicity about nation-backed digital currencies (central bank digital currency or CBDC ), [some reports](#) suggest there is a great amount of work behind the concept - mostly done secretly as a great number of central banks are working actively on a CBDC project<sup>4</sup>.

We could therefore only speculate about what a Central Bank digital dollar could look like:

- Certainly, *centralized* blockchain technology be able to trace the money;
- Improved cryptography, eventually addressed the arrival of quantum Computers;
- Physical electronic token equipped with protected memory, HSM-like, acting as a wallet or even as the physical representation of the digital dollar;

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<sup>3</sup> Literally, "money does not stink"

<sup>4</sup> According to "BIS Papers No 101 Proceeding with caution – a survey on central bank digital currency - January 2019", 63 central banks answered a CBDC survey. The 63 central banks represented countries close to 80% of the world's population and over 90% of its economic output. Among these banks, 70% admitted to conducting a CBDC project.

- Direct emission ( no mining ) therefore not using Crypto mining effort as an intrinsic value;
- Strong security to protect the cryptographic keys used by the currency;
- Stability.

## Crypto Currencies Vs Digital Dollar

Finally, let us see who would win in a match between cryptocurrencies and a national digital dollar.

The digital dollar would have much more assets, especially stability. It is hard to pay for goods and receive a salary with a BTC which can lose 50% of its value in a few days!

Yet the cryptocurrencies would still be popular for dubious transactions, like the ones in the dark web where they have become more or less the norm and so, they would become the symbol of a “rebel” economy, mostly black market, escaping regulations and controls created by a national digital dollar.

Therefore in the "legal" financial world, the digital dollar would win, while in the "shadow" underground financial markets the cryptocurrencies would win.

Even with a digital dollar there still will be exchange points to convert cryptocurrencies from and to digital dollars.

One thing is sure, we are near a global financial revolution with the worldwide adoption of digital money all over the world as proof that our planet is changing!