

# Bitcoin's Role in Financial Market

Its perceived role as a financial instrument and potential effects

# Attributes of “sound” money

Evolution of perceived roles: store of value → medium of exchange → unit of account

Attribute	What it means	Gold	Fiat	Bitcoin
Durable	<ul style="list-style-type: none"> <li>Not perishable or easily destroyed</li> </ul>	<b>A+</b> Physically strong and have been available for thousands of years	<b>C</b> Physical form of digital record - depends on “durability” of issuer	<b>B</b> Completely digital - depends on strength of network
Portable	<ul style="list-style-type: none"> <li>Easy to transport and store</li> <li>Facilitate long-distance trade</li> </ul>	<b>D</b> Physically dense – costly, risky & time consuming to transport	<b>B</b> Light-weight but can be subject to capital control	<b>A+</b> Digital “private keys” easily carried everywhere
Fungible	<ul style="list-style-type: none"> <li>Interchangeable with another of equal quantity</li> </ul>	<b>A</b> Essentially indistinguishable as an chemical element	<b>B</b> As fungible as allowed by the issuing institutions	<b>B</b> Digital records / transactions traceable on blockchain
Verifiable	<ul style="list-style-type: none"> <li>Easy to quickly identify and verify as authentic</li> </ul>	<b>B</b> Not immune from being counterfeited e.g. gold-plated tungsten	<b>B</b> History of counterfeit bills despite features exist to prevent counterfeiting	<b>A+</b> Cryptographic signatures provides mathematical certainty
Divisible	<ul style="list-style-type: none"> <li>Easy to subdivide as quantities exchanged becomes more precise</li> </ul>	<b>C</b> Difficult to divide into small enough quantities	<b>B</b> Divisible enough – down to pocket change	<b>A+</b> Can be divided down to & transmitted as a hundred millionth of a bitcoin
Scarce	<ul style="list-style-type: none"> <li>Not abundant</li> <li>Not easy to produce or obtain</li> </ul>	<b>A</b> Subject to new supply discovery and new method of mining	<b>F</b> Prone to constant increase in supply by nation states	<b>A+</b> Pre-determined: At most 21m bitcoin can ever be created
Established History	<ul style="list-style-type: none"> <li>Long period of perceived to be valuable by society</li> </ul>	<b>A+</b> As long as civilisation has existed	<b>C</b> Tendency toward eventual worthlessness due to inflation	<b>D</b> Short existence since its creation in 2009
Censorship Resistant	<ul style="list-style-type: none"> <li>Difficult to prevent owners from keeping / using</li> </ul>	<b>C</b> Susceptible to state regulation due to its physical nature	<b>D</b> Transmission can be regulated or outlawed	<b>A</b> Open, public, permissionless blockchain

# Evolution of Money Stage 1 – Store of Value

## Bitcoin is being viewed as financial instrument



- **MicroStrategy** began buying bitcoin since 2020
- Issued \$400m in bond to buy more in 2021
- Currently holds >125,000 bitcoin on B/S



- **Tesla** bought \$1.5b in bitcoin in 2021, sold a portion to “test liquidity” in March & realised \$128m gain
- Briefly accepted bitcoin as payment option but stopped by May over environmental concern
- Currently owns ~2b worth of bitcoin



- **Kevin O'Leary** drew comparison to Microsoft and Google, viewing cryptocurrencies as productivity software – “Bitcoin is not a coin, there is no physical counterpart, it’s code.”
- Professed the phrase “the 12<sup>th</sup> sector of S&P”, owning position of not more than 5% of portfolio as sound diversification



- **Ray Dalio** disclosed in interview that he owns “a tiny percentage of bitcoin on my portfolio to diversify.”
- “Bitcoin is like gold, though gold is the well established blue-chip alternative to fiat money.”

## Novel nature created regulatory uncertainties

### Legality

- Bitcoin vs fiat currency on-ramp & off-ramp
- Anti-money laundering concern
- Market price manipulation & validity as payment method

### Regulations

- Nature of bitcoin – commodity vs security vs money
- Regulatory body/bodies CFTC vs SEC vs Federal Reserve
- Jurisdictional oversight – country vs network vs nationality

### Accounting





























- Tangible vs intangible assets
- Gain on disposal of assets
- Realised vs unrealised gain/loss during holding period

### Tax Reporting

- Trading gain vs capital gain vs VAT
- Volatility of price and validity of valuation
- Estate / gift tax

Due to lack of regulations precedents, incumbent financial institutions have been cautious about providing services within the bitcoin investment ecosystem

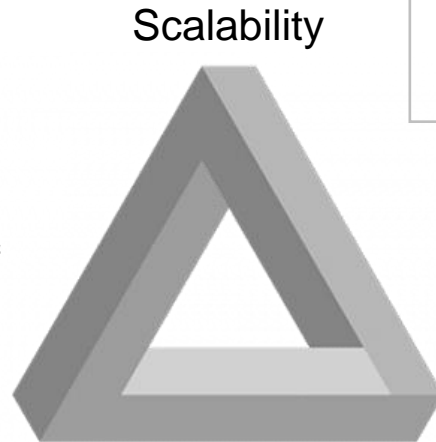
# Traditional Financial Institutions as Incumbents

Function	Service	Traditional Finance	Bitcoin Ecosystem
Trading	Fund transfer	Traditional banking platforms   	On-/off-ramp providers and Stablecoin issuers    
	Asset & derivative trading	Exchanges and OTC brokers   	Bitcoin exchanges   
Lending	Secured lending	Broker-dealers active in repo and securities lending   	Crypto lending platforms  
	Unsecured lending	Commercial banks and non-bank lenders    	Crypto banks 
Investing	Investment vehicle	Investment funds   	Crypto funds  

# Evolution of Money Stage 2 – Medium of Exchange

## Blockchain Trilemma

- Scalability refers to the ability to support high transactional throughput
- As use cases expand and adoption of Bitcoin network accelerates, the performance of a scalable blockchain won't suffer



Refers to the belief that decentralised networks can only provide 2 of 3 benefits at any given time with respect to decentralisation, security, and scalability.

### Security

- Network throughput can be enhanced by reducing the distribution of blockchain nodes either geographically, in number, or both
- However, this pivots towards centralization thus reduces security. When consensus is achieved with limited nodal distribution, a 51% attack is more likely to occur

### Decentralisation

- Decentralised networks crowdsource consensus, no one entity can control or censor the data of transactions
- However, achieving optimal decentralisation tends to decrease network throughput. As more miners secure the network through consensus, transaction speeds drop

## Scaling Bottleneck

While Bitcoin is decentralised and secure, it is only able to transact ~5 transactions per second (TPS)

- Enterprise blockchains e.g. Hyperledger's Fabric are secure and can handle high transactional throughput, but are centralised
- Blockchains that are fast and decentralised but insecure are vulnerable to hacks that are untenable in the long-term

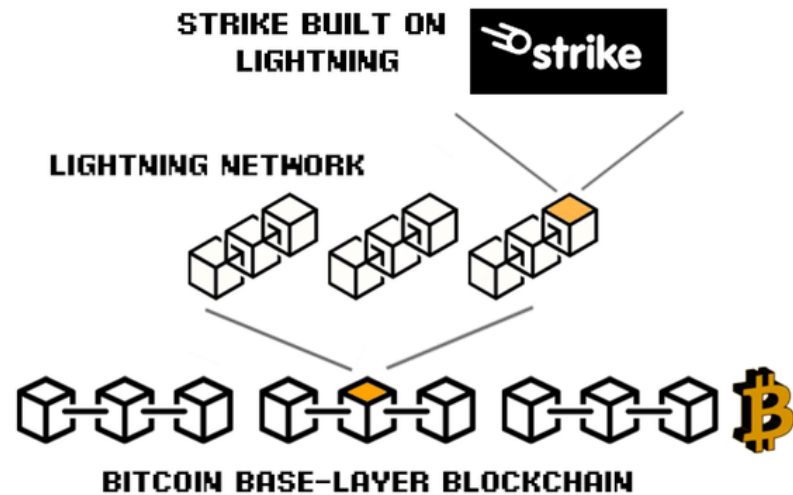
By comparison, traditional, centralised payment platforms can transact

- Visa: ~1,700 TPS
- Mastercard: ~5,000 TPS
- Paypal: ~200 TPS

# Payment / Remittance Platforms as Incumbents

The Lightning Network allows Bitcoin to become a medium of exchange that is fast, cheap and secure

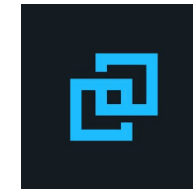
## Second-layer solution example: Strike



- Creates a private two-way channel between users, enables multiple transactions to take place outside of the main blockchain
- Transactions are recorded in finality as one single transaction on the main blockchain
- Payments between users are not publicly broadcast to the entire network
- In theory, the Lightning Network could handle millions of transactions per second

## Significance of Strike's service offering

- An open network that beats a closed system, offers more inclusivity and thereby reduces interoperable complexity
- Small transactions, even micropayments, can be sent instantaneously with miniscule fees, if any at all
- Consumers are able to make cheap digital payments using different “neo-banking” mobile apps e.g. Cash App, Zelle, Venmo
- Use cases: Twitter tipping, El Salvador Chivo wallet, Brittrex onboarding



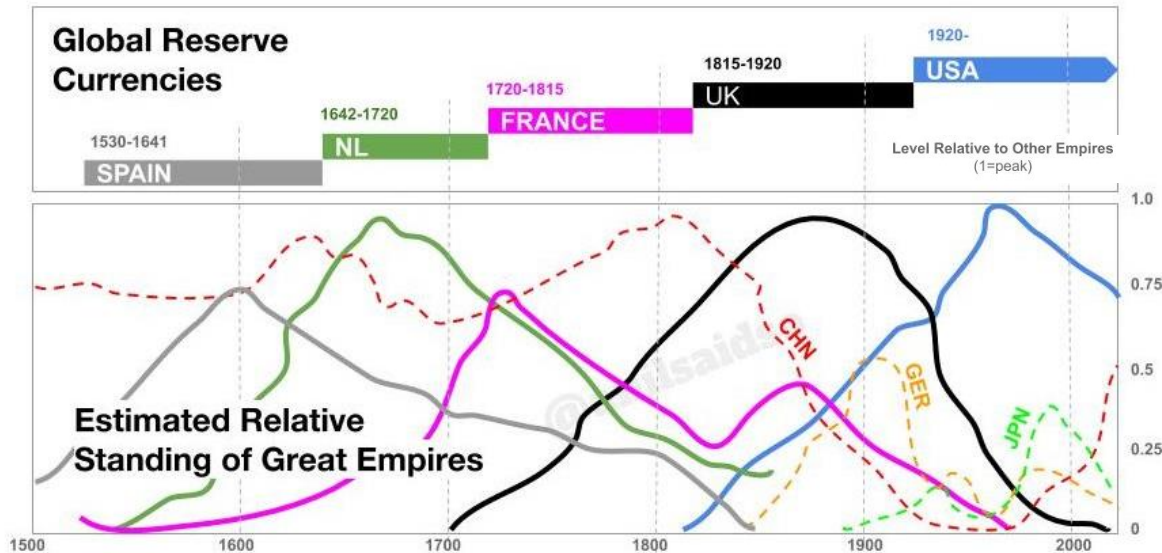
- Bitcoin is used as a transaction network rather than a currency. Strike:
- uses the Bitcoin network as a form of global payment rails
- converts payments firstly to Bitcoin, transacts through the Lightning Network, and then re-converts into the end currency of desire

## Traditional platforms



# Evolution of Money Stage 3 – Unit of Account

~750 currencies have existed since 1700,  
~20% remain, all of them devalued

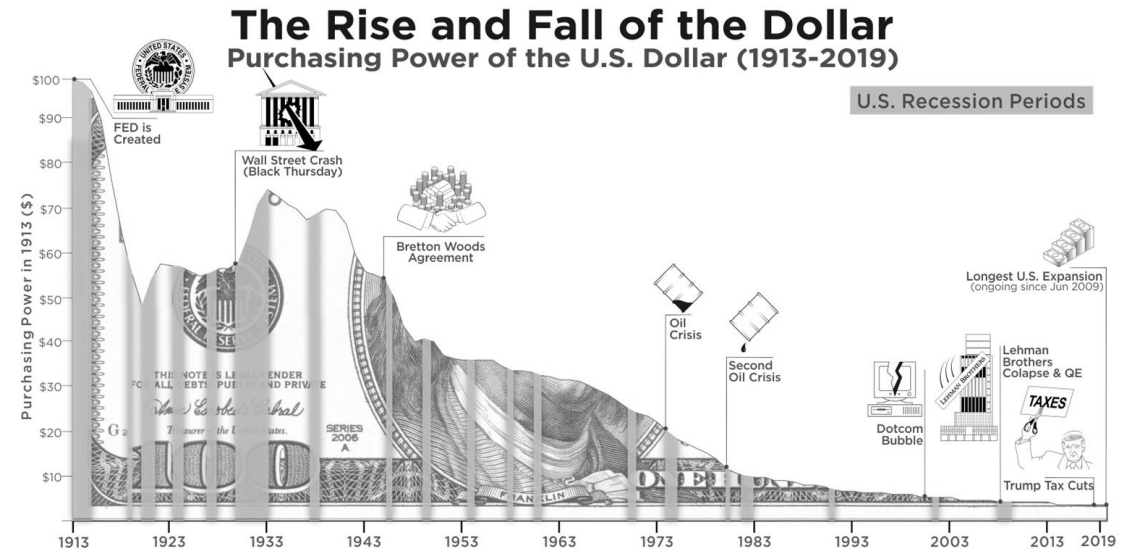


- Governments that do not have disciplined fiscal policies typically print money to reduce debt burden, which essentially taxes those who own it
- When holders of money and debt assets realize what is going on, they seek to sell their debt assets and/or borrow money to get into debt
- When the creation of money sufficiently hurts the returns of cash and debt assets, it drives flows out of those assets and into inflation-hedge assets like gold, commodities, inflation-indexed bonds, and other currencies (including digital)

→ This leads to a self-reinforcing decline in the value of money

Source: Principles for Dealing with the Changing World Order, Ray Dalio

Purchasing power of USD has steadily declined,  
gradually losing its global reserve currency status (?)



- When one can manufacture money and pass them out to everyone to make them happy, it is very hard to resist the temptation to do so
  - Throughout history the US central bank have consistently chosen the path of printing money and buying cash and debt assets, thereby preventing real interest rates from rising, and causing higher inflation
  - This reinforces the bad returns of holding cash and debt assets, posing higher likelihood of a breakdown in the currency and monetary system
- The purchasing power of USD since 1913 is down 96%, USD's share of global official reserves is the lowest in 25 years (since 1995, <60%)

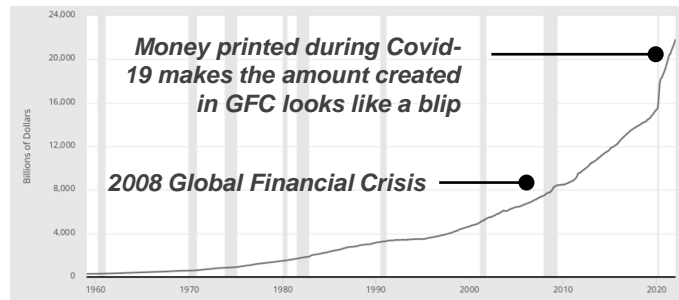
# Central Banks as the Ultimate Financial Incumbents (?)

Can Bitcoin be the next reserve currency?

Money Supply

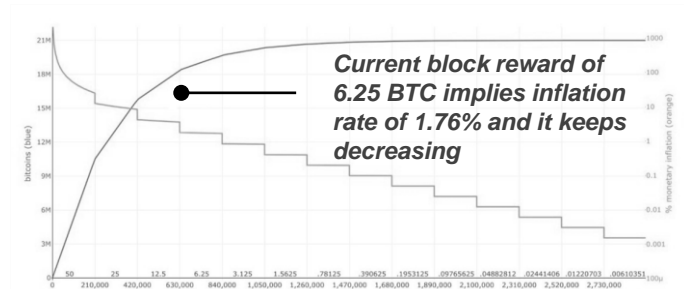
## Federal Reserve

M2 supply increase during 1960-2020



## Bitcoin

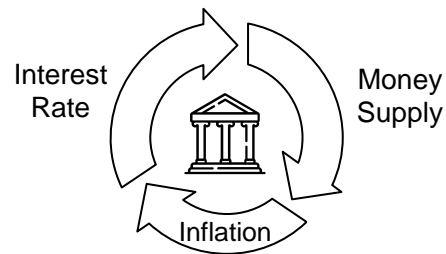
There will never be more than 21m bitcoin



Monetary Policy

Discretionary, judgmental, cyclical

(Subject to abuse)



Pre-programmed, predictable, certain

(Subject to mathematics)

$$\text{Bitcoin} = \sum_{i=0}^{32} 210,000 \frac{50}{2^i}$$



# Bitcoin vs The World's Money (2020 Data)

What if Bitcoin becomes the unit of account?

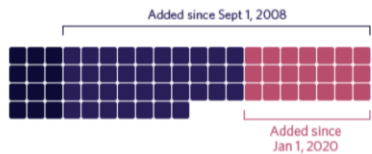
## Cryptocurrency | \$244bn

Bitcoin ■ ■ ■ Other 5,000+ coins

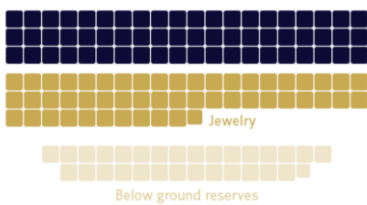
## US Budget Deficit | \$3.8trn



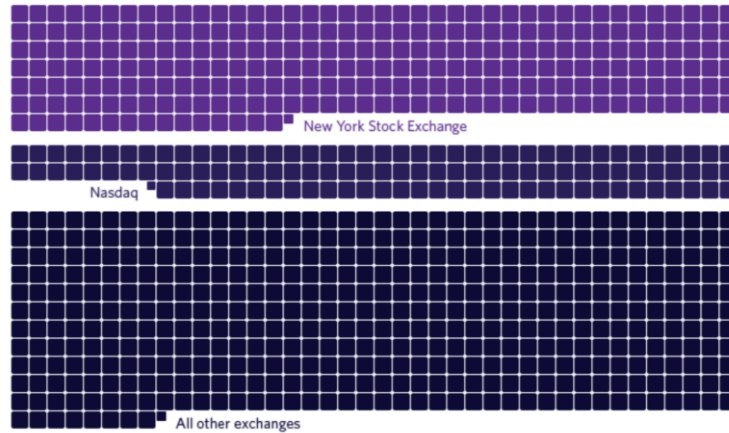
## Fed's Balance Sheet | \$7trn



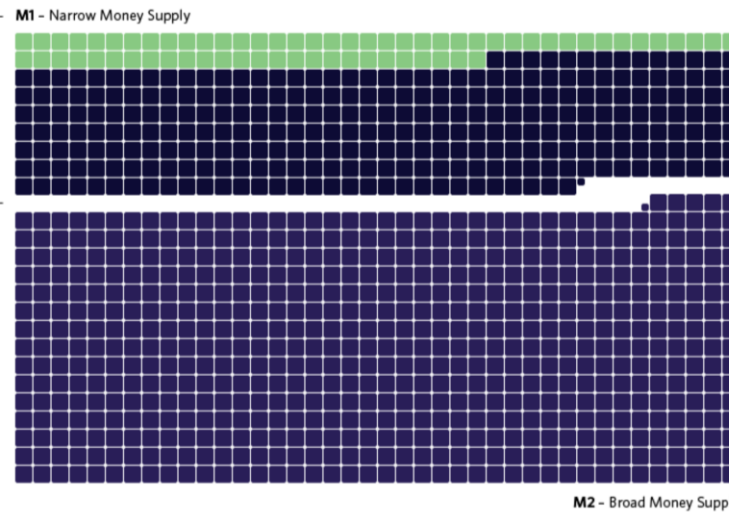
## Gold | \$10.9trn



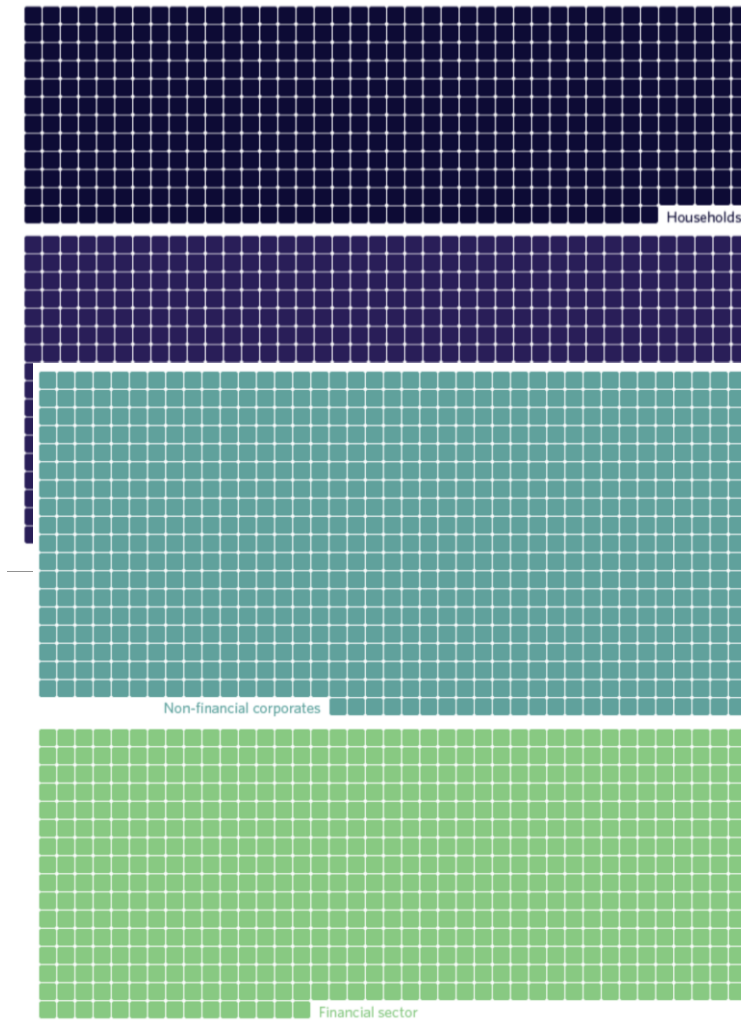
## Stock Markets | \$89.5trn



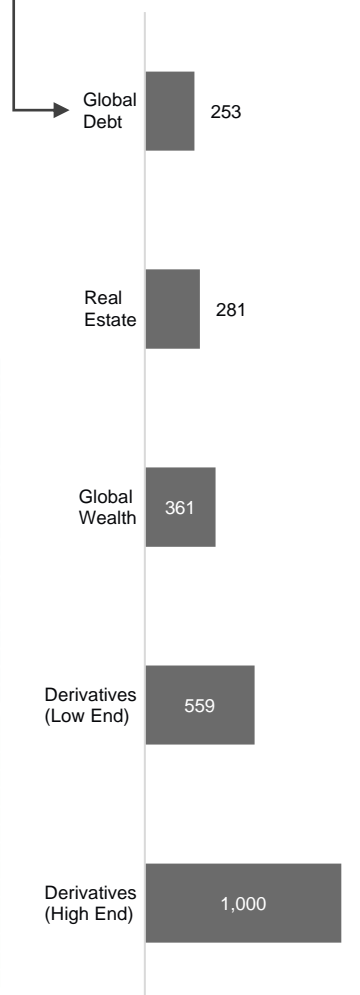
## Money Supply | \$95.7trn

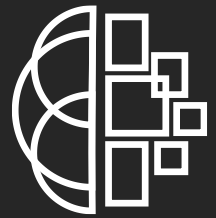


## Global Debt | \$253trn



## Others (\$' trn)





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