Introduction

Bitcoin in the spotlight (once again)

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How it started (2017):

BlackRock CEO Larry Fink calls bitcoin an 'index of money laundering'

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Bitcoin

Bitcoin is a fraud that will blow up, says JP Morgan boss

Bitcoin is 'useless as a payment mechanism and ridiculous as a store of value,' ex-PayPal CEO

MONEYBEAT BLOG

Howard Marks Trashes Bitcoin: 'An Unfounded Fad'

How it's going (2021):

BlackRock fund bought bitcoin futures in January, regulatory filings show

by Michael McSweeney

March 31, 2021, 3:47PM EDT · 1 min read

Cryptocurrencies

JPMorgan Says Investors Could Make Bitcoin 1% of Portfolios

PayPal's Entry to Crypto Followed Long Buildup in Expertise

The Tell

'I've learned how much I don't know' about bitcoin, says investor Howard Marks

"If you don't understand Bitcoin and crypto and refuse to learn, its going to be a tough century for you" (Zhu Su – 2021)

What changed?

Down the bitcoin rabbit hole

What is Bitcoin?

A brief introduction

Bitcoin and ‘crypto’ are different

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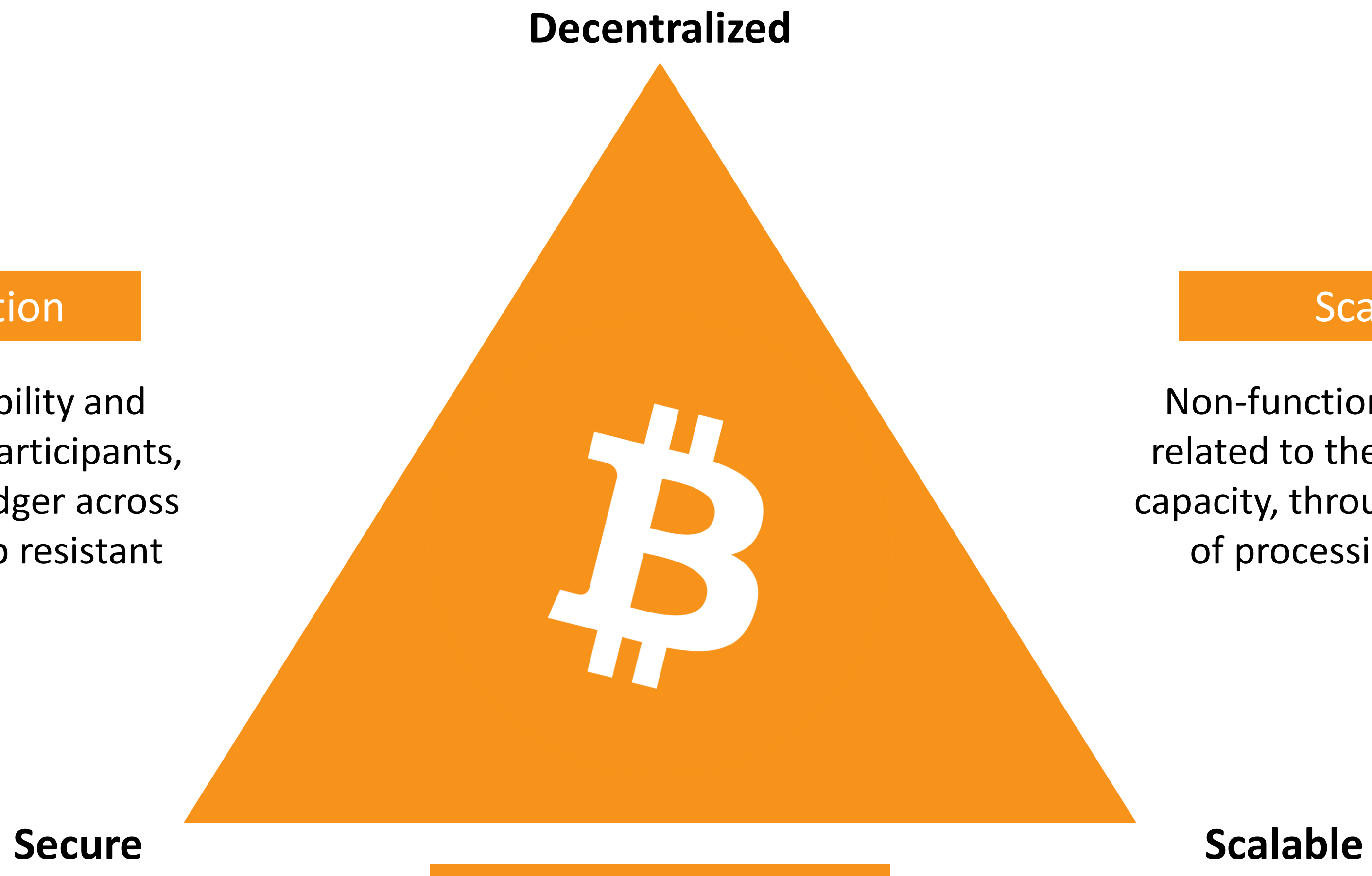
Out of scope
(due to time restrictions):
Bitcoin’s energy usage, sources and
relevant comparisons

The blockchain trilemma: decentralized, scalable and secure



Decentralization

Accessibility, availability and transparency for all participants, consistent state of ledger across all nodes, censorship resistant

Scalability

Non-functional requirements related to the ledger's carrying capacity, throughput and latency of processing transactions

Security

Ability to maintain ledger integrity against malicious attack through inbuilt control mechanisms

Bitcoin key characteristics

- Bitcoin is the first and most famous digital asset/cryptocurrency and was introduced in 2009
- Currently it's market capitalization amounts to approximately 1 trillion dollars (1/10 gold market cap)

- It was designed by someone or a group of persons hiding under pseudonym Satoshi Nakamoto
- Bitcoin is designed to let you store, send and receive bitcoin (money) without any third party involved (e.g. banks)
- This is enabled by the use of *blockchain technology* (a decentralized ledger)
- Compared to centralized databases, *blockchains are inefficient and expensive* to use
- It's decentralized nature is a characteristic envisioned by (economists) Hayek and favoured by Mises (later more)

- Two type of bitcoin users:
  - *Ordinary users* – use digital wallets to send and receive bitcoin (while using the blockchain)
  - *Miners* – voluntary secure the network by verifying 'blocks' of transactions
- Mining bitcoin requires specialized hardware (ASICS) that enable costly computations ('power hungry')
- Results in high OPEX (e.g. electricity) and CAPEX (e.g. hardware)
- Bitcoin mining transformed from a hobby into a hyper-competitive billion dollar industry

- *Bitcoin is a deflationary asset with a fixed supply of 21 million bitcoin*
- Over time the issuance of bitcoin will decrease, making them scarcer and harder to obtain if demand increase

But what about Bitcoin’s price?

Bitcoin – the 2017/2018 'bubble'

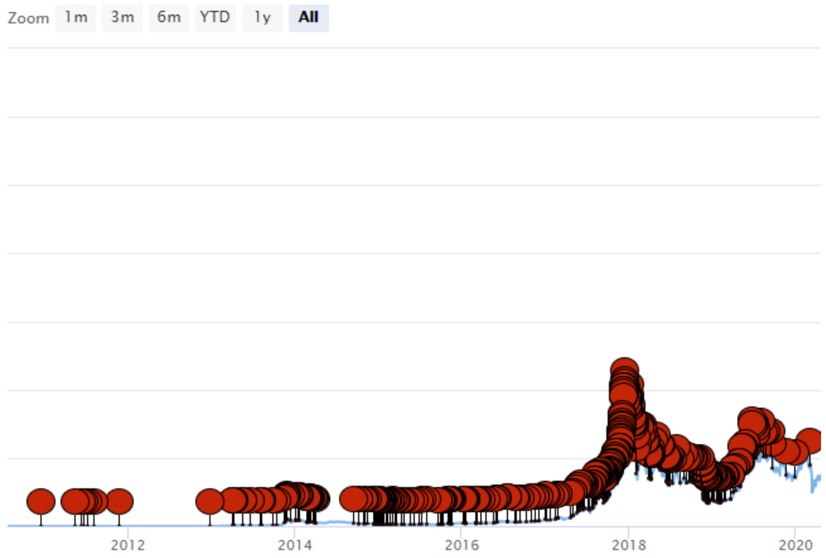
Bitcoin – the 2020/2021 'bubble'

Bitcoin has been declared 'dead' many times

Bitcoin Obituaries

Bitcoin has died 404 times

Submit an Obituary



Bitcoin Obituary Stats

Most Recent Death:

March 17th, 2021 – Cryptocurrencies – A product of government malfeasance

Oldest Death:

December 15, 2010 – Why Bitcoin can't be a currency

Deaths by Year:

2021 (11)

2020 (14)

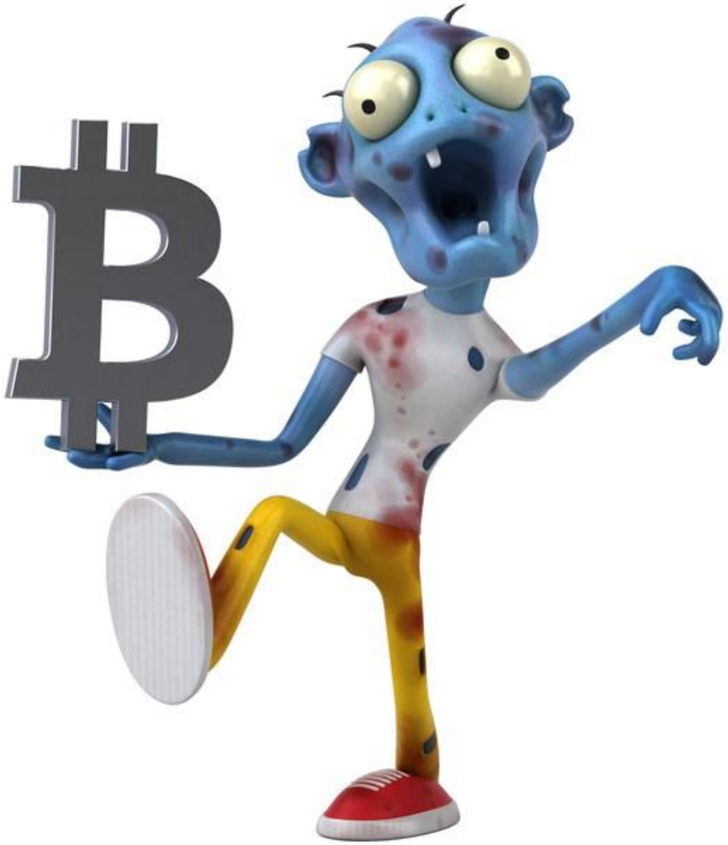
2019 (41)

2018 (93)

2017 (124)

2016 (28)

2015 (39)



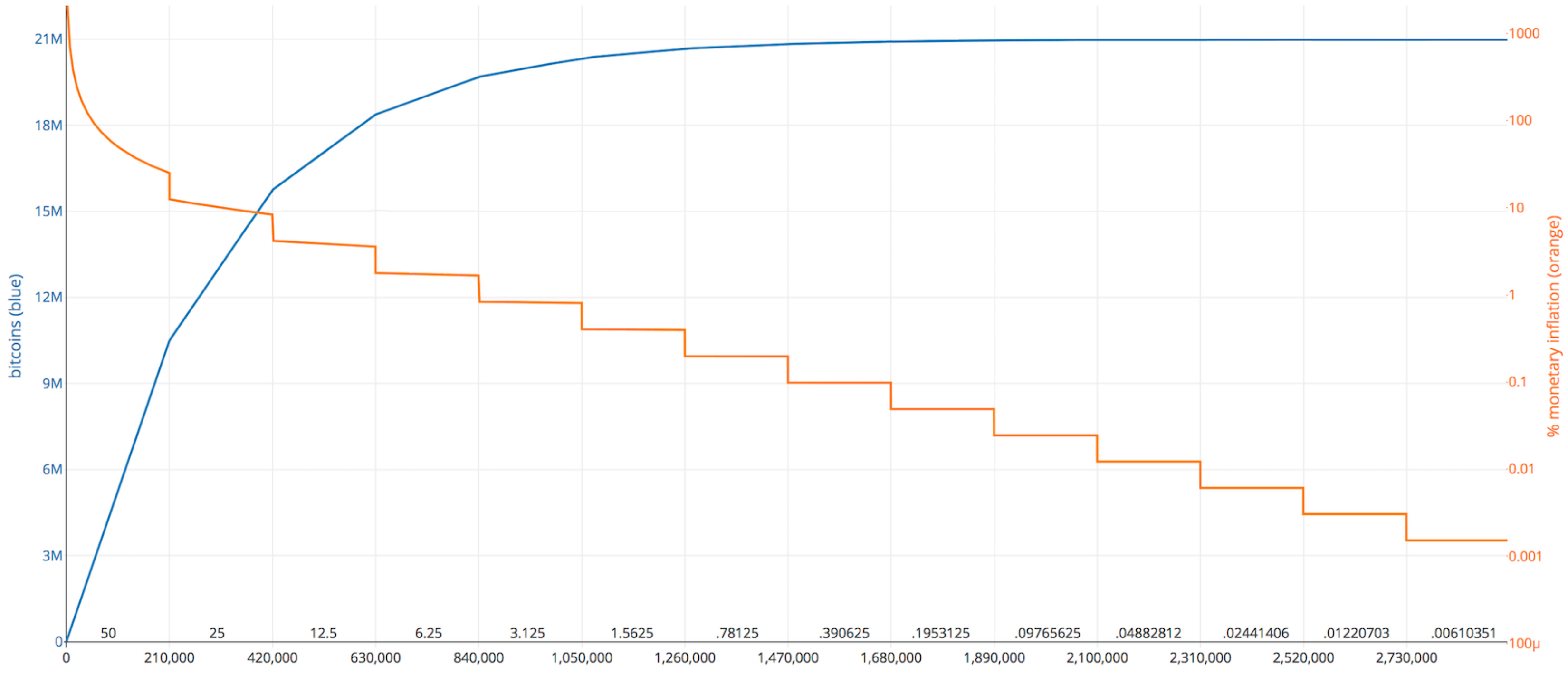
Source: https://99bitcoins.com/bitcoin-obituaries/

So what’s really going on?

Bitcoin issuance rate based on block rewards

Bitcoin's programmed scarcity

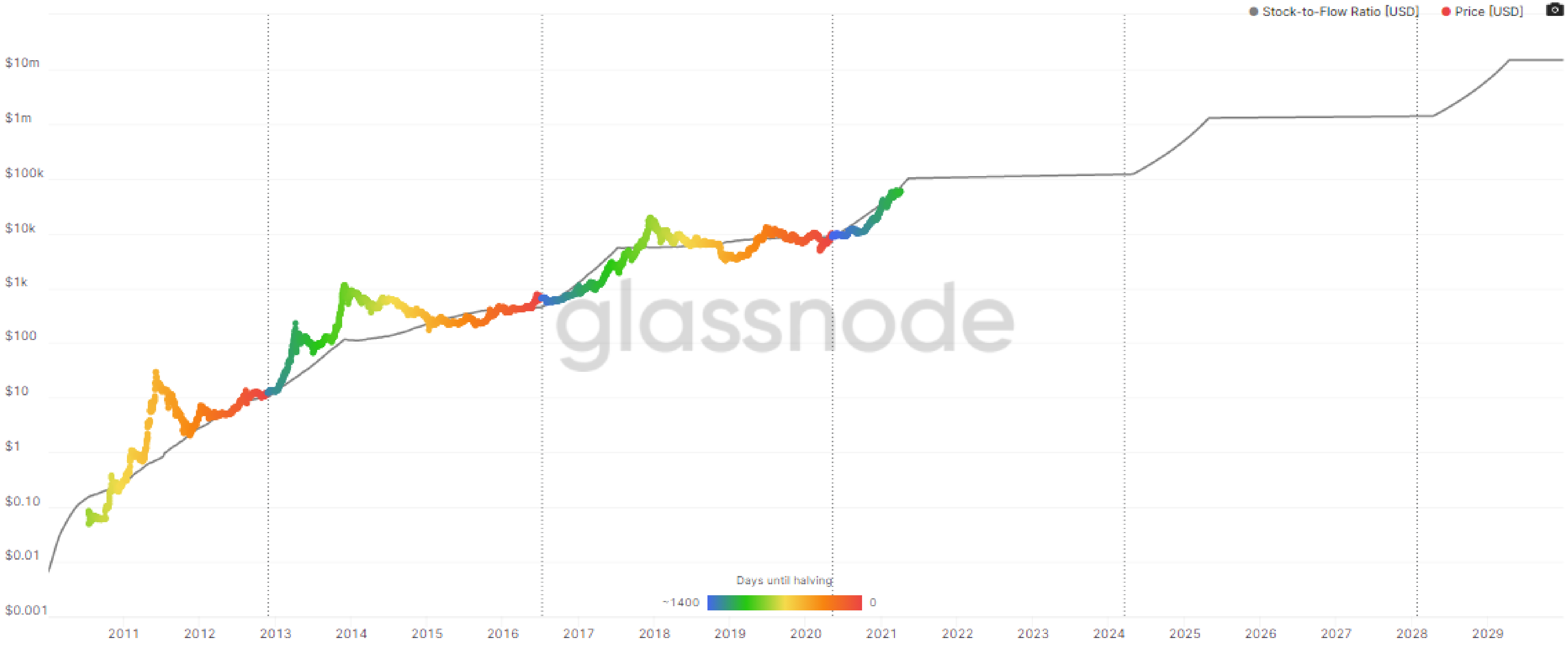
- Bitcoin is programmed to reward miners with a certain amount of bitcoin whenever a block is produced
- After every 210.000 blocks (four years) the reward halves and will keep on halving (2140)
- Guided by price equilibrium, an increase in demand and a decrease in supply drive prices higher
- This reasoning is consistent with the way (commodity) investors look at gold
- Gold is known as a *'store of value' commodity* because it retains value over long time frames (until now)
- Scarcity can be quantified by *stock-to-flow ratio* (stock is the 'existing reserves' versus flow 'yearly production')
- Scarcity drives value, market values thus tend to be higher when the stock-to-flow ratio is higher



Bitcoin stock-to-flow model

Understanding price behaviour

- Viewing bitcoin's price on a logarithmic scale makes more sense (% change of the underlying asset's price – Y-axis)
- Especially when you add the halving events – stock-to-flow ratio line (gold SF 62 / BTC SF 50 (2021) – BTC SF 112 (2024))
- After the halving event of 2024 bitcoin becomes the asset with the highest SF ratio
- No, this not a scientific law / investment advice – only food for thought to understand bitcoin's (prior) price behaviour



Bitcoin is the future

So what is bitcoin?

- Bitcoin is a monetary network (the internet of value), the first of its kind
- A network which value is based on numbers, e.g. users, transactions, hash-rate (just like the internet or Instagram)
- It’s a ‘store of value’ asset and not a currency (yet)
- It’s a > 10X improvement on it’s (current) direct competitor ‘store of value asset’ gold
- Because (e.g.) : verifiably scarce, fast and cheap to send and store, censorship resistant
- Bitcoin can thus be viewed as a global, affordable, simple and secure savings account
- Furthermore it’s a call option on future technological advancement (“software is eating the world”)
- The technological advancement is moving fast, bitcoin 2021 is not bitcoin 2017 (e.g. lightning network/taproot)
- Regulatory, legal and tax frameworks are improving parallel to it’s technological advancement (e.g. custodians)

Questions to ask yourself?

- So could bitcoin be a rational response to monetary inflation?
- Can any type of (institutional) investor and or (corporate) treasurer ignore bitcoin at this point/moment?
- What is your estimate of the rate of monetary expansion and the (REAL) rate of inflation for the next eight years?

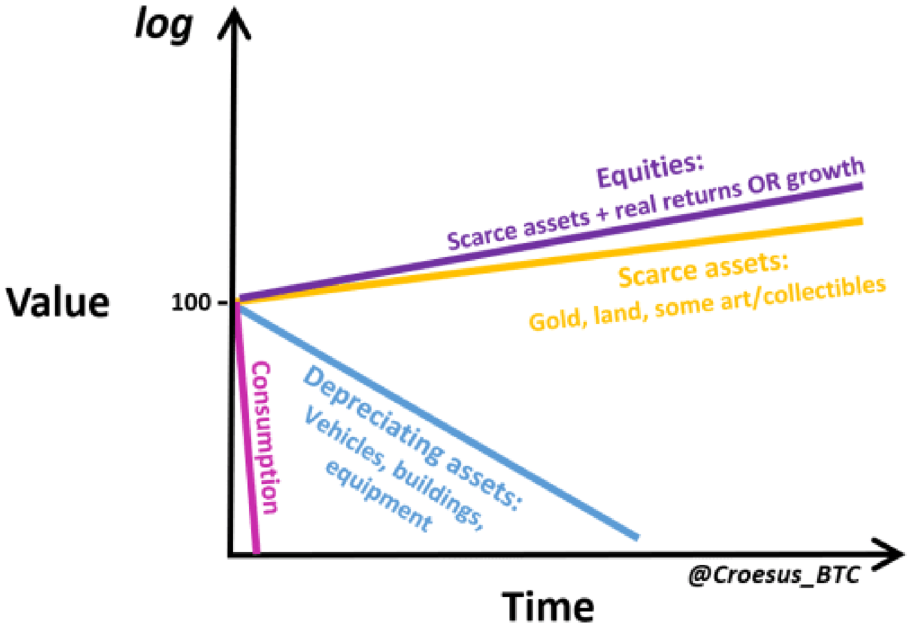
Different assets

The value of a scarce asset

The value of assets over time

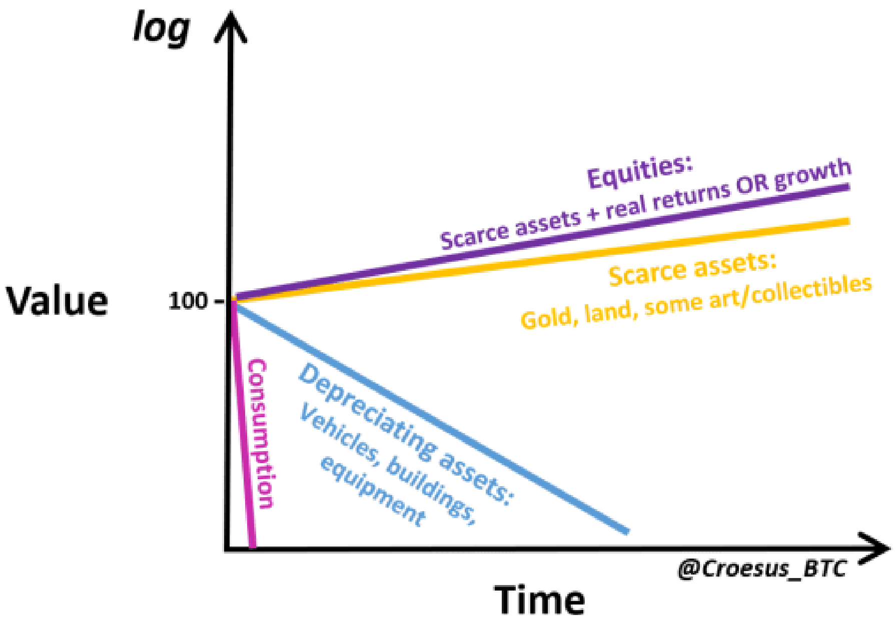
Different assets

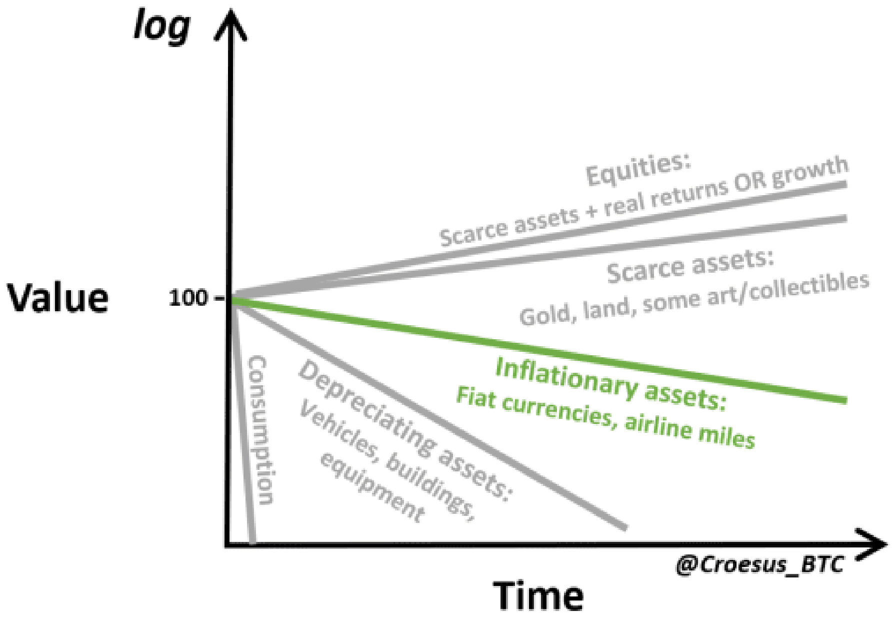
- Not all assets are created equal, some appreciate in value, some lose value over time
- Obvious for the things we consume, like groceries and clothes
- Less visible but also true for assets we don’t visibly deplete (e.g. a car accumulating miles)
- Traditionally scarce assets like gold or land do a good job of maintaining their value
- Ownership shares in successful companies hold value and generate yield
- Ultimately, its about the DNA of the asset: its inherent properties that dictate the value of the asset over time
- If we put all the different asset types into one image that characterizes their nature, it would look like this:



The ‘value’ of fiat currencies

- Previous image was missing something, namely modern day currencies
- Since 1971 (for 50 years) we are in a monetary experiment (or maybe we are conducting multiple experiments?)
- For the first time, fiat currency is not backed by any asset whatsoever
- Central banks believe it’s best for the economy (us) to spend and invest your money
- They don’t want you to store your earnings as savings, as they designed the currency to lose 2 percent per year
- Quite simply this math means that the dollar’s value is designed to exponentially decay over time





Protect Your Wealth

Dollars have lost 90% of their purchasing power since 1950 as politicians printed more of them.

Central banks

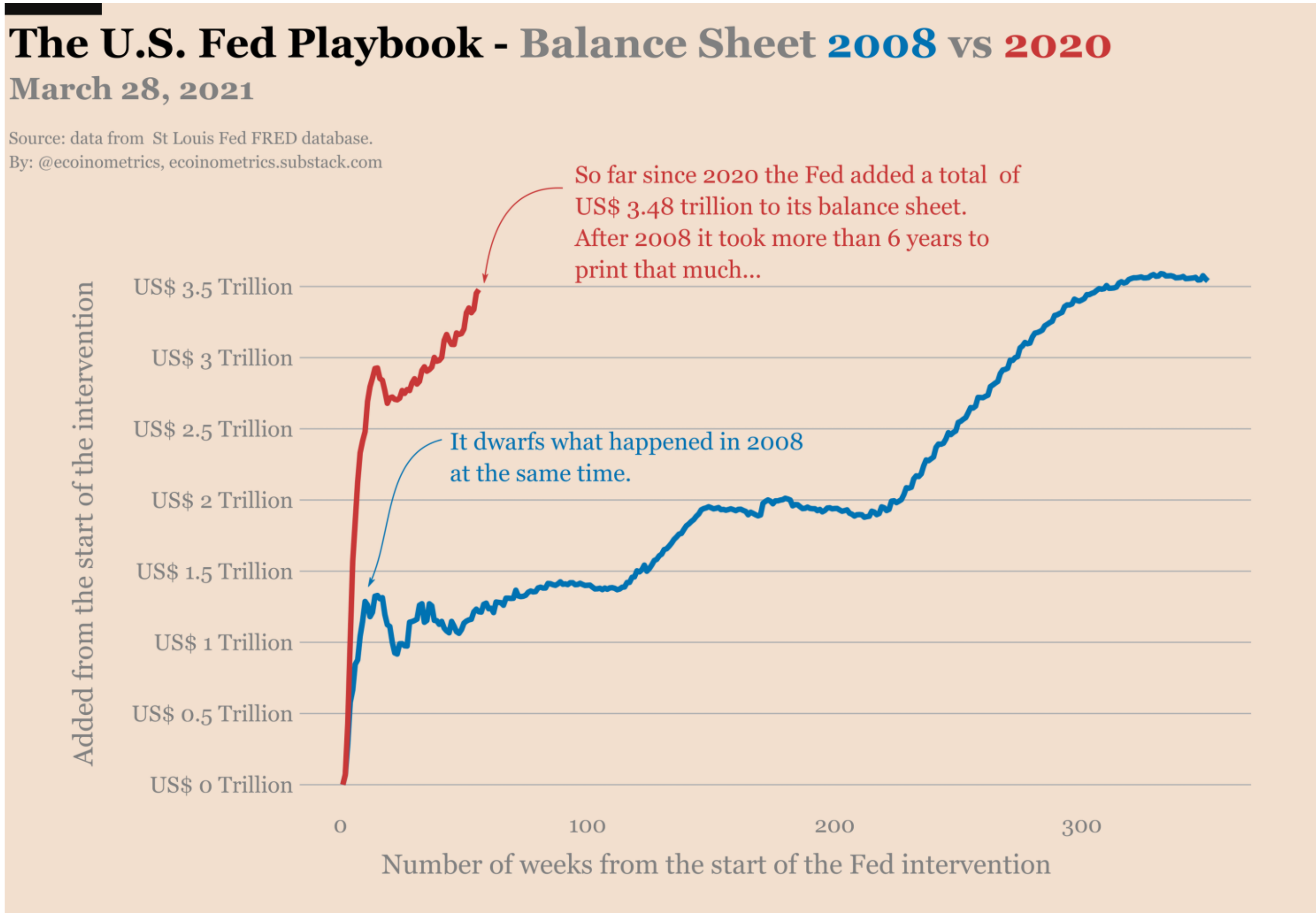
Central bank intervention

The impact of COVID-19 on CB balance sheets

Central banks came to the rescue

- COVID-19 brought economic activity to a halt, resulting in immense damage to the real economy
- Central banks and governments went “all in” to cushion the effect(s) of the crisis
- The response is considered to be swifter, bigger and broader than it was for the great financial crisis
- Monetary and fiscal policies have no historical precedent
- Buying of financial assets from governments, banks and financial institutions led to an expansion of balance sheets
- The result of these programs has been a sharp increase in the money supply (e.g. M1 and M2)
- The amount of money in circulation has more than doubled since before the great financial crisis (2008/2009)
- However,…. central banks have been successful at calming the financial markets (for now)

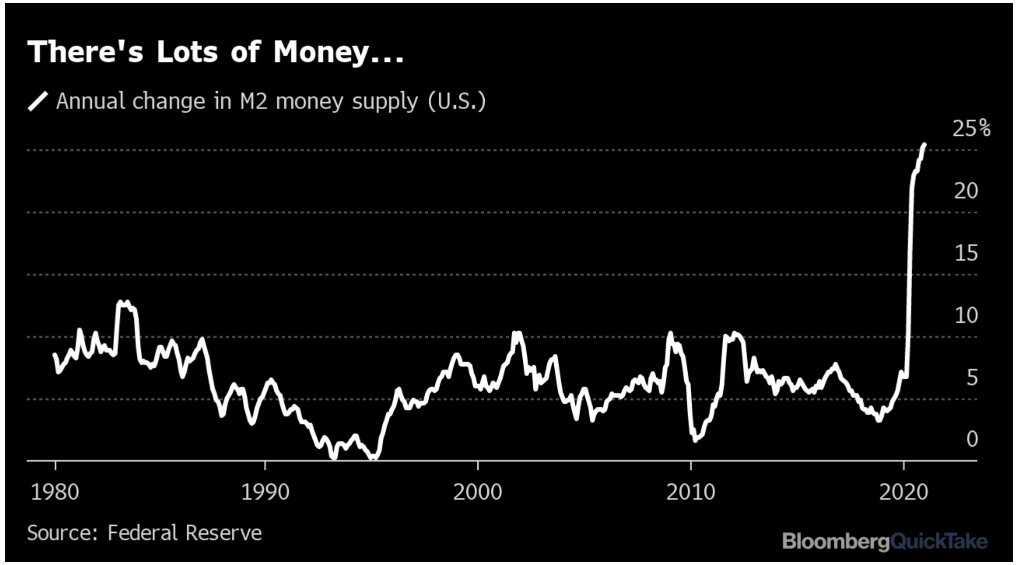
A closer look at the FED balance sheet expansion



FED balance sheet

- One year after operation “QE infinity” (2020)
- Financial crisis versus COVID-crisis
- Financial crisis:
  - Seven years
  - Multiple QE plans
  - From zero to $ 3.5 trillion
- COVID crisis:
  - One year
  - First QE plan
  - Already at $ 3.5 trillion
- My guess: this will continue and investors and treasurers should probably worry about the long tale of the quantitative easing

Waves of (new) money are hitting the (financial) system



Misallocation costs of digging deeper into the central bank toolkit

The ‘value’ of fiat currencies

- Beginning with Greenspan, we have now 30+ years of ever-looser monetary policy (e.g. lower rates / yield curve control)
- Prior to pandemic, public and private debt were already high and rising (far higher than before the financial crisis)
- During the last two decades risk has been continuously been transferred from (financial) markets to the government
- Central bank large-scale asset purchases (possibly) lead to dislocated markets and misallocation of resources
- Central bank independence is under attack / they are becoming more and more political
- Will central banks and governments keep the pedal on the monetary and fiscal policies for longer than necessary?
- Monetary inflation sure looks like ‘the only way out’ at the moment – is this the last debt cycle (according to Ray Dalio)?
- If so, could bitcoin be a ‘schmuck insurance’ (aka hedge) against the traditional financial system (quote: Chamath Palihapitiya)

Cash is a melting ice cube in the current environment

The 'value' of fiat currencies

- Previously described factors may lead to a significant depreciating effect on the long-term value of fiat currencies
- Large cash reserves yield negative interest on bank accounts,…. but this is not the main problem
- CPI (inflation gauge) is the wrong yard-stick – investors and treasurers should use monetary expansion rate
- Due to the money printing the cost of capital went up from 5% to 15% for every company (since March 2020)
- As a treasurer/investor you have to find a solution that yields more than 15% to not lose money in the current environment
- Bitcoin not only provides a hedge against the current financial system and inflation
- It also offers the prospect of a higher return than other investments – "up only"
- Because of this it is a logical solution to the 'store of value' problem

Companies cash on hand
(e.g. per EOY 2020)

1.	**Alphabet**	**$ 136.69 billion**
2.	**Microsoft**	**$ 131.96 billion**
3.	**Amazon**	**$ 84.39 billion**
4.	**Apple**	**$ 76.82 billion**
5.	**Facebook**	**$ 61.95 billion**

Institutions

Bitcoin on the balance sheet

Corporate adoption on the rise

- Large corporates and traditional finance are discovering bitcoin
- They consider bitcoin's volatility to be a 'feature' not a 'bug'
- Prefer an asset (BTC) with high volatility that goes up over time to an asset with low volatility that structurally decreases over time
- Legal, tax and accounting framework and implications improved
- More and more robust custodian solutions
- Market capitalization and liquidity are enabling 'new players' to enter bitcoin (and crypto markets)
- Bitcoin ecosystem becoming (more) mature (e.g. Visa and Paypal)
- Increase in companies that prefer their assets in bitcoin and liabilities in fiat – due to economic conditions

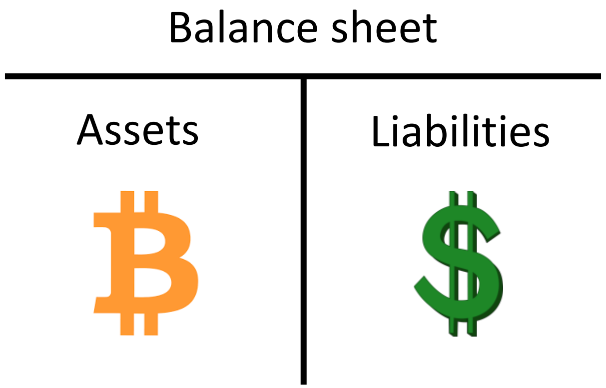
Institutional investors adoption on the rise

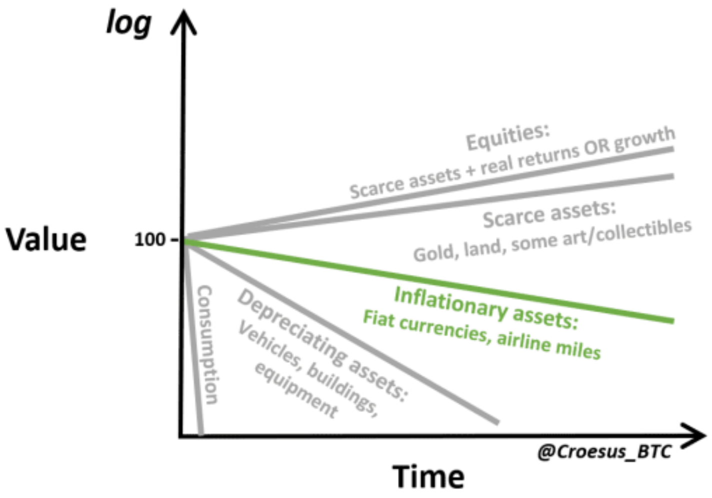
- Modern portfolio theory – risk versus return (relative)
- Currently low correlation to other (traditional) assets
- Volatility and risk are not the same
- Increase in (institutional) investors that realize that bitcoin's characteristics match their investment needs (e.g. insurance companies and pension funds)

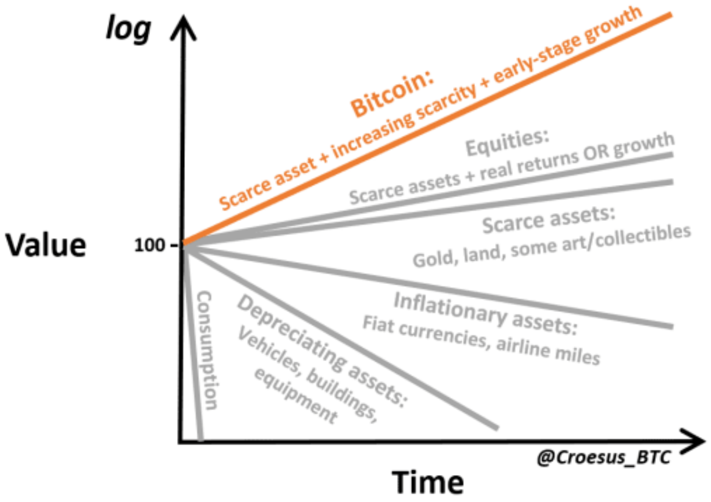
Bitcoin on the balance sheet

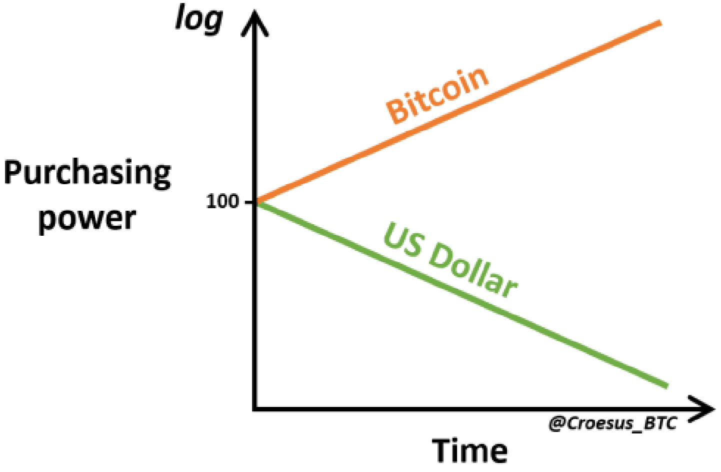
A closer look at corporate adoption

- During inflation: the value of assets increases the value of fiat decreases
- Corporates therefore prefer assets in bitcoin and liabilities in fiat
- High conviction play: during the transition into a more bitcoin oriented financial system, one can leverage the decreasing value by taking out a loan in fiat to acquire (more) bitcoin
- This makes the dollar-denominated loan take out to buy bitcoin easily payable
- Furthermore bitcoin will get a yield curve, generating (fixed) income in the future
- Prediction: by the end of 2021 a dozen S&P 500 companies will hold bitcoin on their balance sheet, this number will further increase over time

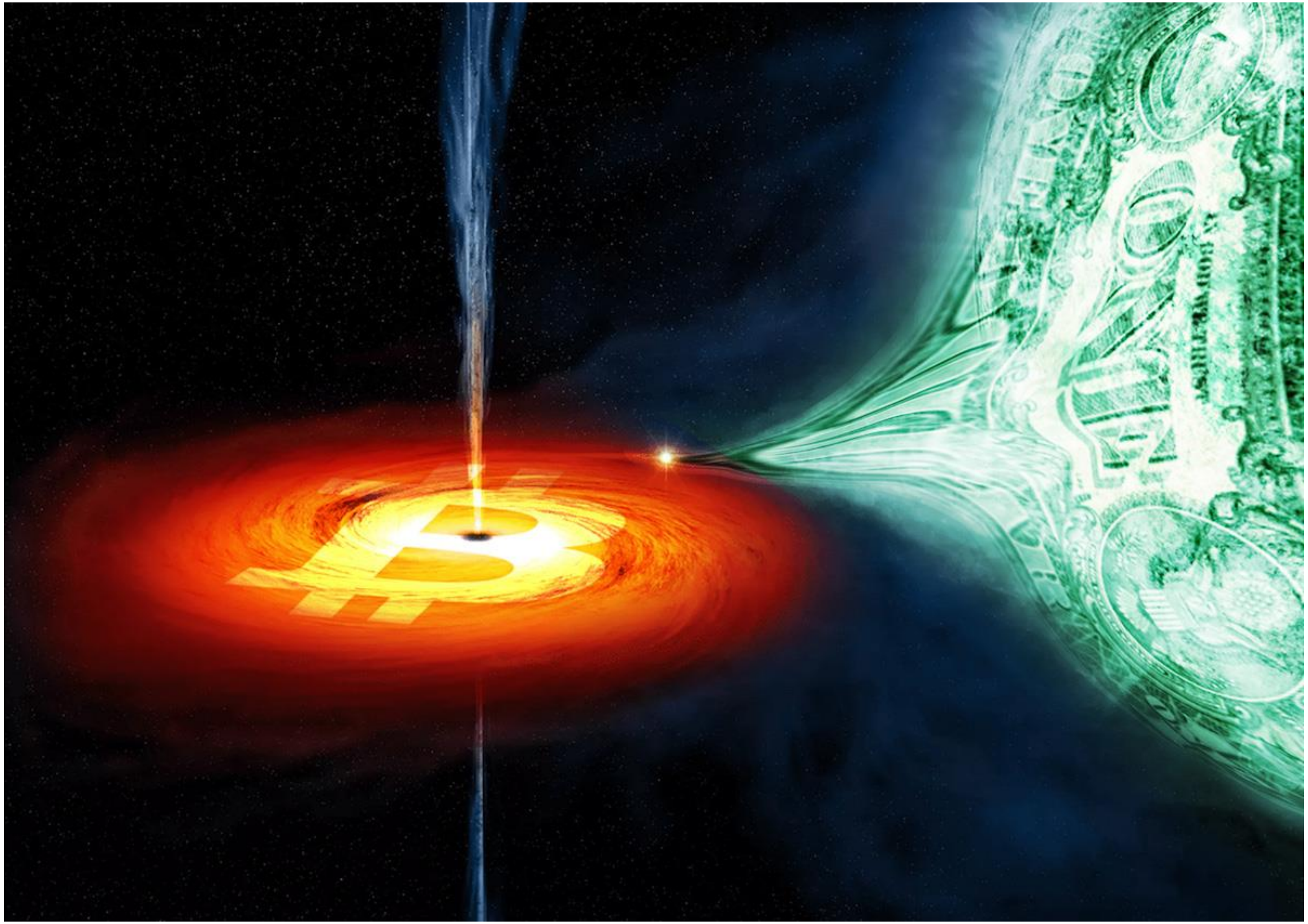








Bitcoin liquidity black hole (gold, bonds, currencies)



Moon mission?

Final thoughts

“You don’t have to invest all your money in bitcoin, just the money you want to keep”

(Michael Saylor, 2020)

Questions?