



Could Cryptocurrency become a Global Currency?

Group 9

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Agenda

Introduction

- What are global currencies?
- How do cryptocurrencies work?
- Trends around cryptocurrencies

Challenges of crypto

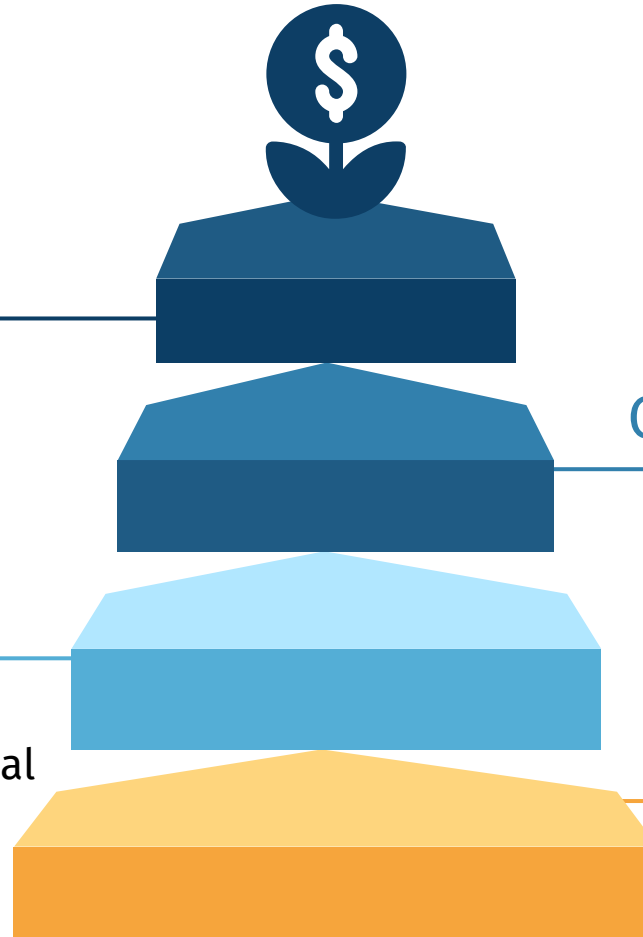
- Technical, social, economical challenges of crypto being a global currency

Crypto as a global currency

- Current state of global currencies
 - Crypto as the next alternative

Conclusion

- How do we get there?
- Current crypto initiatives



The image features several gold-colored Bitcoin coins with the 'B' logo, scattered across a background of out-of-focus US dollar bills. The coins are in sharp focus, while the currency notes are blurred, creating a sense of depth. The word 'Introduction' is overlaid in a bold, black, sans-serif font on the left side of the image.

Introduction

What are global currencies?

- Accepted for trade around the world
- Medium of Exchange
- **NOT** necessarily a reserve currency or the only currency available
- E.g. USD, Euro

Medium of exchange



- The most important function of money is to serve as a medium of exchange or as a means of payment. Money is also used to grant credits and extinguish debt. To be a successful medium of exchange, money must be commonly accepted by people in exchange for goods and services.

Measure of value



- Money serves as a common measure of value in terms of which the value of all goods and services is measured, expressed and can be compared. Money also acts as a unit of account. As a unit of account, it helps in developing an efficient accounting system because the values of a variety of goods and services which are physically measured in different units can be added up.

Store of value

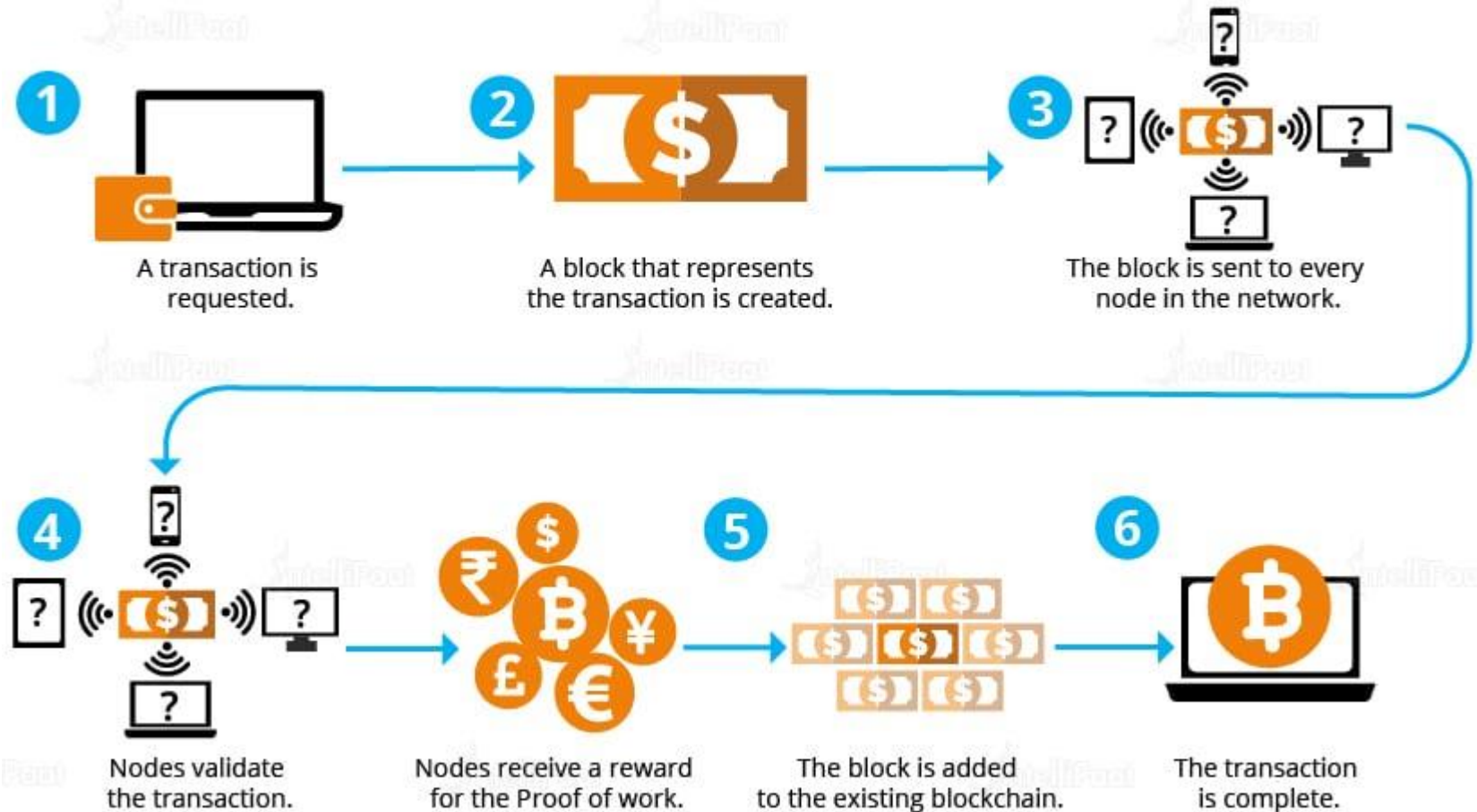


- Money provides a liquid store of value because it is so easy to spend and so easy to store. By acting as a store of value, money provides security to the individuals to meet unpredictable emergencies and to pay debts that are fixed in terms of money. It also provides assurance that attractive future buying opportunities can be exploited.



Recap: Cryptocurrencies

How Do Blockchains Work?



Is Crypto here to stay?

Crypto vs The Internet

| Kicking off the future | |
|---|--|
| 1969: ARPANET, the core of the internet, launches. | 2009: Satoshi Nakamoto anonymously launches the Bitcoin network. |
| Growing from mistakes | |
| 1988: The first malware bug prompts Cybersecurity growth. | 2013: A bug is discovered on the Bitcoin network that leads to more secure network solutions. |
| Early expansion | |
| 1989: Dial-up (and that sound you can never forget) is introduced and leveraged by AOL, CompuServe, and Prodigy, which are known as The Big Three. | 2016: More projects begin to utilize blockchain technology, with Vitalik Buterin launching Ethereum. following the introduction of Litecoin and Dogecoin. |
| Enter big business | |
| 1995: The consumer web begins, with companies launching like Amazon, eBay, and Yahoo. | 2019: Big businesses start to tap into the crypto network, mainly through Ethereum, such as Amazon, Chase, IBM, and Microsoft. |
| Enter government | |
| 1996: Congress starts paying attention, starting with the Communications Decency Act. | 2019: Government starts to discuss crypto regulation. |
| Testing the boundaries | |
| 1997: China begins implementing restrictive laws and censoring internet content. | 2020: China begins to restrict cryptocurrency transactions by banning crypto and national Bitcoin mining. |
| Regulation | |
| 2010: FCC establishes net neutrality rules. | 2022: Congress gets an education on crypto and Web3 while building frameworks for stablecoin and CBDC adoption. |

Is Crypto here to stay?

Trends



01

More institutions are actively allocating capital



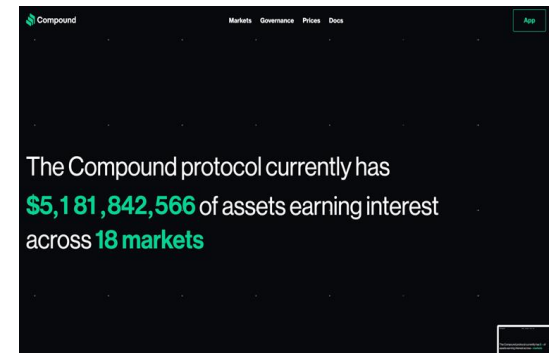
Cryptocurrencies
169-Year-Old MassMutual Invests \$100 Million in Bitcoin

By Olga Kharif
December 10, 2020, 9:15 PM GMT+1 Updated on December 10, 2020, 11:22 PM GMT+1

► Investment represents 0.04% of its general investment account
► Insurer also makes \$5 million equity investment in NYDIG

02

More use in DeFi



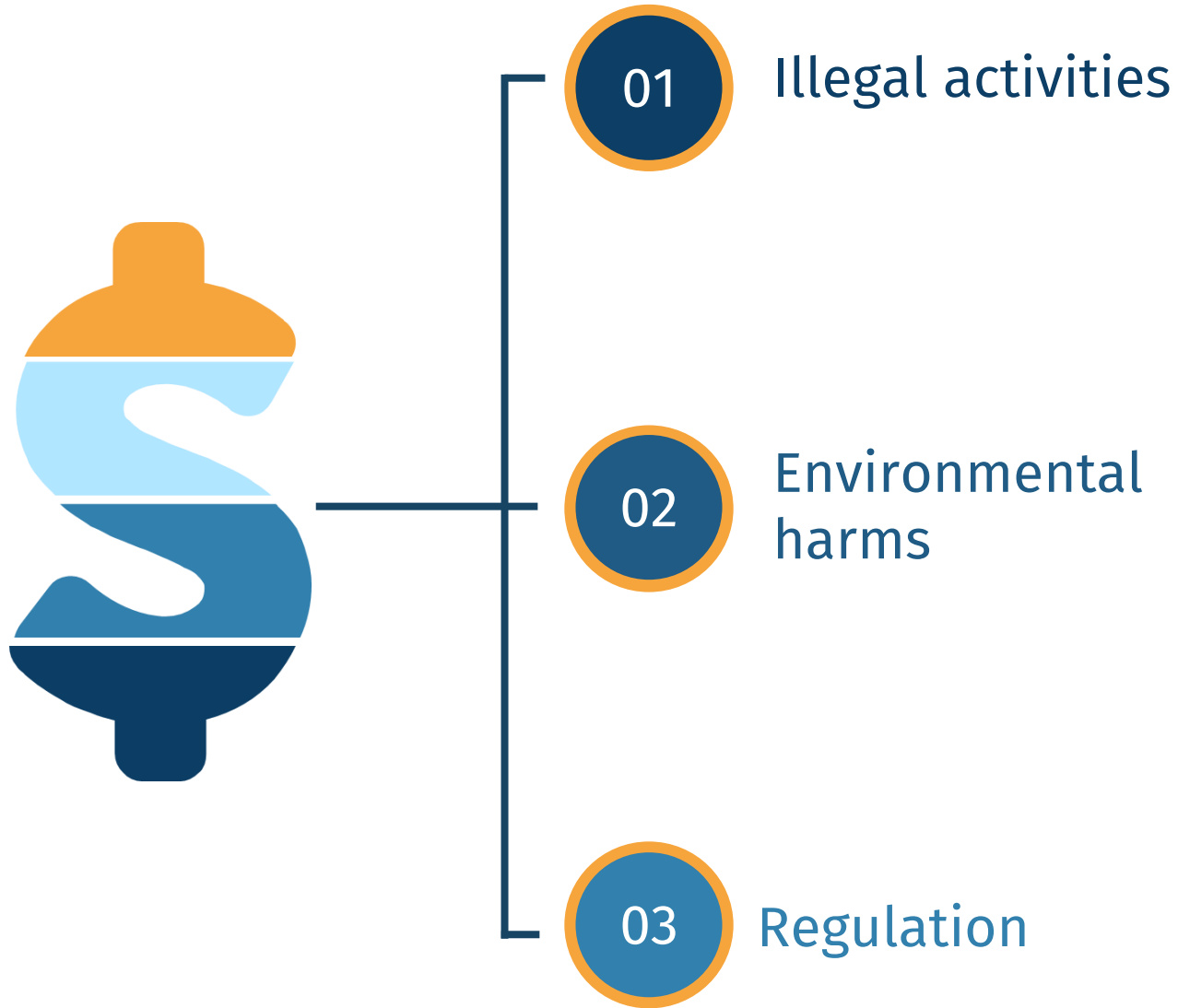
The Compound protocol currently has
\$5,181,842,566 of assets earning interest
across **18 markets**

03

Stablecoins may alter the crypto ecosystem

Is Crypto here to stay?

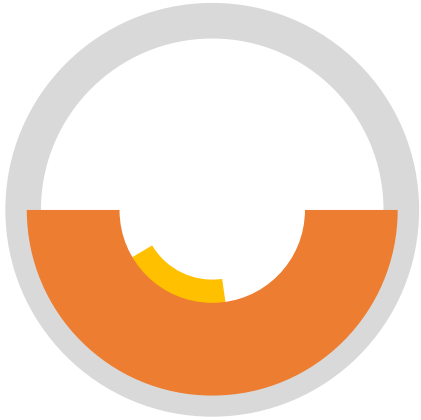
Doubts



The image features several gold-colored Bitcoin coins with the 'B' logo, scattered across a background of out-of-focus US dollar bills. The text 'Crypto as a Global Currency' is centered in a bold, black, sans-serif font.

Crypto as a Global Currency

Bitcoin emerges



1995

DigiCash in 1995 by David Chaum, utilising his privacy-protecting formula. It was implemented as an experiment but the company went bankrupt in 1998.



1998

BitGold by Nick Szabo, utilising own PoW consensus mechanism. However, it was never implemented.



2009

First commercial transaction using Bitcoin occurred in 2010, when the developer and early Bitcoin enthusiast Laszlo Hanyecz purchased two pizzas for 10,000 Bitcoins.

Cryptocurrency's Appeal to Masses



Inflation

Controlled by central banks through money printing



Financial Institutions' frauds

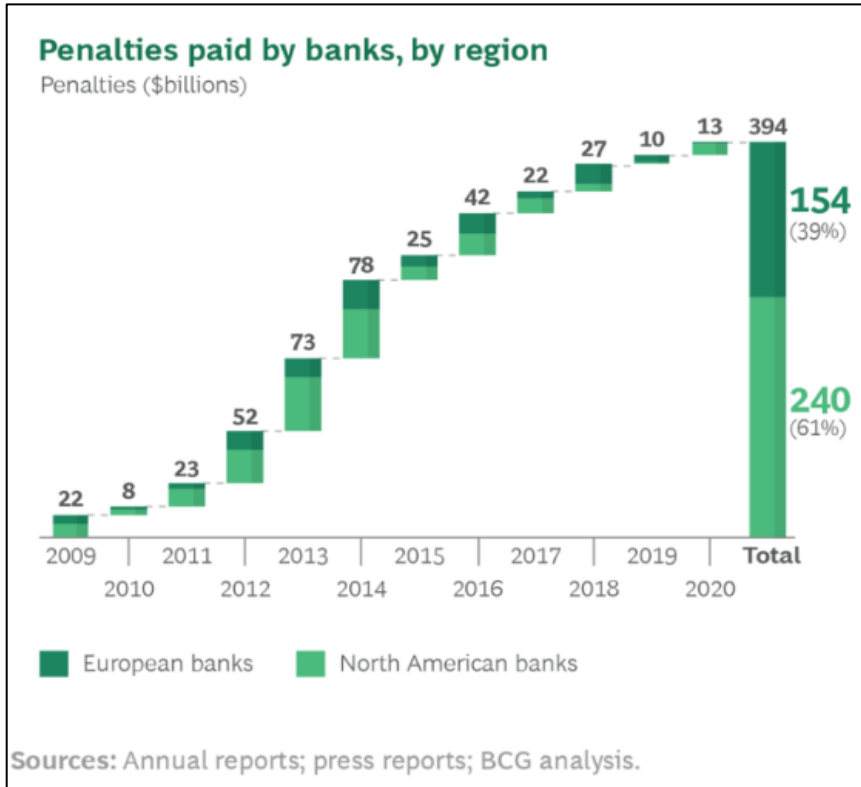
Livelihoods affected but banks just pay off fines to regulators



Lack of privacy

Able to trace back or identify transactions without individual's consent

Financial institutions' lapses and frauds



Wells Fargo

- Massive \$3 billion penalty for historic account fraud
- Created millions of fake accounts using fraudulent customer signatures
- Employees of the bank used their own contact details on application forms

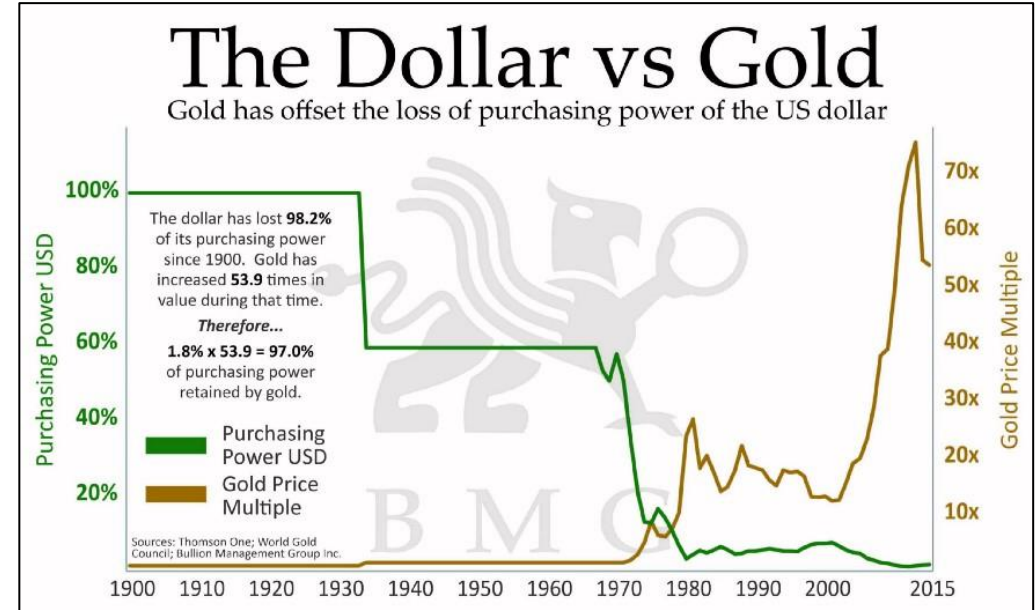
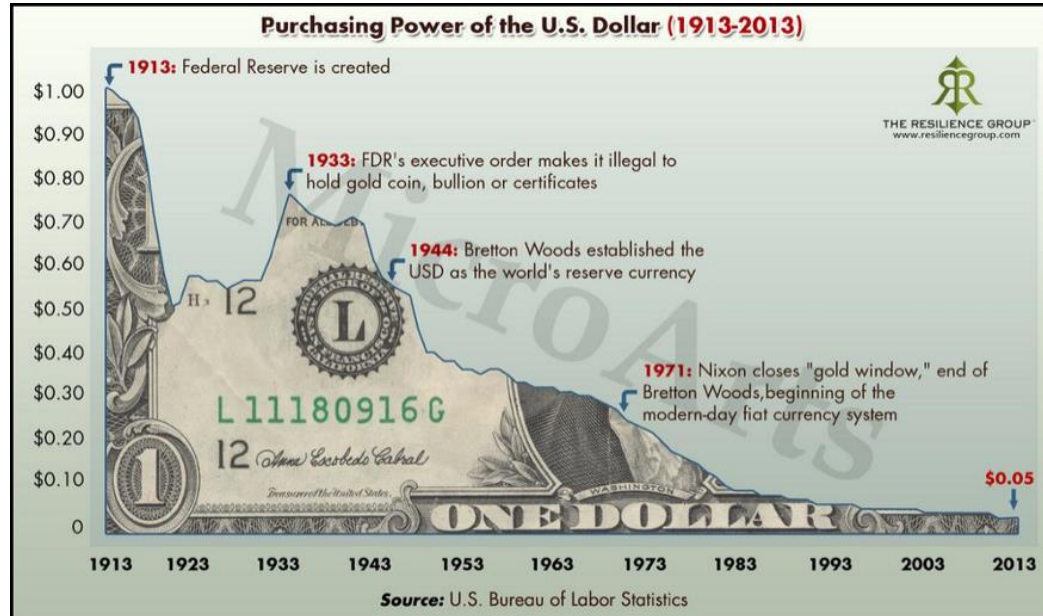
JPMorgan Chase & Co

- Paid more than \$920 million and admitted to wrongdoing to settle federal U.S. market manipulation probes into its trading of metals futures and Treasury securities
- Between 2008 and 2016, JPMorgan engaged in a pattern of manipulation in the precious metals futures and U.S. Treasury futures market
- Traders would place orders on one side of the market which they never intended to execute, to create a false impression of buy or sell interest that would raise or depress prices
- This manipulative practice, which is designed to create the illusion of demand, or lack thereof, is known as “spoofing.”

1MDB

- More than US\$4.5 billion was stolen from 1MDB by high-level officials between 2009 and 2015
- To pay for real estate, art and other luxury items, with the help of the Goldman bankers
- Goldman Sachs Singapore will pay US\$122 million (\$\$165 million) to the Singapore Government for its role in bond offerings related to 1MDB
- The Commercial Affairs Department (CAD) has served Goldman Sachs Singapore a 36-month conditional warning in lieu of prosecution for three counts of corruption

Comparing Fiat, Crypto & Gold



Fiat currency is

- Money/legal tender issued by the Government and regulated by Central Bank
- Not backed by anything. It was once backed by gold but was taken out in 1971

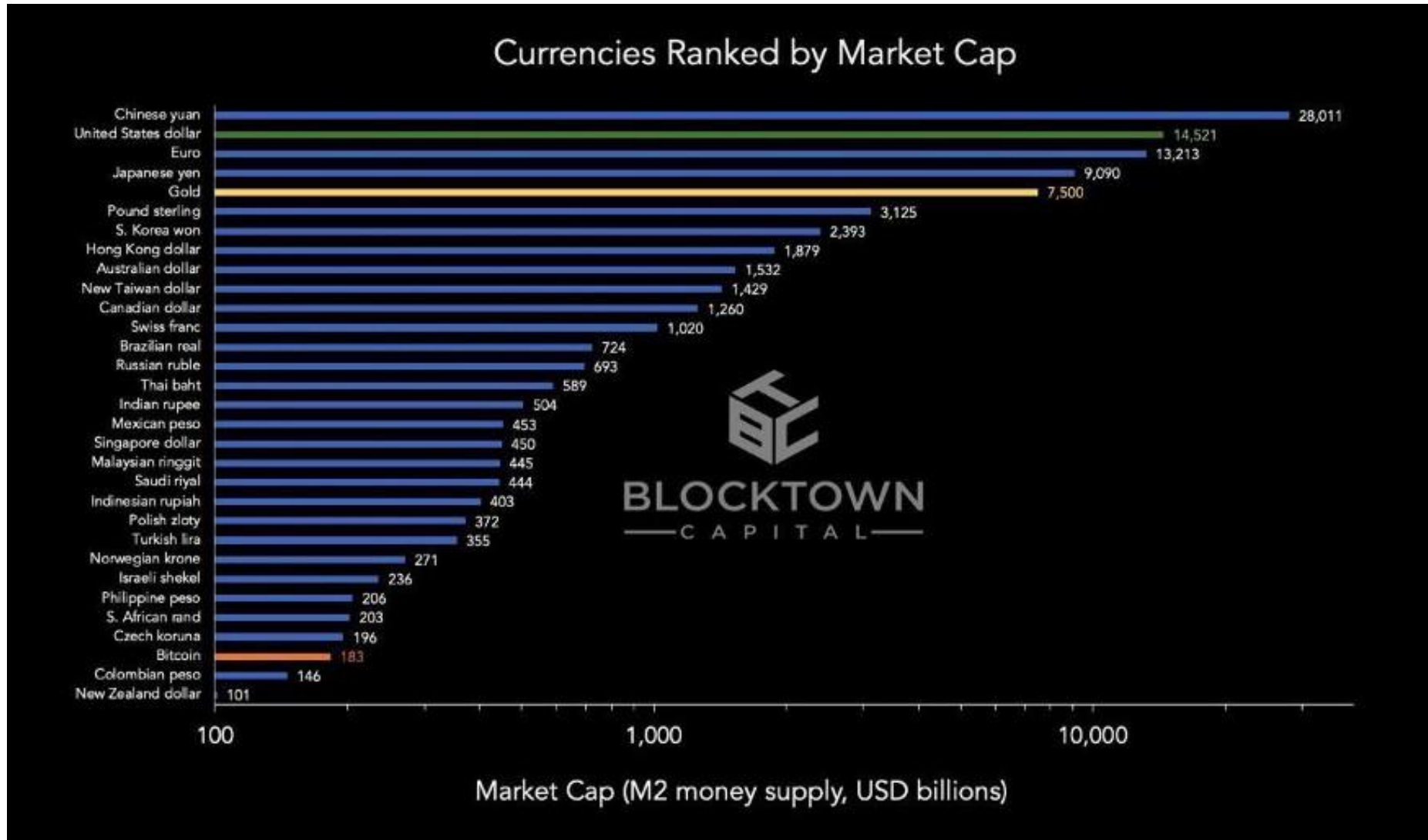
Inflation in terms of Fiat and in terms of BTC

- Loss of purchasing power of money
- The total supply of Bitcoin is capped at 21 million, which reduces every 4 years until its full 21 million supply is available to all.
- Predetermined scarcity

The only weakness is Bitcoin's short history...

| Traits of Money | Bitcoin | Gold | Fiat |
|------------------------|----------|----------|----------|
| Verifiable | High | Moderate | Moderate |
| Fungible | High | High | High |
| Portable | High | Low | High |
| Durable | Moderate | High | Low |
| Divisible | High | Low | Moderate |
| Scarce | High | Moderate | Low |
| Established History | Low | High | Low |
| Censorship resistant | High | Moderate | Low |
| Unforgeable Costliness | High | High | Low |
| *Openly Programmable | High | Low | Low |
| *Decentralized | High | Moderate | Low |

Bitcoin is among the top 30 currencies by Market Cap



What do governments actually think about Cryptocurrency & Inflation?

- History has shown that governments may fail to control their own nation's currency.
- In fact, governments do not have full trust in their currencies as many countries in the world are stockpiling gold.

Escudo (Chile)

Salvador Allende, elected president nationalised industries and dramatically increased social spending, to redistribute wealth to the poor. He funded it through printing money
(1 : 10³)

Sol (Peru)

Failed foreign investment Government program led to debt escalated in 1980s while investments dried up.
(1 : 10⁶)

Dollar (Zimbabwe)

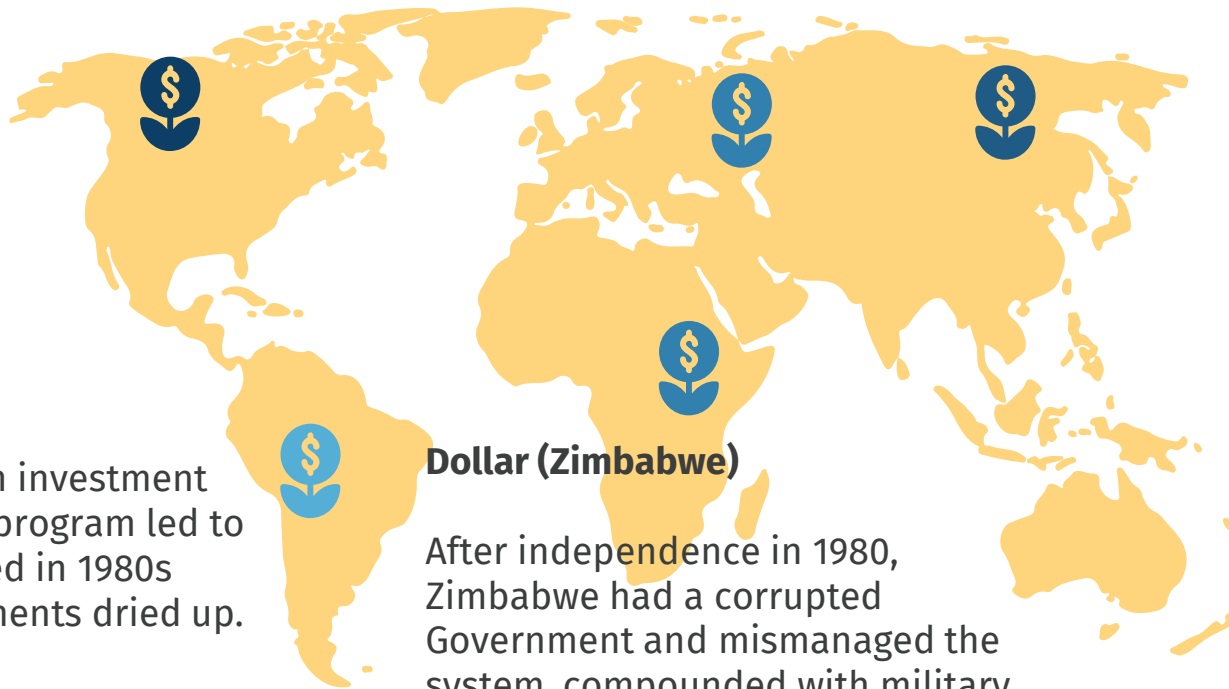
After independence in 1980, Zimbabwe had a corrupted Government and mismanaged the system, compounded with military coup, which increased spending and printed money
(1 : 10⁷)

Papermark (Germany)

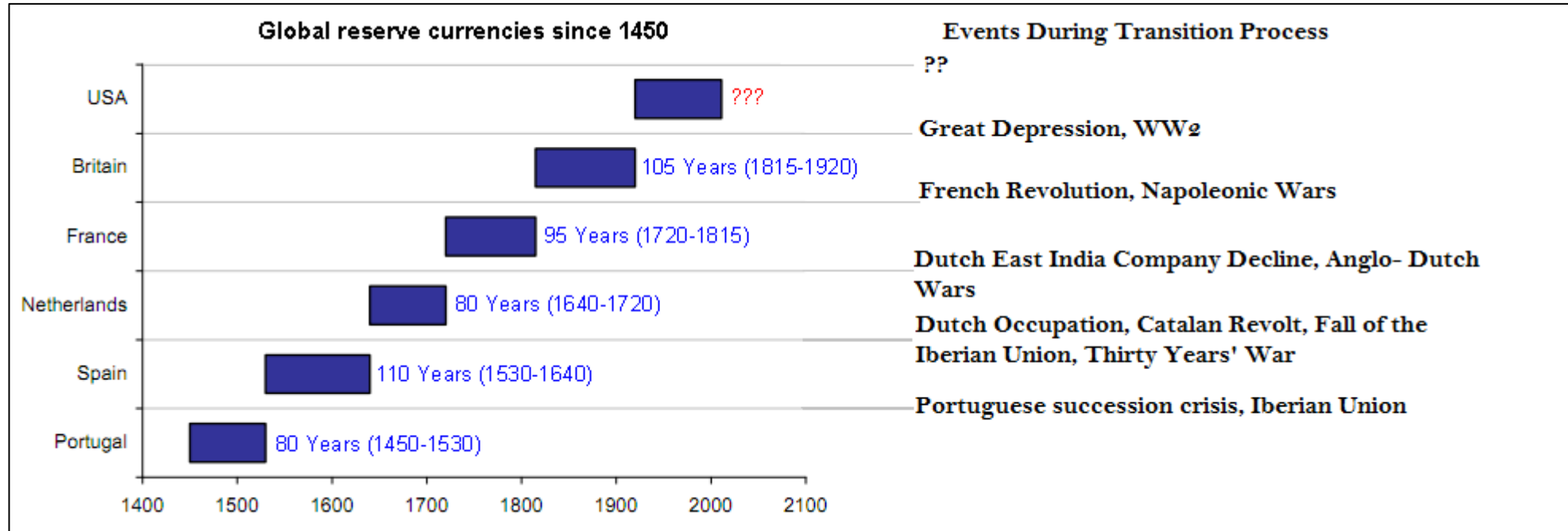
After WWI, Germany printed money to repay salaries and war debts in Treaty of Versailles.
(1 : 10⁹)

Peso (Argentina)

OPEC oil embargo in the mid-70 led to severe recession and Argentina printed money instead of reduce spending or borrow.
(1 : 10⁸)



Dominant Status of any currency does not last forever...



Some thoughts here...

China and Russia would find it intriguingly tough to accept USA's dominant status of the world's reserve currency, given its escalating debts. USA has 60 years of real deficits, 45 years of trade deficits and at least \$200 trillion of debts and unfunded liabilities.

What happens to Fiat when Bitcoin becomes the eventual medium of exchange?



The future of Fiat reference to Bitcoin is path dependent on

- People's perception of Bitcoin as store of value
- The adoption, security model (no hacks), no down time, over the course of years
- Governments' attitude towards Bitcoin (i.e to what extent are they willing to give up control of money supply and the monetary policy tool)
 - What Governments can do is to find suitable ways to get out of its long-term debt issues, manage their fiat money properly through fiscal spending discipline and controlled monetary policies

1. Displacement of Fiat currency will spiral to an unstable equilibrium and value of Bitcoin skyrocket, if only the minority continues to hold Bitcoin and Governments are unable to re-distribute Bitcoin across the society.
2. Introduction of a new Fiat currency will only stabilise the economy if people still trusts the new currency as a medium of exchange and the Fiat system

*As of 2019, the top 10 Bitcoin addresses accounted for 5.6% of the total supply, the top 100 14.7%, and the top 1,000 34.6%

The image features several gold-colored Bitcoin coins with the 'B' logo, scattered across a background of out-of-focus US dollar bills. The text 'Challenges of Crypto' is centered in a bold, black, sans-serif font.

Challenges of Crypto

Challenges – Bitcoin as a Global Currency (1/2)

Deflationary
nature of BTC
can encourage
hoarding

Deflation – general decrease in prices of goods and services associated with contraction of money supply and credit

Implications of fiat currency – control of money supply, time value of money

BTC hoarding – value of BTC may outpace value of assets

Unequal
distribution of
BTC

How many BTCs are mined? Approximately 19 million

What is this power disparity? 0.01% of BTC holders control a third of the supply

Why does it matter? Increasing income and power disparity

Challenges – Bitcoin as a Global Currency (2/2)

Governance of BTC

Optimum Currency Area – geopolitical area with a single, unified currency

Has Economic and Monetary Union worked for Europe?

Inflation measurement index for BTC

Operational issues

Transactions per day - 180,000 transactions per day

Proof of Work isn't sustainable – 1 transaction = 750 KW energy

Transaction fee incentive

Conclusion

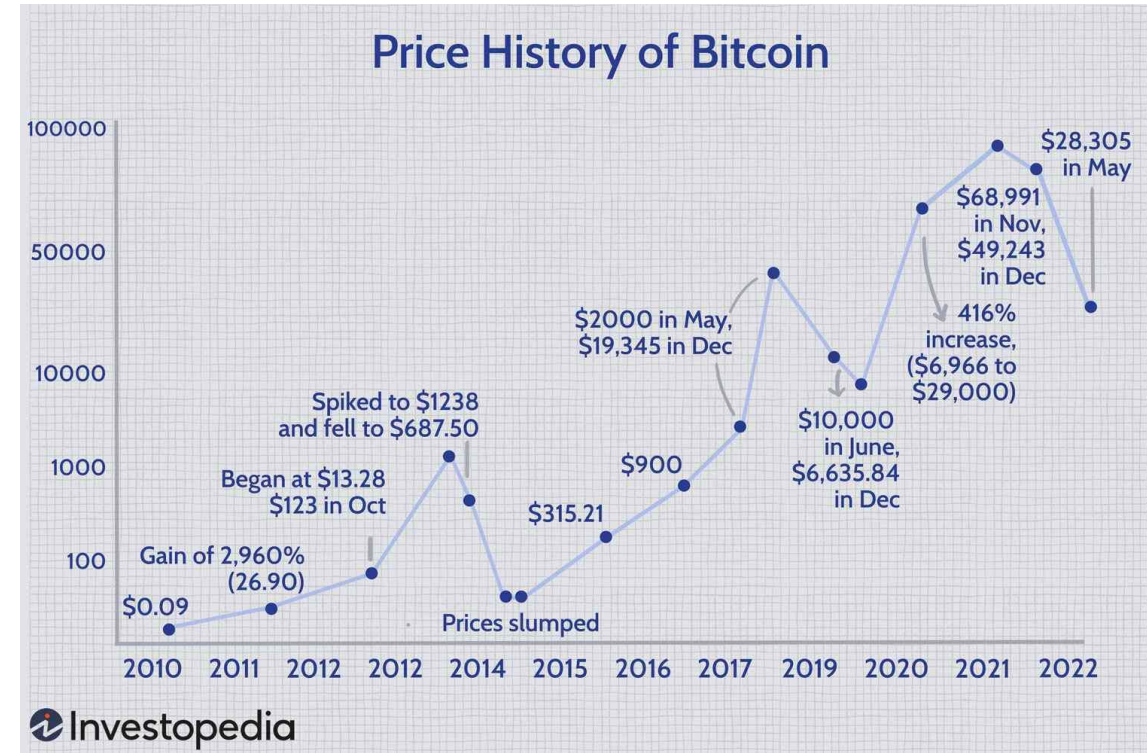
The image features several gold-colored Bitcoin coins with the 'B' logo, scattered across a background of US dollar bills. The bills are slightly out of focus, showing portraits of presidents. The Bitcoin coins are in sharp focus, with the 'B' logo clearly visible on the top-most coin. The overall composition suggests a connection between traditional fiat currency and digital cryptocurrency.

What now?

Low Volatility

Bitcoin's price fluctuates so much as it is mainly used as an investment asset now

- Influenced by volatile factors like investor and user sentiments, unclear government regulations and media hype
- Not stable like fiat currency due to:
 - Speculative demand – demand not derived from utility
 - Concentrated supply – highly concentrated among top investors with low circulation as it is rarely used for transactions (poor distribution)








What now?

Low Volatility

Introducing Stablecoins...

- Cryptocurrencies whose values are pegged to a fiat currency, commodity or financial instrument
 - Provide an alternative to more volatile cryptocurrencies with price stability
 - More suitable as a medium of exchange
 - Could be regulated by central authorities (if needed)

| # ▲ | Name | Price | 1h % | 24h % | 7d % | Market Cap ⓘ | Volume(24h) ⓘ | Circulating Supply ⓘ |
|------|--|----------|--------|--------|--------|------------------|---|----------------------|
| ☆ 3 |  Tether USDT | \$1.00 | ▼0.01% | ▼0.00% | ▲0.01% | \$66,319,623,696 | \$53,626,113,864 53,616,414,058 USDT | 66,307,627,907 USDT |
| ☆ 4 |  USD Coin USDC | \$1.00 | ▲0.01% | ▲0.01% | ▲0.03% | \$54,488,122,890 | \$8,989,111,015 8,986,970,506 USDC | 54,475,148,044 USDC |
| ☆ 7 |  Binance USD BUSD | \$1.00 | ▲0.04% | ▼0.04% | ▼0.10% | \$17,924,320,068 | \$6,981,520,303 6,980,142,361 BUSD | 17,920,782,348 BUSD |
| ☆ 12 |  Dai DAI | \$1.00 | ▲0.03% | ▲0.04% | ▲0.05% | \$7,468,893,656 | \$888,439,982 888,416,236 DAI | 7,468,694,032 DAI |
| ☆ 45 |  TrueUSD TUSD | \$0.9997 | ▼0.01% | ▲0.01% | ▼0.03% | \$1,189,867,301 | \$1,136,921,796 1,137,287,267 TUSD | 1,190,249,791 TUSD |

What now?

User Experience

- Using bitcoin is more complicated than fiat currency now
 - Requires a wallet and an account
 - Merchants and other people you transact with need to accept bitcoin

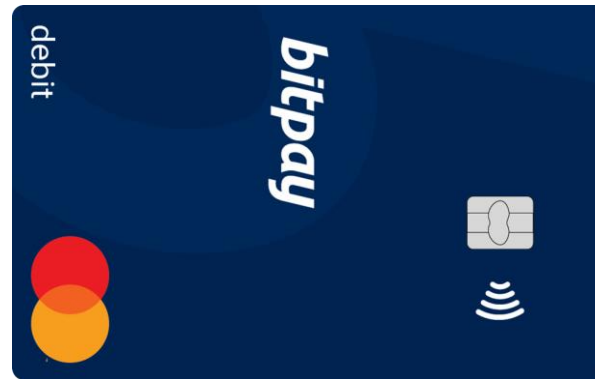


What now?

User Experience

Support adoption and usage of bitcoin for consumers and businesses around the world

Vast.bank
J.P.Morgan
Goldman Sachs

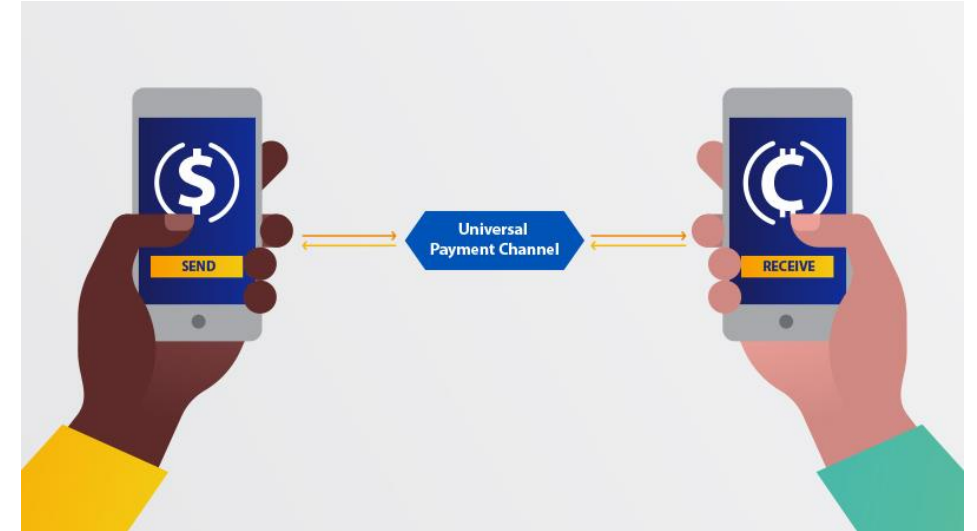


What now?

User Experience

Visa's Universal Payment Channel (UPC)

- Blockchain networks are all different, important to ensure that consumers can transact with different digital currencies across the world in order for crypto to be widely adopted
- A central “hub” interconnecting multiple blockchains networks – allows secure transfer of digital currencies
- Beyond just Bitcoin – can support stablecoins like USDC, CBDC like Swedish e-krona
- Allows central banks, businesses, and consumers to **seamlessly exchange value**, no matter the form factor of the currency



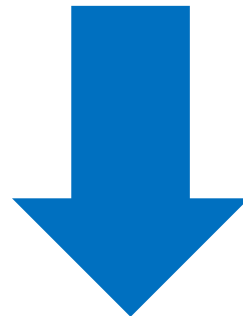
Conclusion: What's the future for crypto?

- If able to address its challenges by improving on Bitcoin or launching a new coin, crypto definitely has the potential to become a global currency used for trade around the world
- Could even ultimately be an alternative “digital” gold to hedge against inflation
- No one can predict the future of crypto accurately, **but the blockchain technology is here to stay**



Digital currencies like Bitcoin will replace or rival fiat within 5-10 years

- Deloitte



Bitcoin does not present a serious threat to U.S. dollar's status as the world's reserve currency

- James Bullard, President of St. Louis Federal Reserve

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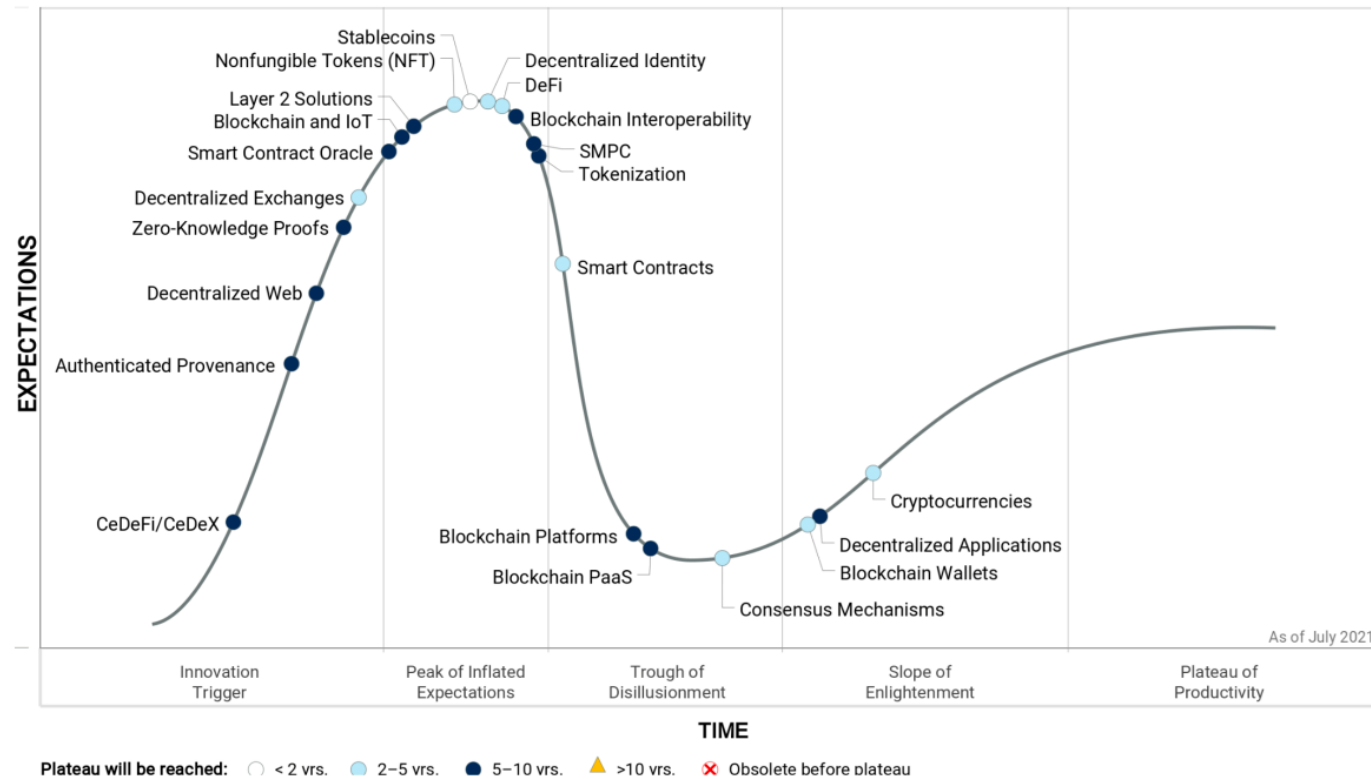
Thank you!

Food for thought...

- Would market forces be sufficient to distribute the supply of Bitcoin (or any cryptocurrency)?
- Would there be eventual centralization of any cryptocurrency if it were to be used as a global reserve currency?
- Would consumer protection become a concern for cryptocurrency as an alternative to legal tender?

Gartner's Hype Cycle for Blockchain

Hype Cycle for Blockchain, 2021



Source: Gartner (July 2021)

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