

Is Cryptocurrency Money?

The below is concise analysis. For in-depth understanding of this complex subject matter, please read, for example, the following books:

- “China’s Digital Currency Revolution. Cashless” by [Richard Turrin](#).
- “The Cryptocurrency Cold War” by [David Birch](#).

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Disclaimers:

We are not responsible for decisions you make based on the information we provide here.

Whether or not cryptocurrency is money is irrelevant to whether buying cryptocurrency is a good or bad investment. We do not give you any investment recommendations.

1 Definitions

Before we can answer this question: “Is Cryptocurrency Money?”, we must come to some agreement on what money is, what cryptocurrency is, and what your preferences are when you deal with money.

1.1 Money

Some people may think that money must be green, some will assert that only fungible cash is real money. Any disputes on this subject without definition of Money would be counterproductive.

Let’s agree on a set of Qualities that characterize Money. We suggest using the ones listed [here](#) (Top 8 Qualities of an Ideal Money Material, by J Singh).

We like these Qualities because they are orthogonal, i.e., do not depend on each other, and we cannot think of additional qualities that can characterize Money even better.

We do understand that Money perfectly satisfying all these qualities, the “Perfect Money”, does not exist, and it would be hardly reasonable to expect this from cryptocurrencies.

1.2 Cryptocurrency

There are thousands of cryptocurrencies, and we need to select some “typical” ones, to make further analysis feasible.

Let’s focus on the following candidates (we do not *assume here that these representatives are the best in their kind; please do not assume that we recommend or not recommend that you use them*).

- Cryptocurrency [Bitcoin \(BTC\)](#) as a representative of classic cryptocurrency concept.
- Cryptocurrency [Tether \(USDT\)](#) as a representative of **Stablecoins**
- Central Bank Digital Currency (**CBDC**). Some of them, strictly speaking, may not necessarily be a cryptocurrency. Some implement the logic of cryptocurrency having all nodes in the Central Bank custody. It looks like all of them implement non-fungible token (NFT) approach to their digital fiat units. See more details in the Appendix below.

1.3 You

Different people may value money for different qualities. So, we will continue this analysis from the following points of view (POV).

- **Fanatic** or Cryptocurrency Fan's **POV**. The Fan truly believes that Cryptocurrencies will eventually replace all Money and is prepared to waive some concerns.

You would ask: what's the point to argue with this guy if he already knows that the cryptocurrency is money? There is a point. We need to listen his arguments and understand what exactly he wants to sacrifice and what he values most in cryptocurrency when he uses it as money.

- **Pragmatic POV**. The pragmatic has concerns and doubts. He compares money with cryptocurrencies looking into details, and he is prepared to use some tools as money when it is practical to do so.

We hope that these somewhat extreme POVs will help you to find your position, somewhere in the middle.

2 Analysis of Top Qualities of Money

So, let's start looking into the Top 8 Qualities of Money, one by one.

2.1 General Acceptability

J Singh: "It is the very essence of money. Unless a person knows that the money which he accepts in exchange for his goods or services will be taken without any objection by others as well, he will not accept it".

POV	BTC	USDT	NFT CBDC
Pragmatic	<p>Not Money</p> <ul style="list-style-type: none"> • There are only several hundred merchants accepting BTC, and I don't by anything from them. • My employees and suppliers prefer to be paid in fiats. • Tender in BTC is not legal in my country. 	<p>Not Money</p> <p>Like BTC</p>	<p>Eventually, Money</p> <ul style="list-style-type: none"> • Such projects are still in design, pilot, or testing phases. It is a legal tender and business will be forced to accept it.
Fanatic	<p>Money</p> <ul style="list-style-type: none"> • I have few contractors and they are mostly fine to be paid in BTC or another crypto that I can easily exchange to BTC. • Legal tender is a problem of Bitcoin and cryptocurrency exchanges. They have lawyers efficiently taking care of compliance policies. 	<p>Not Money</p> <p>Like BTC</p>	<p>Money</p> <p>Agree with the Pragmatic POV.</p>

2.2 Portability

J Singh: “A commodity fit to be used as money must be such that it can be easily and economically transported from one place to the other”.

POV	BTC	USDT	NFT CBDC
Pragmatic	<p>A bit less than Money</p> <ul style="list-style-type: none"> • BTC transfer transactions can be more expensive compared to card and wallet (PayPal-like) transactions. • Blockchain confirmation for transfers takes unacceptably long time. • When there is no Internet connection or power, BTC transfer is not possible. <p>Ethereum-like block chain logic improves transactions throughput and confirmation waiting time. The cost of transactions is lower and predictable.</p>	<p>A bit less than Money</p> <p>Like BTC</p>	<p>Money</p> <ul style="list-style-type: none"> • Designs of International CBDC transfers are in flux, but solutions will be not worse than with classic cash. • Offline transactions are supported between two smartphones or other devices “storing” CBDC amounts in Trusted Execution Environment (TEE) when the smartphones are close to each other.
Fanatic	<p>Money</p> <ul style="list-style-type: none"> • BTC transaction speed and cost are lower than those of moving of paper cash. • SWIFT and interbank clearing are slower than Block Chain transactions. • Internet or power are down rarely, and when it happens, I have bigger problems, anyway. • Online banking does not work without electric power and Internet either. 	<p>Money</p> <p>Like BTC</p>	<p>Money</p> <p>Agree with the Pragmatic POV.</p>

2.3 Indestructibility or Durability

J Singh: “As money is passed from hand to hand and is kept in reserve, it must not easily deteriorate, either in itself or as a result of wear and tear”.

POV	BTC	USDT	NFT CBDC
Pragmatic	<p>A bit less than Money</p> <ul style="list-style-type: none"> I can lose my private key, hence all my BTC. Protection against this requires high skills, following regular procedures, and paranoid vigilance. If Bitcoin network ceases to exist or is taken over, I lose all my money. 	<p>A bit less than Money</p> <p>Like BTC</p>	<p>Money</p> <ul style="list-style-type: none"> Central Bank proposes some means of protection from being lost and stolen. CBDC accounts balances reserved in the Central Bank.
Fanatic	<p>Money</p> <ul style="list-style-type: none"> Keeping classic tangible money in my pocket is risky as well. Bitcoin is here forever. The risk of malicious take over is negligible. This is mathematically proven. 	<p>Money</p> <p>Like BTC</p> <ul style="list-style-type: none"> Moreover, the system provides its balance sheet in real-time. This allows to assess risks of USDT bankruptcy and sufficiency of their reserve. 	<p>Money</p> <p>Agree with the Pragmatic POV.</p>

2.4 Homogeneity

J Singh: “All portions or specimens of the substance used as money should be homogeneous, that is, of the same quality, so that equal weights have exactly the same value”.

A similar widely used term is “fungibility”

POV	BTC	USDT	NFT CBDC
Pragmatic	<p>Not Money. Privacy concerns</p> <p>NFT is not like fungible paper cash.</p> <ul style="list-style-type: none"> • All my transactions are published. If I pay to ShameFlix for a porno movie, or I pay to X&Y dating website, you will know about this. • Yes, my BTC account is pseudonymous but anybody whom I paid through it and who knows my identity can blow my pseudonymity. • If someone paid me by stolen NFT (even if I did not know about this at the time of accepting the payment) these NFT may be confiscated. • Privacy protection can be improved if I use a BTC wallet instead of direct BTC account, but this depends on the level of this wallet service protection. 	<p>Not Money.</p> <p>Privacy concerns</p> <p>Like BTC</p>	<p>Not Money. Privacy concerns and functional limitations</p> <ul style="list-style-type: none"> • Uncontrolled usage of private data by the Government. • CDCD Intentionally uses NFT, to prevent me from paying for cervices I am not entitled to. <i>E.g., if I got a subsidy in Digital Rubles for child support, I cannot use these NFTs-rubles for buying alcohol. It is more like food stamps than money.</i> • Fungible paper cash was the only means of payments not monitored by Government. NFT-based CBDC takes from me the last resort of privacy. • There is a little hope that fungibility of TEE-stored CBDC will be implemented for device-to-device CBDC transfer.
Fanatic	<p>Money</p> <ul style="list-style-type: none"> • I do not use BTC to do something wrong or something I should be ashamed of. • I am self-employed and I am not afraid that some HR will block me because I watch movies they do not like. • I am not so rich to be afraid of being traced by mafia to prey on me. • I am not in a witness protection program. • I trust my business partners. 	<p>Money</p> <p>Like BTC</p>	<p>Money</p> <ul style="list-style-type: none"> • I am prepared to spend my CBDC exactly as the government told me to. • I do not laundry money, finance terrorism, and evade taxes. • I do not run from corrupted government agents. • The government already traces practically all my activities via banks, card payments, Big Data platforms, street cameras, etc. NFT does not add much to the privacy concerns. Privacy is already an illusion.

2.5 Divisibility

J Singh: “The money material should be capable of division; and the aggregate value of the mass after division should be almost exactly the same as before”.

In this sense, cryptocurrency is better than traditional paper cash from Fanatic and Pragmatic POV.

2.6 Malleability

J Singh: “The money material should be capable of being melted, beaten and given convenient shapes”.

In this sense, cryptocurrency is better than traditional paper cash from Fanatic and Pragmatic POV.

2.7 Cognizability

J Singh: “capability of a substance for being easily recognised and distinguished from all other substances”.

In this sense, cryptocurrency is better than traditional paper cash from Fanatic and Pragmatic POV. This comprises better recognition of counterfeit money.

2.8 Stability of Value

J Singh: “Money should not be subject to fluctuations in value”.

POV	BTC	USDT	NFT CBDC
Pragmatic	<p>Not Money</p> <ul style="list-style-type: none"> There is no stability of BTC market value at all. 	<p>Money</p> <ul style="list-style-type: none"> As stable as classic fiat could be stable. 	<p>Money</p> <ul style="list-style-type: none"> CBDC is as stable as the classic fiat in the given country could be stable.
Fanatic	<p>Money</p> <ul style="list-style-type: none"> I like to take financial risks and I am skilled to deal with them. 	<p>Money</p> <p>Agree with the Pragmatic POV.</p>	<p>Money</p> <p>Agree with the Pragmatic POV.</p>

3 Pragmatic Summary

Whereas from the Fanatic’s standpoint all 3 options are Money, Let’s summarise the Pragmatic POV from the above analysis.

Quality	Classic Crypto – BTC	Stablecoin – USDT	NFT CBDC
1. General Acceptability	Not Money	Not Money	Eventually, Money
2. Portability	A bit less than Money	A bit less than Money	Money
3. Indestructibility or Durability	A bit less than Money	A bit less than Money	Money
4. Homogeneity (fungibility)	Not Money. Privacy concerns; worse than cash.	Not Money. Privacy concerns; worse than cash.	Not Money. Privacy concerns; worse than cash; functional limitations
5. Divisibility	Money, better than cash	Money, better than cash	Money, better than cash
6. Malleability,	Money, better than cash	Money, better than cash	Money, better than cash
7. Cognizability	Money, better than cash	Money, better than cash	Money, better than cash
8. Stability of Value	Not Money	Money	Money

4 Appendix. CBDC in Scope

We are focusing in this analysis on a generalized CBDC that implements Non-Fungible Tokens (NFT) which is the case for China, Russia, and Sweden, and it seems to be the case for Central Banks in many other countries (to be confirmed).

CBDC concept is well described in [Richard Turrin's Book "China's Digital Currency Revolution. Cashless"/](#)

- Part 2 of this book describes the China CBDC project.
- For another CBDC example, see [Russian Central Bank Digital Ruble](#), as of Q1 2022, it is supposed to be in testing.
- One more example is – [Riksbank's e-krona](#). The Sweden CBDC design is still in flux.

The above examples seem to be sufficient to outline the following main characteristics of the generalized NFT-based CBDC. (These characteristics are rather vague and may be changed with time).

1. Digital presentation of national fiat.
2. Personal CBDC wallet 100% reserved by the Central Bank.
3. Access to the CBDC wallet via Financial Institution (FI) infrastructure. FIs issue the CBDC on their customers' requests. Direct wallet access, bypassing FI – under discussions
4. Zero interest (APR), like regular cash in your purse.
5. Mandatory wallet owner identity (KYC)
6. CBDC is issued in form of Non-fungible tokens (NFT), similar to ones used in private cryptocurrencies.
7. Some NFTs may be bound by smart contracts (e.g., to forbid certain categories of payments).
8. Centralized ledger with diversified central bank nodes. This is not necessarily a cryptocurrency with shared ledger, strictly speaking. Contrary to China and Russia, Sweden project seems to be more cryptocurrency-like.
9. Offline CBDC usage is possible but limited, via Smartphone- or other device-based applications with Trusted Execution Environments (TEE). Fungibility of TEE-stored CBDC is either restricted or forbidden (current designs are vague about this).