



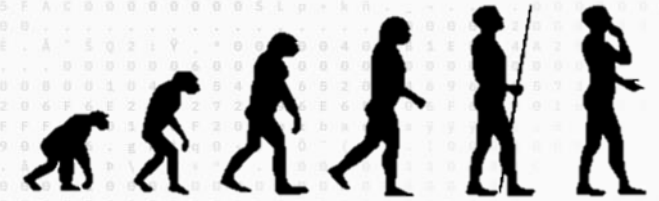
PANTERA

INTRODUCTION TO BLOCKCHAIN INVESTING

AUG 2021

Evolution of Money

Money has evolved throughout time, offering improvements on existing forms of currency. Now, money is digital and programmable.



12000+ BC
Early Currency
Yap Islander
Stones



3000 BC
Commodity
Currency
Gold, Silver



1700
Representative
Currency
Gold Standard



1971
Fiat
Currencies
USD, GBP, JPY,
CNY



2009
Digital
Currencies
Bitcoin, Ripple,
Zcash



2016
Digital
Companies
Ethereum
ERC20 dApp
Tokens



2021
Decentralized
Finance
Decentralized
Exchanges,
Lending Protocols

"Money is a social institution: a tool created and marked by society's evolution, which has exhibited a great capacity to evolve and adapt to the character of the times."

– Virtual Currency Schemes
Report, ECB, October 2012

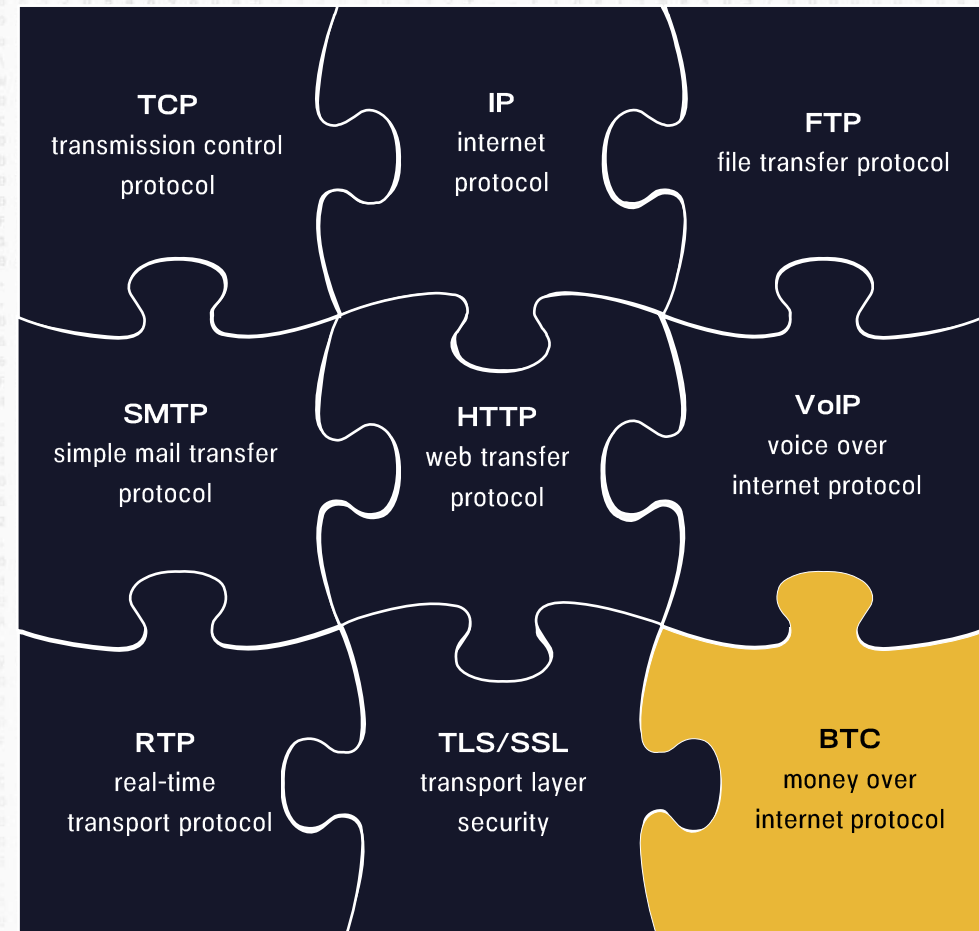


Final Piece

Of the protocol puzzle

“The one thing that’s missing, but that will soon be developed, is a reliable e-cash, a method whereby on the Internet you can transfer funds from A to B, without A knowing B or B knowing A.”

– Milton Friedman, 1999



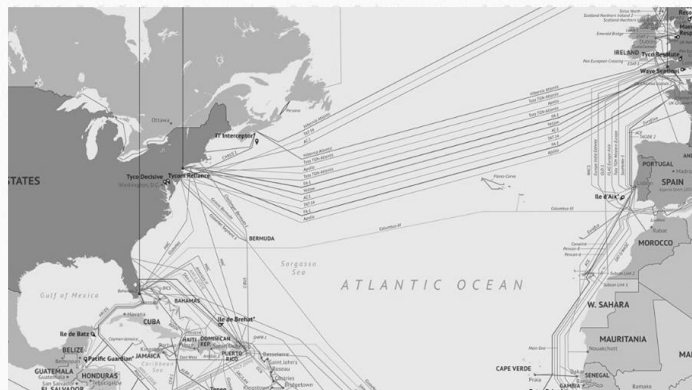


MoIP

Money over Internet Protocol

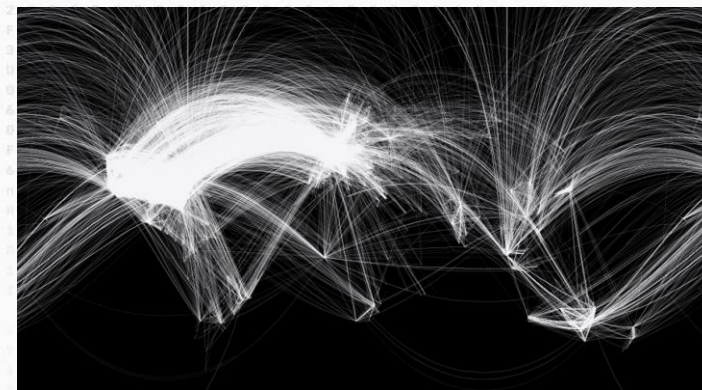
Blockchain technology is to payment monopolies/oligopolies what VoIP was to telephone monopolists, only more extreme

Blockchain technology enables a borderless, socially-connected world



VoIP

Routed around telephone monopolists
Offered 99+% lower cost and operational improvements
Removed gates to international communication



MoIP

Routes around existing payment rails
Offers cheaper and faster payments
Low-friction, cross-border money movement



Improved Money

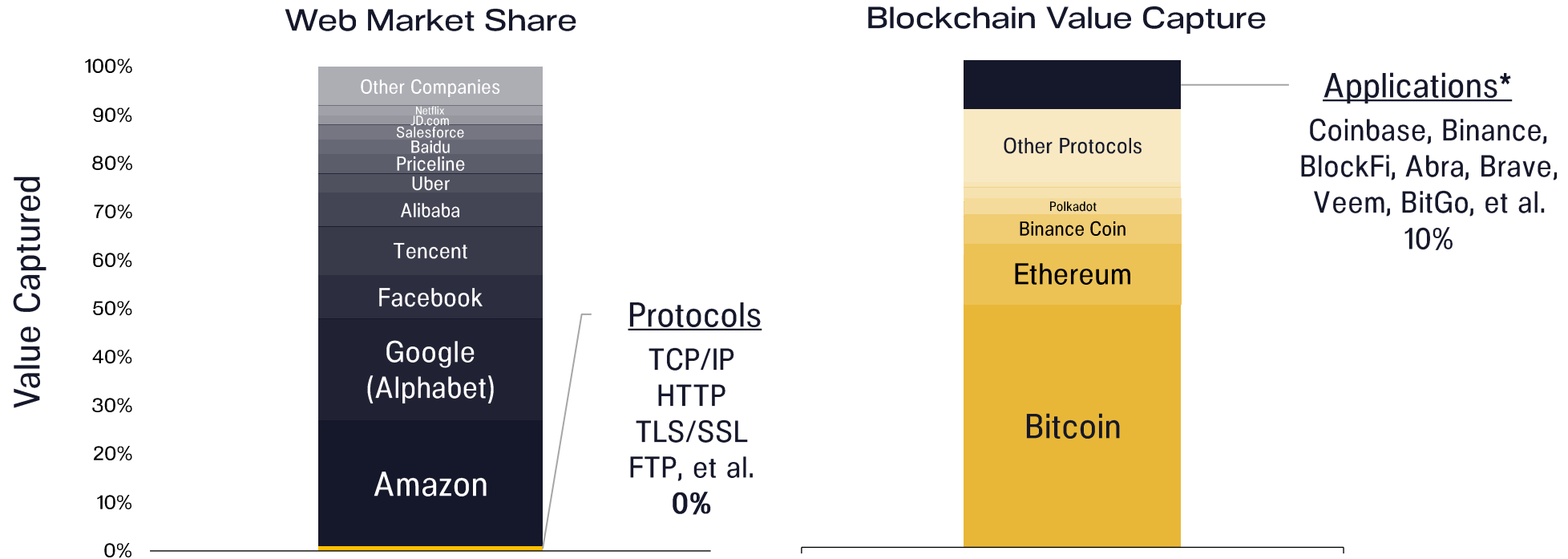
Blockchains have many advantages over existing stores of value, currencies, and payment systems

	STORES OF VALUE		FIAT CURRENCIES		PAYMENT SYSTEMS		
	Bitcoin, Ethereum	Gold	Electronic	Cash	Visa, MasterCard	PayPal	Western Union
Free to Store	✓	No	✓	✓	✓	✓	✓
Essentially Free to Ship/Transfer	✓	No	No	No	No	No	No
Easy to Divide	✓	No	✓	✓	✓	✓	✓
No Documented Counterfeiting	✓	✓	No	No	No	No	No
Not Easily Susceptible to Identity Theft	✓	✓	No	✓	No	No	No
Potentially Anonymous	✓	✓	No	✓	No	No	No
Decentralized	✓	✓	No	✓	No	No	No
Fast Transfers/Payments Around the World	✓	No	✓	No	✓	✓	✓
Good for Storing Wealth	✓	✓	No	No	No	No	No
Easy to Verify/Low Potential for Chargebacks or Fraud	✓	✓	No	✓	No	No	No
Limited Supply/No "Quantitative Easing"	✓	✓	No	No	N/A	N/A	N/A
No Government Freezes or Confiscations; Limited Controls	✓	No	No	No	✓	✓	✓
Global, Real-time Public Ledger	✓	No	No	No	No	No	No
Microtransactions	✓	No	No	No	No	No	No
Good for Buying a Latte	Not Yet	No	✓	✓	✓	No	No



Fat Protocols, Thin Apps




In the sharing economy, value is disproportionately distributed to the application layer. In blockchain, most value will accrue to the underlying protocols.





Protocol Evolution

Blockchain protocols have evolved over the past decade.

Protocol	Enables	Breakthrough
 Bitcoin	Global transactions & store-of-value	Decentralized, trustless value transfer. Solved the double spend problem
 Ethereum	Smart contracts, token issuance	Self-enforcing contracts that allow for programmatic control over financial transactions
 Polkadot	Blockchain interoperability & enhanced scalability	Cross-blockchain transfers of any type of asset. Scalability enhancements



Decentralized Finance

Similar to how the internet was the underpinning of a new information infrastructure, blockchain tech and cryptocurrency are the underpinnings of a new financial infrastructure. There are five basic primitives to any financial system:

UNIT OF ACCOUNT

Stable currencies can be used for trade and commerce.

EXCHANGE

Decentralized exchanges allow for trading of assets with no intermediary.

LENDING & ISSUANCE

Globally-accessible lending products enabled through programmable tokenized debt.

MARGIN

Borrow cryptocurrencies on margin using other cryptocurrencies as collateral.

LEVERAGE

Smart contracts can be structured to allow for leverage.



Emergence of DeFi (Decentralized Finance)

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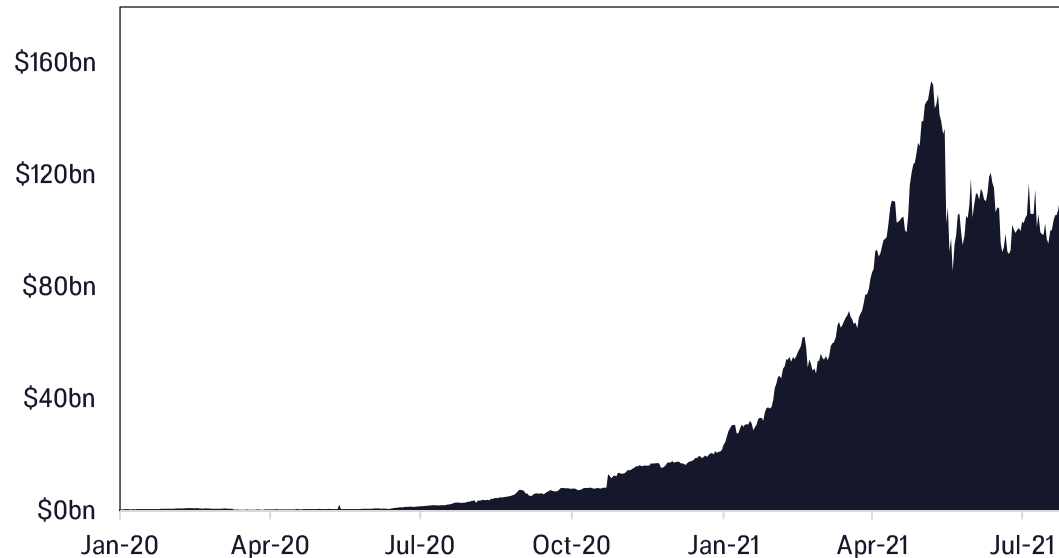
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DeFi Growth

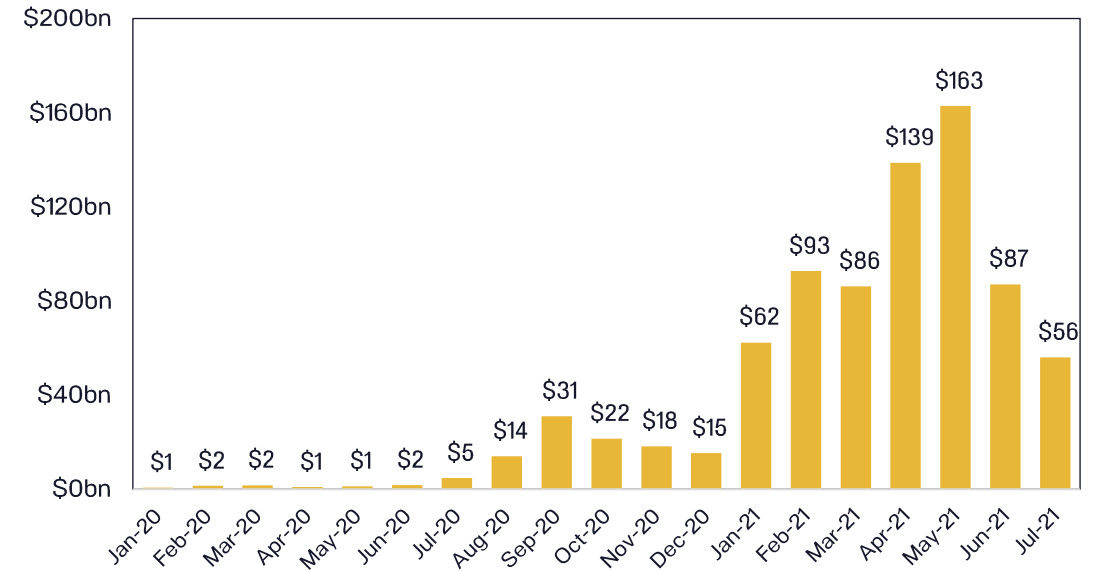
The amount of value locked up in DeFi protocols is now over \$115 billion and decentralized exchanges now facilitate around \$50 billion in monthly trading volume.

Value Locked in DeFi Protocols



1. Source: DeFi Llama; July 31, 2021

DEX Trading Volume²

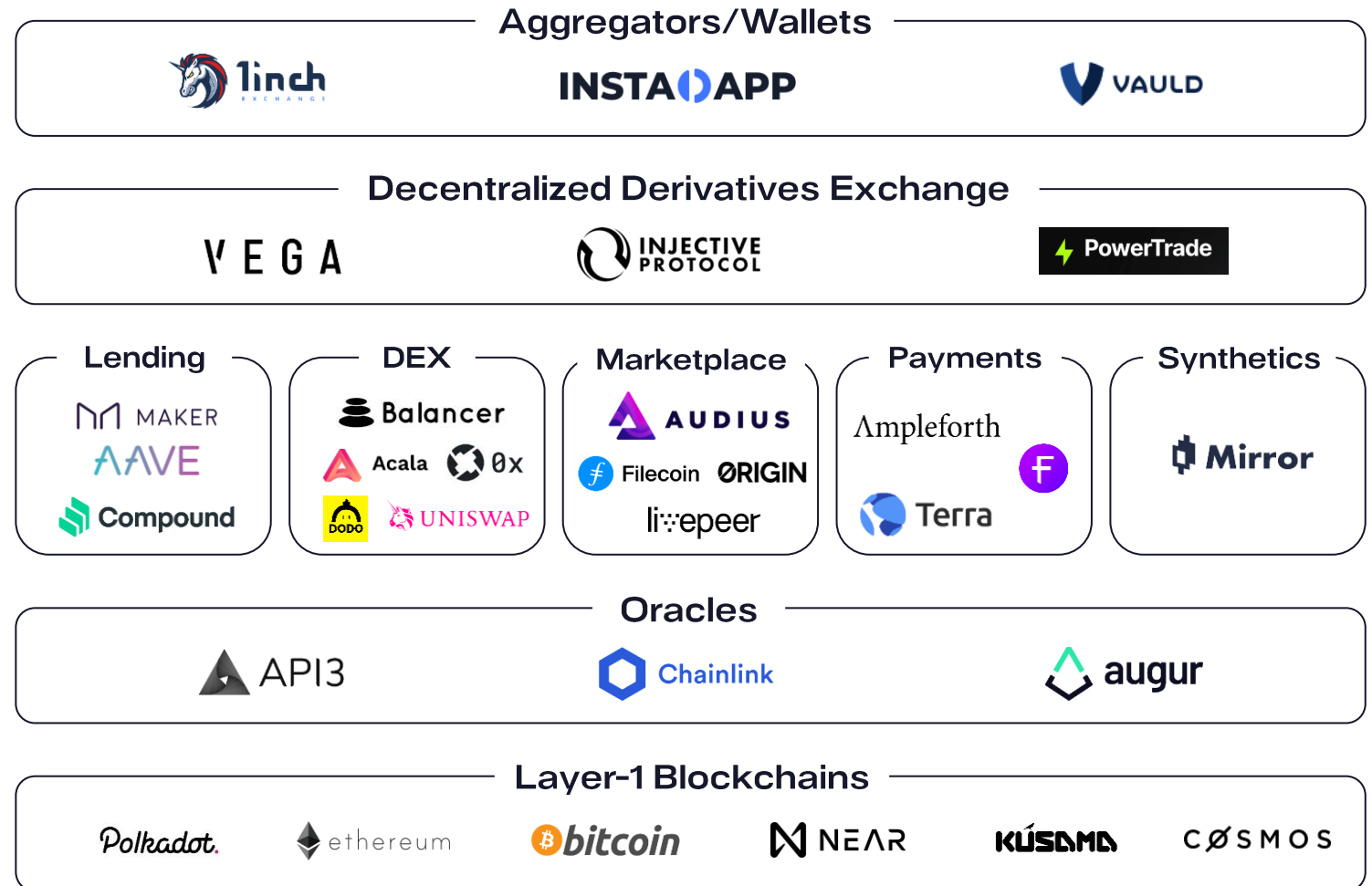


2. The Block; July 31, 2021



DeFi Ecosystem

The ecosystem for DeFi is rapidly expanding with the emergence of new companies and protocols supporting the industry.






Areas of Focus


Infrastructure

Blockchain tech and traditional infrastructure for a robust ecosystem

 Alchemy provides developers with the fundamental building blocks they need to create decentralized applications.


Payments

Enabling consumers and businesses to send payments in crypto

 Veem is a payment service provider that helps simplify the way businesses send and receive funds.


Exchanges

Trading infrastructure for fiat-to-crypto and crypto-to-crypto transactions

 Bitso is a Mexico-based exchange that allows users to buy, sell, and send crypto


Enterprise

Blockchain-integrated solutions for everyday businesses

 The Offchain Labs project, Arbitrum, scales Ethereum contracts as a scaling solution for many DeFi apps


Consumer

Services and products for everyday consumers

 MakersPlace is the premier market to discover, collect and invest in truly rare and authentic digital artworks

Finance

Services that enhance portfolio management and trade execution

 Staked helps investors earn yield from staking and DeFi without taking custody of their crypto assets



Pantera Blockchain Fund

A new wrapper for the entire spectrum of blockchain assets.

VENTURE FUNDS



EARLY-STAGE TOKEN FUND



LIQUID TOKEN FUND



BITCOIN FUND











BLOCKCHAIN FUND



Stablecoin Market

Stablecoins have rose to prominence due to the utility they provide in the decentralized finance ecosystem and payments sector.

In 2017, Tether (USDT) was the only stablecoin that existed and had any traction. Today, there are dozens with over \$110bn in total market cap.

Stablecoin	Logo/Ticker	Market Cap (bn)
Tether	 USDT	\$63.4
USD Coin	 USDC	27.3
Binance USD	 BUSD	12.3
Dai	 DAI	5.5
True USD	 TUSD	1.3
Paxos Standard	 PAX	0.9
HUSD	 HUSD	0.6
sUSD	 SUSD	0.2
Total		\$111.5



Non-Bitcoin+Ethereum Market Share

The non-bitcoin+ethereum market share has grown to 34% from 18% at the start of this year.

While we're very bullish on Ethereum and Bitcoin, we're even more bullish on the DeFi projects built on top of Ethereum and Polkadot.



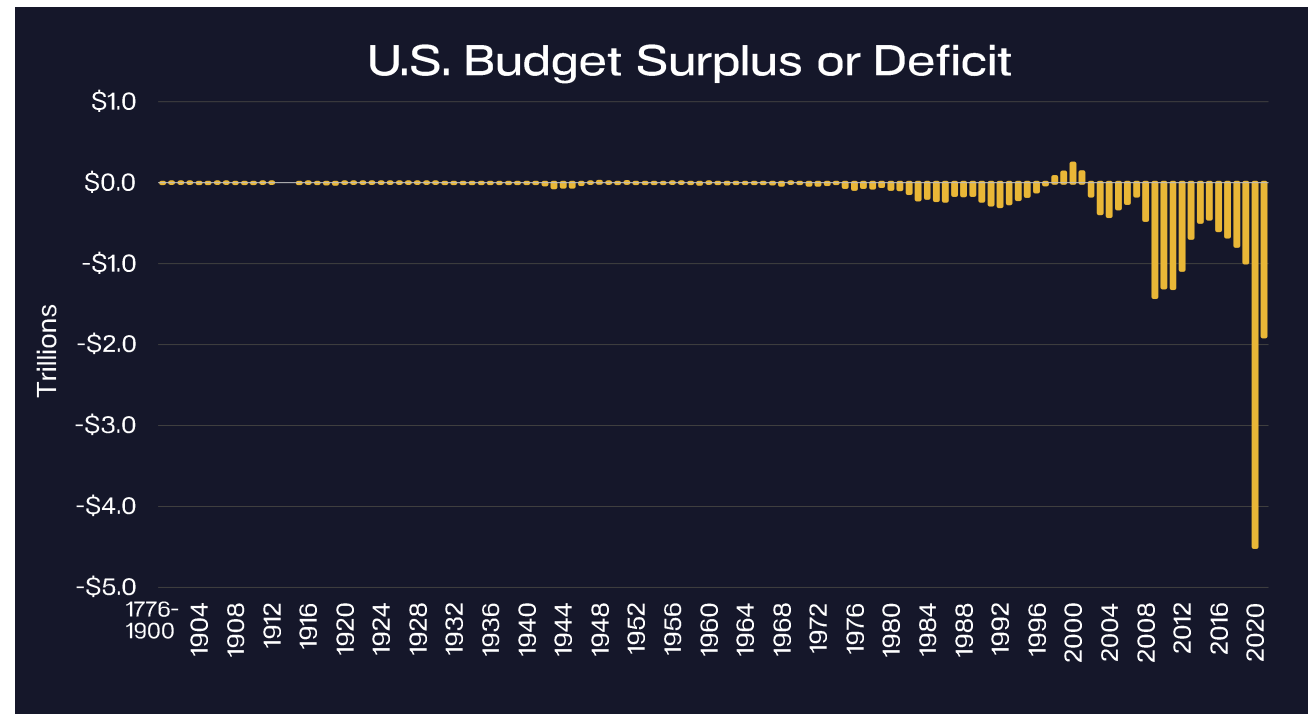


Why Now?



Money Printing

The United States printed more money in June 2020 than in the first two centuries after its founding.

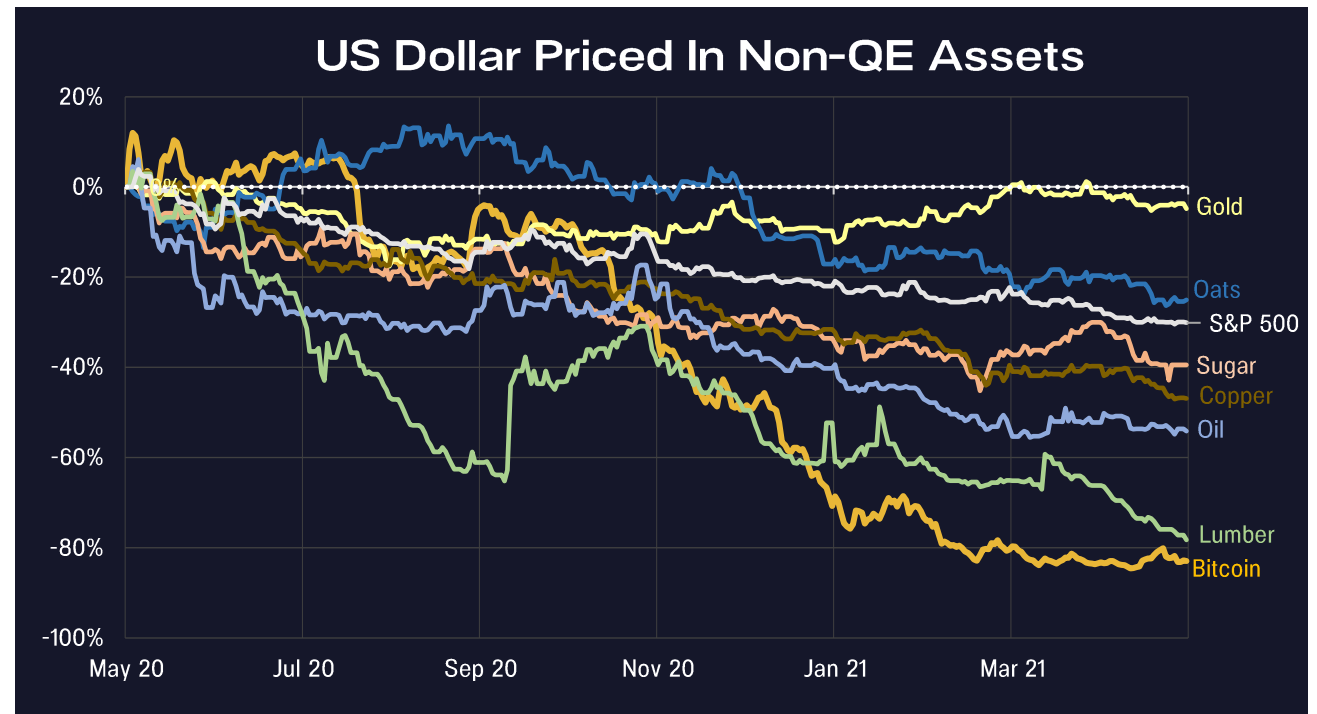




The Price of Paper Money

It seems like the price of everything is surging up. A better perspective is that the value of most things is relatively stable – it's just the value of paper money that is moving.

To help visualize what Quantitative Easing is doing to the price of the US dollar we've plotted the value of the US dollar – as quoted in terms of things that cannot be quantitatively eased:





Legendary Investors in Bitcoin

The list of big name investors in cryptocurrency is expanding quickly.

Paul Tudor Jones

Founder of Tudor
Investment Corporation

Investing in bitcoin is “...like investing with Steve Jobs and Apple or investing in Google early...” “I think we are in the first inning of bitcoin and it’s got a long way to go.” (Oct 2020)

Stanley Druckenmiller

Chairman and President
of (now closed)
Duquesne Capital
Management

“I’m a bit of a dinosaur, but I have warmed up to the fact that bitcoin could be an asset class that has a lot of attraction as a store of value.” (Nov 2020)

BIG-NAME CRYPTO SUPPORTERS

Bill Miller

Founder of Miller Value Partners

Abigail Johnson

CEO of Fidelity Investments

Jim Cramer

Host of Mad Money on CNBC

Mark Cuban

Entrepreneur

Kevin O'Leary

Entrepreneur

Cathie Wood

Founder and CEO of ARK Invest

Chamath Palihapitiya

Founder and CEO of Social Capital

Tim Draper

Founder of Draper Fisher Jurvetson

Jack Dorsey

Co-Founder and CEO of Twitter

Naval Ravikant

Co-Founder and Chairman of AngelList



Corporations, Institutions Buying

In what has been an unprecedented year of macroeconomic uncertainty and monetary and fiscal policy, corporations and institutions are turning to bitcoin as an inflation hedge.



MicroStrategy invested \$1.5 billion into bitcoin in a long-term play on it as a store-of-value

MassMutual, founded in 1851, invested \$100 million in bitcoin out of its general account

Square invested 1% of total assets into bitcoin totaling \$50mm or 4,709 bitcoins

ENDOWMENTS IN CRYPTO





Regulatory Clarity

Regulators acknowledge the benefits of cryptocurrency and blockchain technology.

Jay Clayton

Former SEC Chairman

*"We determined that **bitcoin** was **not a security**, it was much more payment mechanism and store of value."* (Nov 2020)

CFTC

Commodity
Futures Trading
Commission

*"Bitcoin and other virtual currencies are encompassed in the definition and **properly defined as commodities**."* (Dec 2014)

Janet Yellen

U.S. Secretary of the
Treasury

"I think it important we consider the benefits of cryptocurrencies and other digital assets, and the potential they have to improve the efficiency of the financial system...."

"I intend to work closely with the Federal Reserve Board and the other federal banking and securities regulators on how to implement an effective regulatory framework for these and other FinTech innovations." (Jan 2021)



Market Assessment

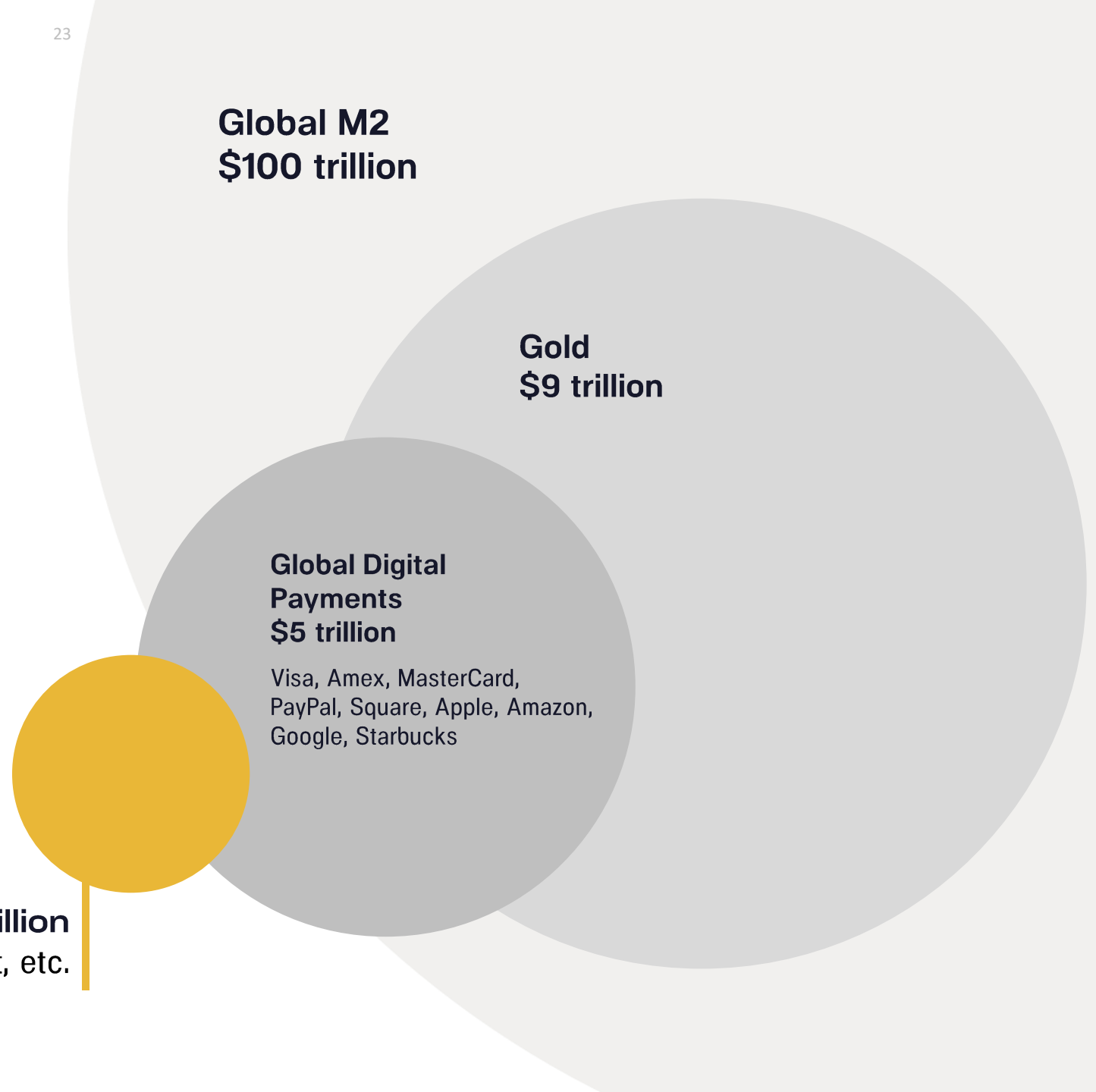
Asymmetric Opportunity

We're still in the early stages of adoption.

Cryptocurrency may serve as a global reserve currency or a viable alternative to fixed-supply assets like gold.

Smart contract platforms can be the underpinning of a new open financial system.

Cryptocurrency Market Size \$2 trillion
Bitcoin, Ethereum, Polkadot, etc.





213% Compound Annual Growth Rate

Bitcoin has its manic bubbles and drawdowns, but when zooming out and graphing it on a logarithmic scale, it steadily grinds up at a **213% compound annual growth rate**.

On average, Bitcoin has tripled every year since its inception.





Non-Correlated Asset

One of our principal arguments for bitcoin in a portfolio is that it has had a **213% 11-year compound annual growth rate with essentially zero correlation to stocks, bonds, oil, and other asset classes.**

	BTC	GC1	Global Bonds	SI1	U.S. Bonds	Comm-odities	CL1	HSI	TPX	RTY	CCMP	SX5E	UKX	SPX
Bitcoin	X													
Gold	0.06	X												
Global Bonds	0.12	0.67	X											
Silver	-0.05	0.80	0.51	X										
U.S. Bonds	-0.05	0.41	0.74	0.35	X									
Commodities	0.12	0.16	-0.06	0.18	-0.15	X								
Oil	0.12	0.17	0.08	0.24	-0.03	0.71	X							
Hang Seng	0.04	0.18	0.03	0.28	-0.15	0.35	0.31	X						
TOPIX	0.09	0.02	-0.08	0.12	-0.29	0.47	0.41	0.65	X					
Russell 2000	0.01	-0.07	-0.14	0.02	-0.29	0.29	0.49	0.52	0.61	X				
NASDAQ	-0.02	-0.09	-0.12	0.04	-0.20	0.33	0.56	0.53	0.65	0.92	X			
EuroStoxx 50	0.22	0.08	0.04	0.16	-0.28	0.37	0.51	0.63	0.64	0.68	0.69	X		
FTSE 100	0.16	0.04	-0.02	0.20	-0.29	0.30	0.45	0.68	0.70	0.71	0.71	0.89	X	
S&P 500	0.00	-0.14	-0.19	-0.03	-0.31	0.37	0.52	0.47	0.68	0.90	0.96	0.72	0.73	X
Average	0.08	0.22	0.22	0.23	0.27	0.30	0.35	0.37	0.42	0.43	0.45	0.45	0.45	0.46



Bitcoin Supply & Demand

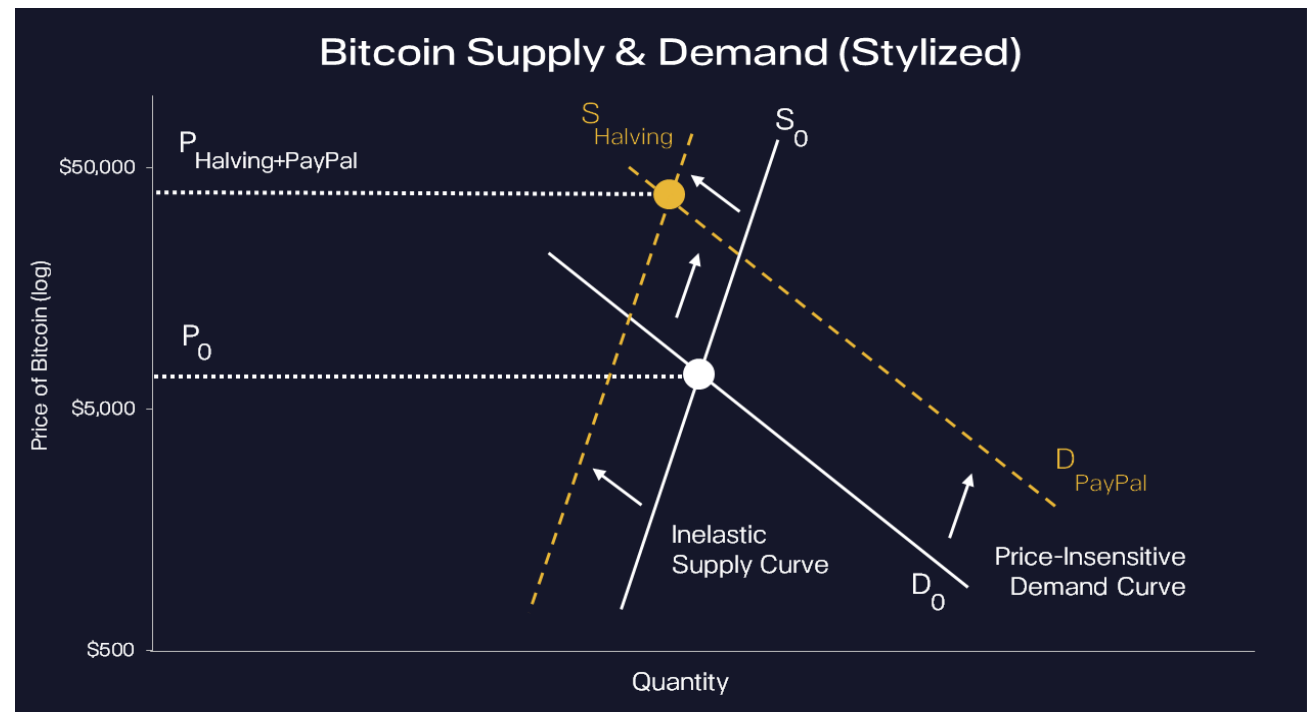
The most basic framework for analyzing Bitcoin's price is simple Econ 101: Supply and Demand

Demand Curve Shift

Demand for bitcoin is rising sharply as new companies begin offering crypto trading such as PayPal.

Supply Curve Shift

The bitcoin block reward halved in May 2020, further limiting the supply available for purchase.



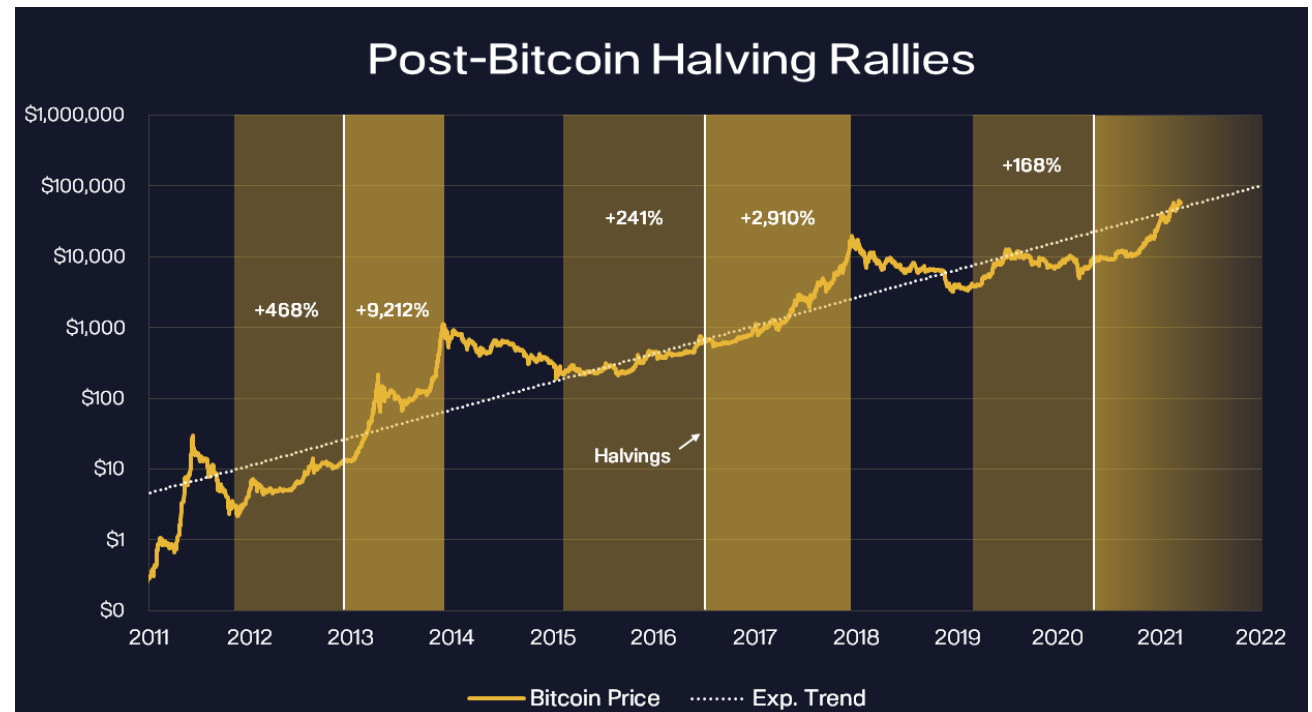


Bitcoin Halving

Bitcoin's monetary policy is mathematical and predictable by design. Every four years, the new supply of bitcoin is halved.

Halvings	Block Reward (BTC)
	50
2012	25
2016	12.5
2020	6.25

Halvings reduce new supply, creating further bitcoin scarcity.





Possible Terminal Value of Bitcoin

For every million new users, the price of bitcoin rises \$200. It happened every time except for February 2016, when the price was slow to hit.

The rise in the price has been amazingly constant. If this relationship holds, bitcoin will hit \$200,000 in 2022.

Using these relationships, we can postulate a possible terminal value for bitcoin. If the relationship holds, bitcoin would become fairly valued at \$700,000 if all 3.5 billion smartphone users adopted it.

Possible Terminal Value Of Bitcoin			
Bitcoin Price	Number of People Using Bitcoin	When	
\$.2	1,000	Dec 2010	
\$ 2	10,000	May 2012	
\$ 20	100,000	Dec 2012	
\$ 200	1,000,000	Nov 2013	
\$ 2,000	10,000,000	May 17 / Feb 16	
\$ 20,000	100,000,000	Dec 2020	
\$ 200,000	1,000,000,000	2022?	
\$ 700,000	3,500,000,000	Terminal Value?	



Paper Money Impact

Cryptocurrency as an asset class has outperformed traditional assets in the crisis as an unprecedented amount of Quantitative Easing is driving up prices of fixed-quantity things.

Within the digital asset ecosystem, bitcoin is one on a list of high-performance protocol tokens offering use cases beyond store-of-value.

		ASSET RETURNS	1/1/20 – 8/8/21
CRYPTO ASSETS	Ethereum (ETH)		+2,225%
	Uniswap (UNI)		+666%
	Maker (MKR)		+650%
	Polkadot (DOT)		+579%
	Bitcoin (BTC)		+509%
TRADITIONAL ASSETS	Stocks (S&P 500)		+37%
	Gold (GC00)		+16%
	Commodities (CRB)		+15%
	Oil (CL1)		+12%
	Real Estate (DWRTF)		+9%
	Corporate Bonds (HYG)		0%
	U.S. Dollar (USDY)		-5%



Higher Lows

As investors, we tend to get caught up in the all-time highs. Equally important are the yearly lows.

Looking back at the low-point of the market for each year, bitcoin has shown consistent positive growth – there's only one year with a lower low than the previous year's.

Year	Bitcoin Low Price
2012	\$4
2013	\$13
2014	\$289
2015	\$172
2016	\$355
2017	\$756
2018	\$3,191
2019	\$3,391
2020	\$4,107
2021	\$28,723



E.S.G.

TL;DR: Blockchain is wonderful for E.S.G.

The recent ESG uproar has spent an inordinate amount of energy discussing the E in ESG.

But the conversation shouldn't end there – it's important to dig deeper into blockchain's relationship with the other two-thirds of the acronym. In our view, the total effect is unequivocally positive.

ESG Scorecard Blockchain			
	E	S	G
Bitcoin	?	✓ ✓	✓ ✓
Other Blockchains	✓	✓ ✓	✓ ✓
Blockchain Venture	✓	✓	✓



Deviation From Trend

Bitcoin is currently trading 33% below its 11-year exponential trend.

At the recent peak, it went just a bit over trend value. As you can see, past peaks were many multiples of trend value.

