

October 12

2022



Digital Gold Institute: Vision

R&D center of excellence focused on teaching, training, consulting, and advising about scarcity in digital domain (bitcoin and crypto-assets) and the underlying blockchain technology

Bitcoin: Digital Gold



The most successful attempt at creating *scarcity* in the digital realm without a trusted third party. Bitcoin is the digital equivalent of gold, disruptive for our current digital civilization and the future of money and finance. More a cryptocommodity than a crypto-currency, Bitcoin aims to be world reserve asset.



Blockchain: Hype or Reality?

Blockchain requires an intrinsic native digital asset to provide the economic incentives for the blockchain maintainers to be honest. Without the seigniorage revenues associated to its native asset, a blockchain system would need to select and appoint its maintainers, ultimately resorting to central governance.

Beyond Bitcoin: Timestamping



A timestamp demonstrates that a document existed in a specific status prior to a given point in time. Digital data can be securely timestamped though the attestation of its hash value in a blockchain transaction. What jewellery is for gold, timestamping could be for bitcoin: not essential but effective at leveraging its beauty.



Financial Services for Crypto

The most promising field, instead of technological applications of blockchain, is the development of financial services for crypto assets: those tools, practices, and facilities needed by institutional investors and high-networth individuals. Finance might not need blockchain, but the blockchain economy needs new financial services.

Digital Gold Institute: Activities

R&D center of excellence focused on teaching, training, consulting, and advising about scarcity in digital domain (bitcoin and crypto-assets) and the underlying blockchain technology

Consulting



Becoming one of our <u>partners</u> means empowering your business with a proper understanding of Bitcoin, crypto assets, and blockchain technology. It is a strategic choice that will allow you to leverage unique opportunities while avoiding the irrational hype that pollutes these topics.

Training



We offer training and education about Bitcoin, crypto assets, blockchain, distributed ledger, smart contracts, and cryptography: the program is based on the <u>Bitcoin and Blockchain</u>

<u>Technology</u> course taught at Milano-Bicocca and other universities.

Research



Our research activity includes quarterly <u>reports</u> on the bitcoin and blockchain ecosystem and the thesis works of our <u>students</u>. Anyway, the bulk of the activity is happening at the <u>Crypto Asset Lab</u> (CAL), a joint research initiative with the University of Milano-Bicocca.

>>>

Development

cryptography.

We <u>write code</u> and love to get our hands dirty in programming and technology. Check out our <u>OpenTimestamps calendar</u> free facility and <u>btclib</u>, an open-source Python library intended for teaching/learning/using bitcoin, its blockchain, and the associated elliptic curve

Advisory and Training for Institutions, Consultancies, and Private Firms

Selected current and past collaborations

















Deloitte.















Agenda

Market

Ecosystem

Regulation

Technology

The Institute

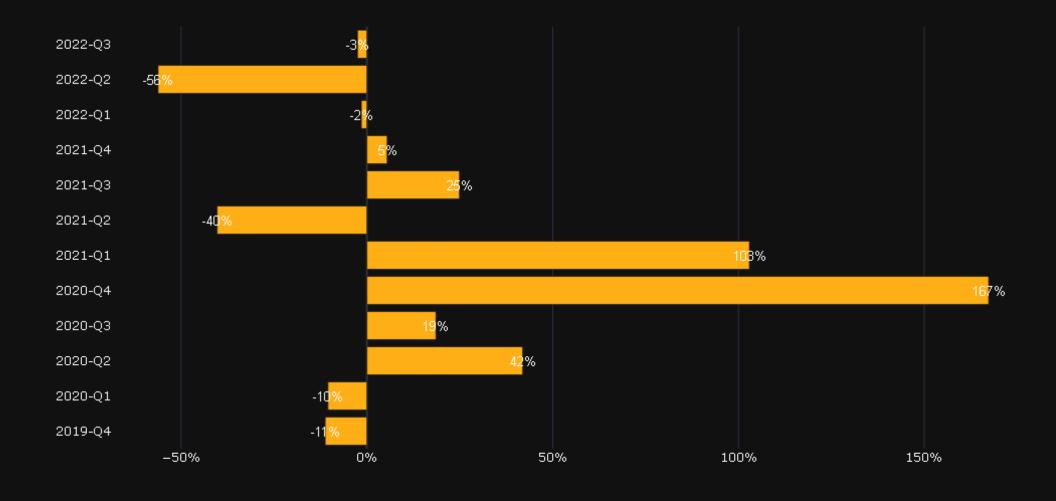




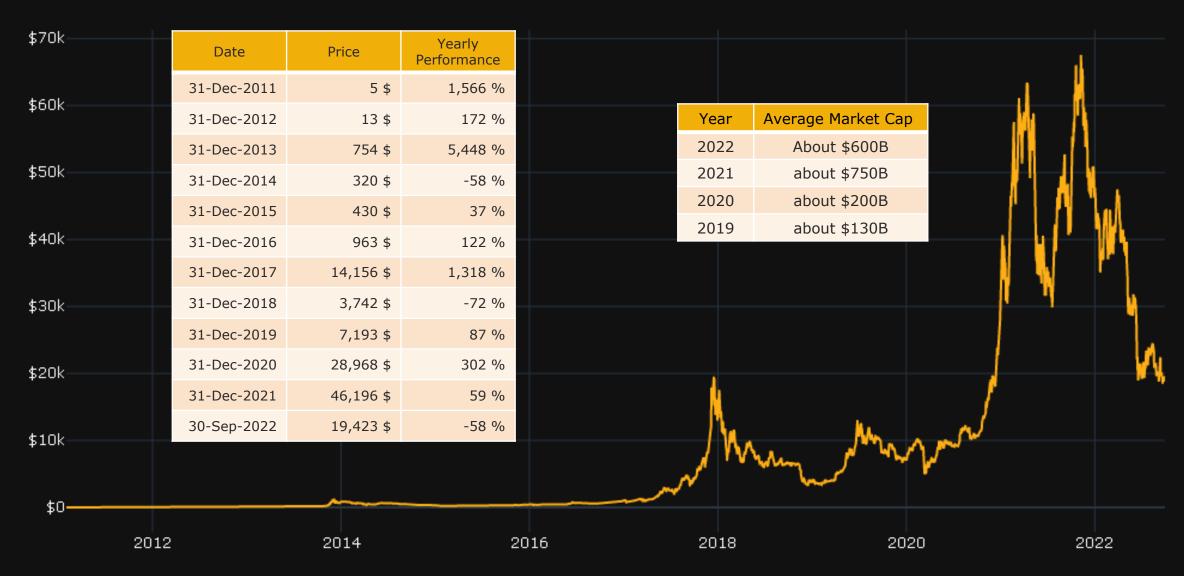
Bitcoin Performance (2022 Q3): -3%



Bitcoin Quarter Performances



Bitcoin Yearly Performance

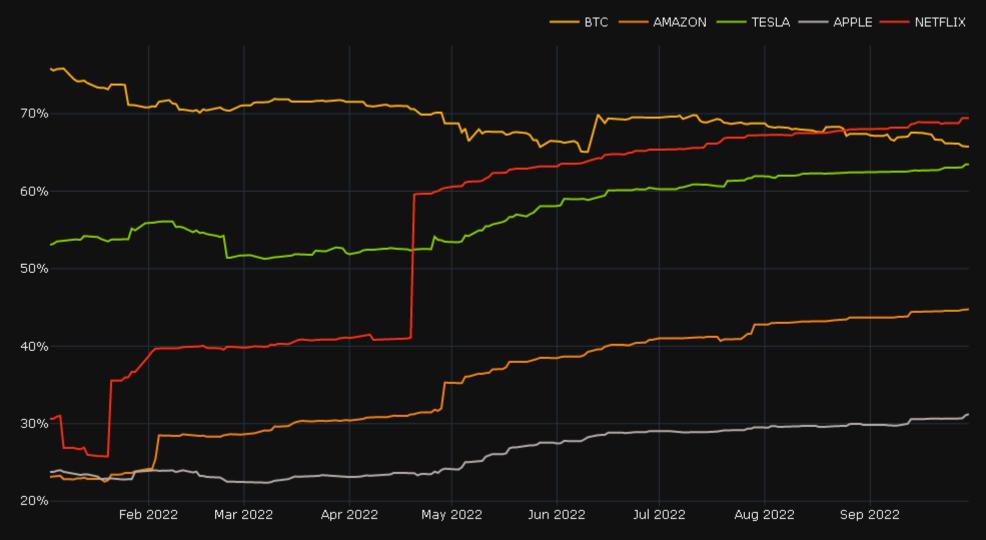


Bitcoin Minimum Prices



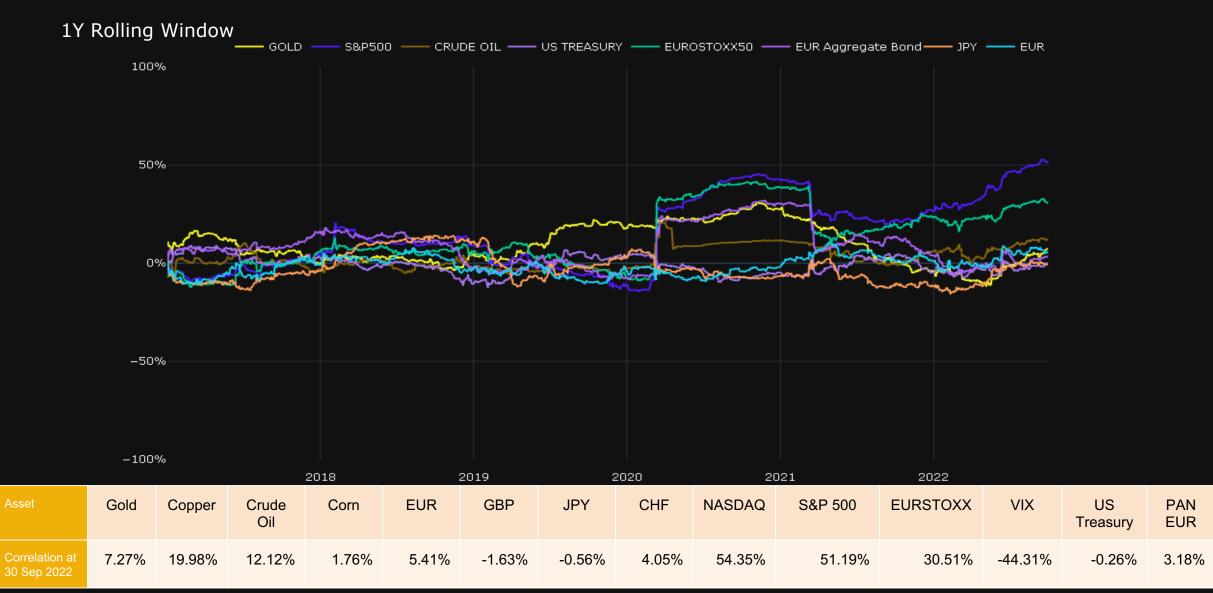
Volatility of Best Performing Assets

252 Days Rolling Window



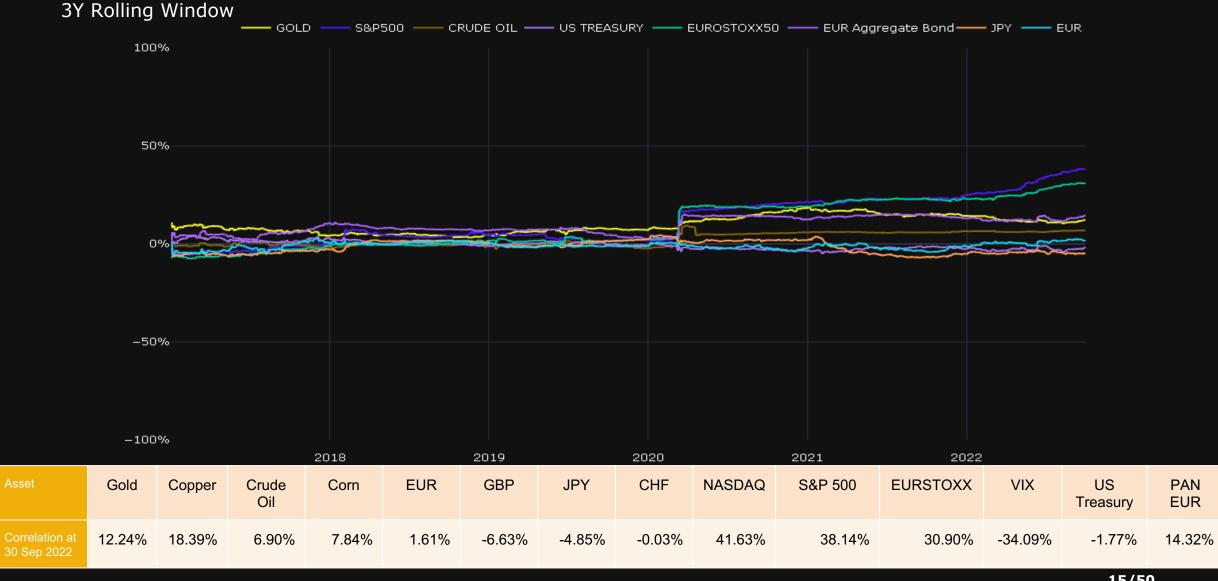
Asset Class Correlation Matrix

11															
ВТС	100.00%													Corr = 100%	
GOLD	7.27%	100.00%												Corr = -100%	
COPPER	19.98%	37.18%	100.00%												
CRUDE OIL	12.12%	32.41%	43.73%	100.00%											
CORN	1.76%	29.29%	21.34%	32.26%	100.00%										
EUR	5.41%	3.85%	10.38%	-3.11%	6.69%	100.00%									
GBP	-1.63%	12.07%	11.83%	5.56%	11.20%	71.69%	100.00%								
JPY	-0.56%	-0.33%	8.87%	5.46%	5.34%	31.30%	34.37%	100.00%							
CHF	4.05%	13.36%	15.29%	5.61%	5.27%	65.77%	55.61%	49.11%	100.00%						
NASDAQ	54.35%	-5.93%	19.76%	4.50%	-9.30%	-4.39%	-4.89%	-0.60%	-7.03%	100.00%					
S&P500	51.19%	-4.49%	25.32%	10.69%	-8.61%	-4.11%	-3.56%	-1.61%	-8.04%	96.00%	100.00%	0			
EUROSTOXX50	30.51%	-5.38%	26.05%	7.18%	-13.89%	-2.62%	2.85%	-6.55%	-8.75%	46.65%	51.85%	100.00%			
VIX	-44.31%	1.10%	-26.83%	-19.40%	6.47%	1.68%	1.75%	6.75%	8.07%	-74.57%	-78.11%	-44.99%	100.00%		
US TREASURY	-0.26%	26.13%	-4.57%	-15.32%	0.65%	6.61%	7.25%	-5.12%	11.68%	0.26%	-1.60%	-11.62%	7.23%	100.00%	
PAN EUR	3.18%	19.19%	-2.15%	-12.68%	8.04%	12.14%	13.67%	9.66%	20.51%	12.41%	11.71%	-0.63%	-5.01%	68.63%	100.00%
	ВТС	GOLD	COPPER	CRUDE OIL	CORN	EUR	GBP	JPY	CHF	NASDAQ	S&P500	EUROSTOXX50	VIX	US TREASURY	PAN EUR
	Crypto		Commodity			Currency				Equity			Volatility Bond		d
Asset	Gold C	opper	Crude Oil	Corn	EUR	GBP	JPY	CHF	NASD	AQ S	&P 500	EURSTOXX	VIX	US Treasury	PAN EUR
Correlation at 30 Sep 2022	7.27% 1	9.98%	12.12%	1.76%	5.41%	-1.63%	-0.56%	4.05%	54.3	55%	51.19%	30.51%	-44.31%	-0.26%	3.18%

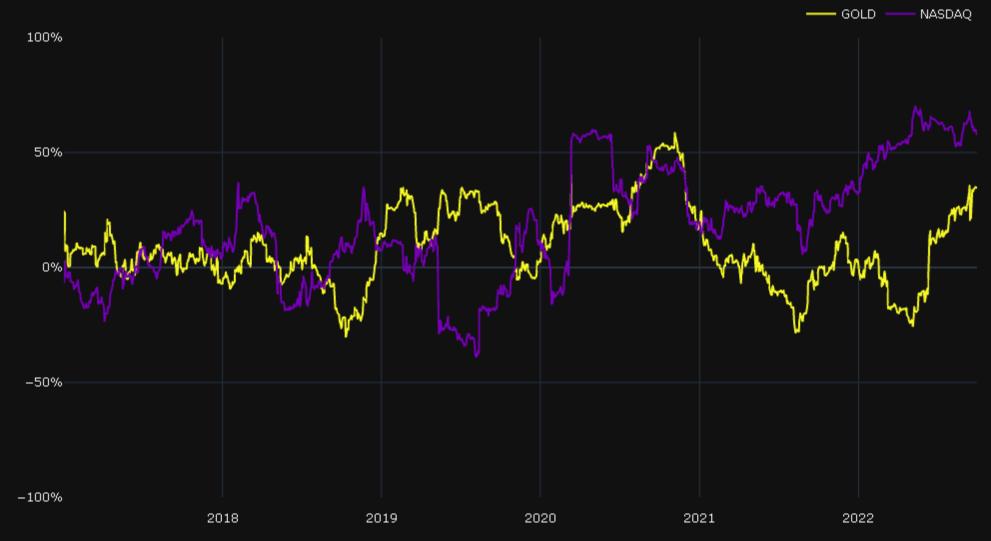


Asset Class Correlation Matrix

3	<u> </u>														
втс	100.00%	<mark>⁄</mark> 6												Corr = 100%	
GOLD	12.24%	6 100.00%												Corr = -100%	
COPPER	18.39%	6 21.92%	100.00%												
CRUDE OIL	6.90%	<mark>6</mark> 4.15%	13.16%	100.00%											
CORN	7.84%	6 13.15%	19.17%	12.32%	100.00%										
EUR	1.61%	7.46%	7.29%	-1.69%	1.72%	100.00%									
GBP	-6.63%	6.08%	4.89%	-0.73%	0.56%	63.27%	100.00%								
JPY	-4.86%	3.31%	6.37%	-2.27%	-2.72%	41.87%	33.77%	100.00%							
CHF	-0.03%	11.39%	8.41%	-2.34%	-0.92%	74.81%	49.77%	53.97%	100.00%						
NASDAQ	41.64%	6 11.05%	24.75%	10.93%	4.33%	-0.16%	-4.85%	5.22%	-3.49%	100.00%		_			
S&P500	38.15%	6 10.25%	28.66%	13.84%	5.71%	1.45%	-3.04%	4.29%	-3.66%	94.52%	100.00%				
EUROSTOXX50	30.91%	<mark>6</mark> 5.56%	28.99%	8.76%	2.63%	-5.25%	-1.74%	-14.69%	-10.93%	53.89%	62.17%	100.00%			
VIX	-34.09%	-3.66%	-27.02%	-12.43%	-5.21%	5.77%	4.05%	4.33%	9.24%	-70.87%	-71.28%	-47.92%	100.00%		
US TREASURY	-1.78%	22.13%	-12.45%	-7.89%	-6.23%	5.53%	5.21%	1.94%	8.99%	-15.32%	-23.46%	-23.08%	16.59%	100.00%	
PAN EUR	14.33%	6 21.44%	1.11%	2.57%	9.17%	9.56%	3.27%	8.43%	11.03%	20.83%	19.21%	11.56%	-9.54%	52.04%	100.00%
	ВТС	GOLD	COPPER	CRUDE OIL	CORN	EUR	GBP	JPY	CHF	NASDAQ	S&P500	EUROSTOXX50	VIX	US TREASURY	PAN EUR
	Crypto		Commodity			Currency				Equity			Volatility	Bond	d
Asset	Gold	Copper	Crude	Corn	EUR	GBP	JPY	CHF	NASD	AQ S8	P 500	EURSTOXX	VIX	US	PAN
			Oil											Treasury	EUR
Correlation at 30 Sep 2022	12.24%	18.39%	6.90%	7.84%	1.61%	-6.63%	-4.85%	-0.03%	41.6	3%	38.14%	30.90%	-34.09%	-1.77%	14.32%



1Q Rolling Window



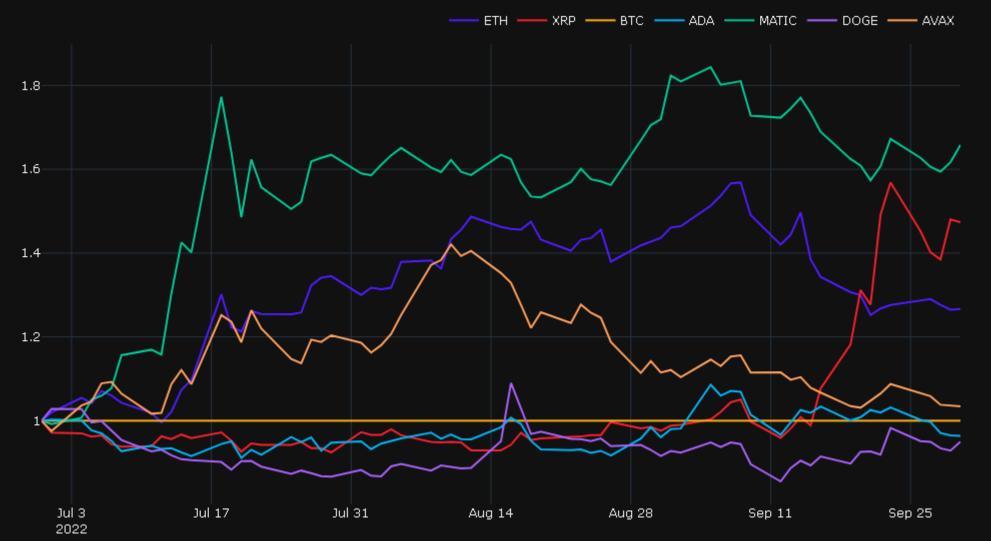
1Y Rolling Window



3Y Rolling Window



Altcoins vs Bitcoin (2022 Q3)



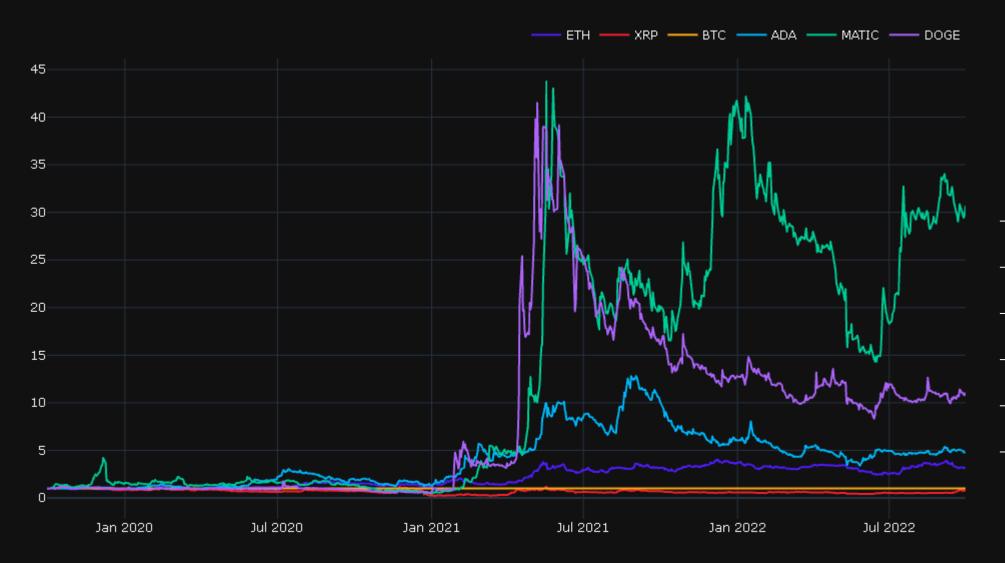
Altcoin	Performance
ETH	26.68%
XRP	47.38%
ADA	-3.61%
MATIC	65.82%
DOGE	-5.01%
AVAX	3.42%

Altcoins vs Bitcoin (1Y)



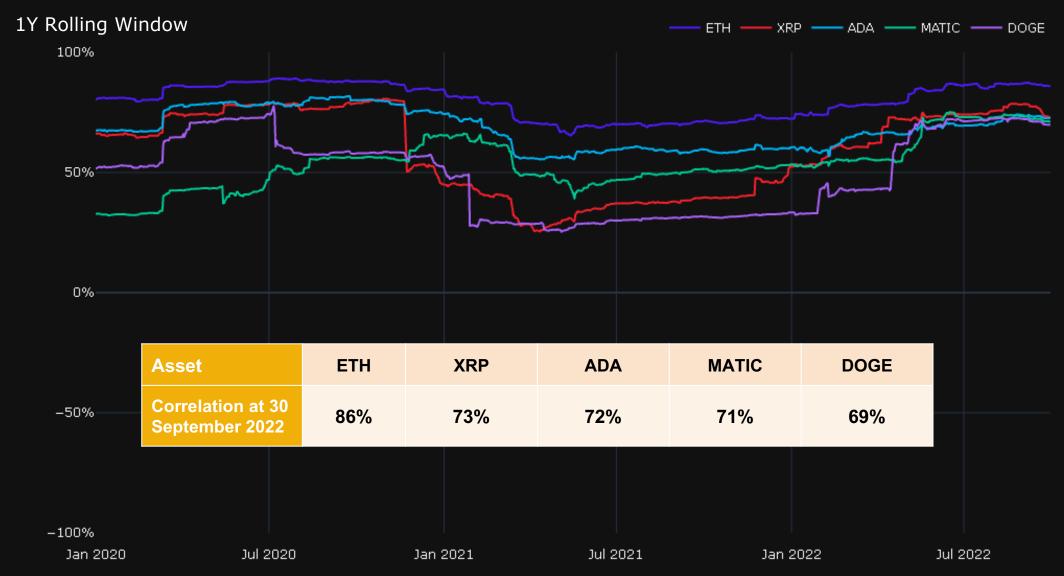
Altcoin	Performance
ETH	-0.30%
XRP	13.50%
ADA	-53.70%
MATIC	-55.44%
DOGE	-31.97%
AVAX	-41.96%

Altcoins vs Bitcoin (3Y)

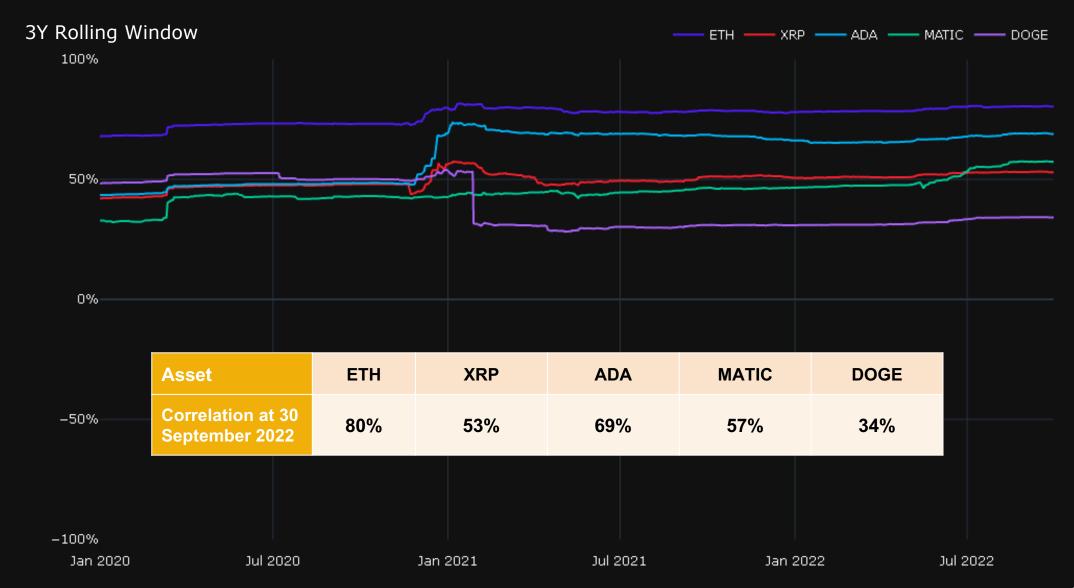


Altcoin	Performance
ETH	215.12%
XRP	-19.99%
ADA	376.83%
MATIC	2959.18%
DOGE	1002.42%

Altcoin Correlation With Bitcoin

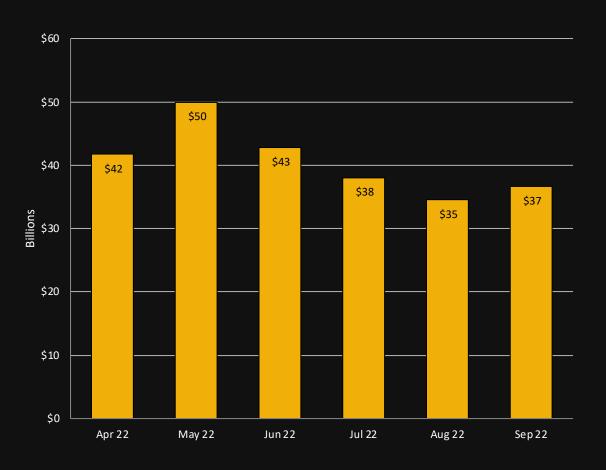


Altcoin Correlation With Bitcoin

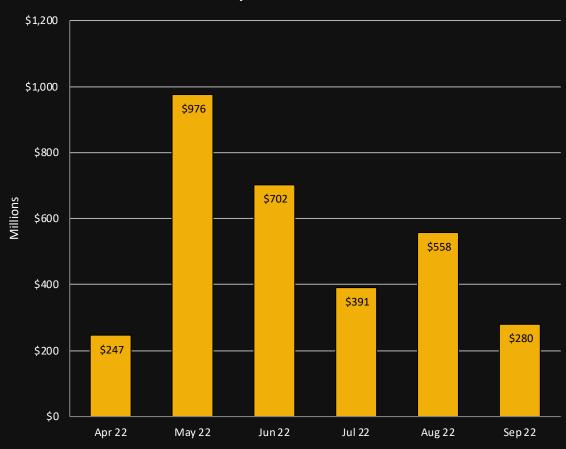


Bitcoin Listed Derivatives

CME Futures Volume

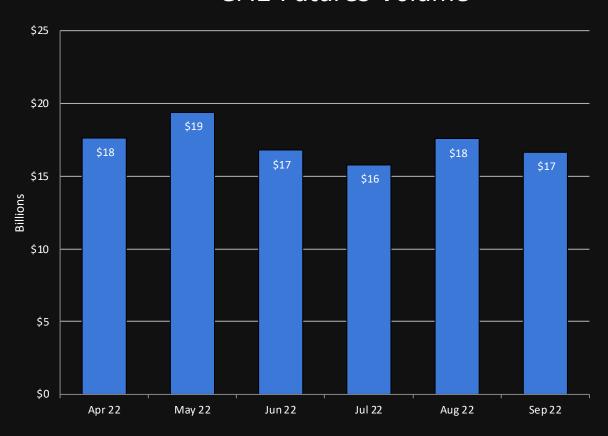


CME Options Volume



Ethereum Listed Derivatives

CME Futures Volume





The Terra/Luna Crash

- \$60 billion crypto ecosystem
- the biggest failure in crypto
- Implausible algorithm
- Not fully collateralized
- South Korean prosecutors ask
 Interpol to issue red notice
 for Do Kwon Financial Times





DeFi: The Lending Crisis

 Celsius: more than \$8 billion lent out to clients and \$12 billion in assets under management, suffered a series of severe losses (Stakehound, Badger DAO), deeply insolvent

 Three Arrows Capital: \$10 billion in assets, filed for Chapter 15 bankruptcy, founders are missing





Sam Bankman-Fried: FTX, Alameda

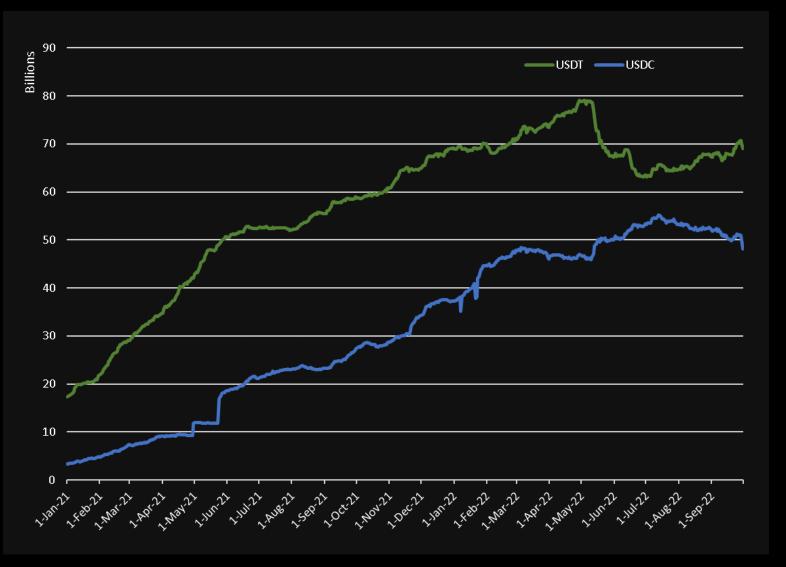
- 1. Crypto Exchange FTX Wins Bid to Buy Out Bankrupt Voyager for \$1.4B
- Crypto Billionaire Sam Bankman-Fried Eyeing Bid for Celsius Assets – Bloomberg
- 3. Alameda: Crypto Quant Shop With Ties to FTX Powers Bankman-Fried's Empire





Tether USDT / Circle USDC

- Tether, Bitfinex ordered to show financial documents over USDT stablecoin – TheBlock
- Circle introduces bridging protocol focused on USDC payments
- Crypto Exchange Binance to Stop Users From Trading USDC, the Second-Largest Stablecoin – WSJ
- Gemini wants to boost
 GUSD stablecoin volume in
 MakerDAO TheBlock



Tesla / MicroStrategy

- Tesla Sells 75% of Its Bitcoin Purchases WSJ
- MicroStrategy Buys 301 More Bitcoins, Now Holds Almost 130K





BlackRock

- BlackRock Offers Bitcoin Investing to Big Institutional Clients -Bloomberg
- BlackRock launches private trust offering direct bitcoin exposure
 The Block
- BlackRock bitcoin private trust BlackRock

BlackRock Teams Up With Coinbase in Crypto Market Expansion

- Bloomberg



Nasdaq

Nasdaq Makes First Big Crypto Push to Lure Institutional Clients

- Firm hired Ira Auerbach (Gemini) to run digital division
- Plans to offer crypto custody and expand to other services





SEC on Crypto Regulation

Gensler has pointed to DeFi and stablecoins as the two most problematic areas

He has also clarified that Bitcon is the only crypto that is surely not a security

«Bitcoin, the first crypto token, is referred to by some as "digital gold": trading like a precious metal, a speculative, scarce — yet digital — store of value.» Full Speech - Gensler on Bitcoin as Digital Gold



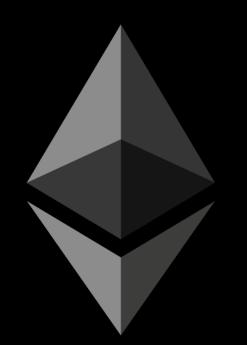
Gary Gensler Chair the U.S. Securities and Exchange

Digital Euro

- ECB selects external companies for joint prototyping of user interfaces for a digital euro ECB
- 5 Companies have been selected to test the integration of the digital Euro (CaixaBank, Worldline, EPI, Nexi, Amazon)
- The test will be carried out using existing front-end and processed through the Eurosystem back-end



Tornado Cash



- Crypto-Mixing Service Tornado Cash Blacklisted by US Treasury
 Coindesk
- <u>US Treasury imposes sanctions on 'crypto mixer' over alleged laundering Financial Times</u>
- U.S. Treasury Sanctions Notorious Virtual Currency Mixer Tornado Cash - U.S. Department of the Treasury
- Wife of Arrested Tornado Cash Developer Denies Russia Secret Service Links – Coindesk
- <u>US Treasury Explains How Americans Can Recover Crypto</u> Locked in Tornado Cash - Coindesk



MiCA Regulation

- The final draft has been finalized [released on Oct 10]
- To be approved by EU
- 18 months later becomes active



 Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Markets in Crypto-assets

G20 and Crypto Asset Reporting Framework

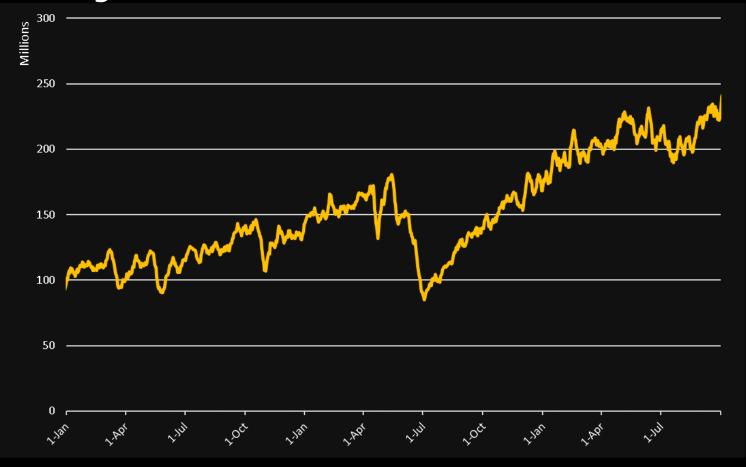
- G20 regulators call for new global rules on cryptocurrencies -TheBlock
- Crypto Asset Reporting Framework to be released by OECD [released on Oct 10]





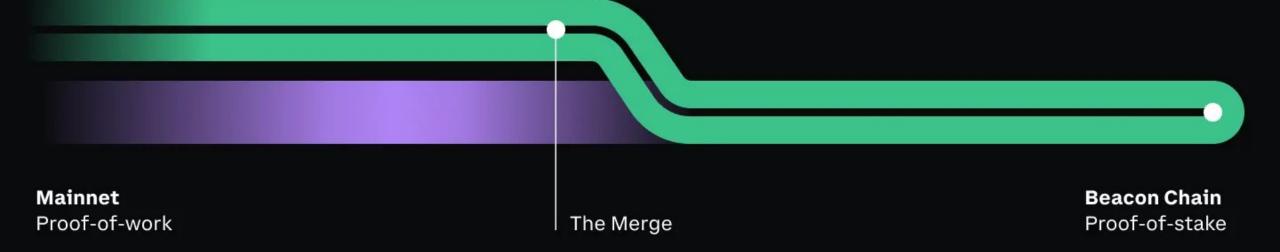
Mining: New Hash Rate All-Time High

Despite worries related to decreasing market price, a new hash rate all-time high has been established

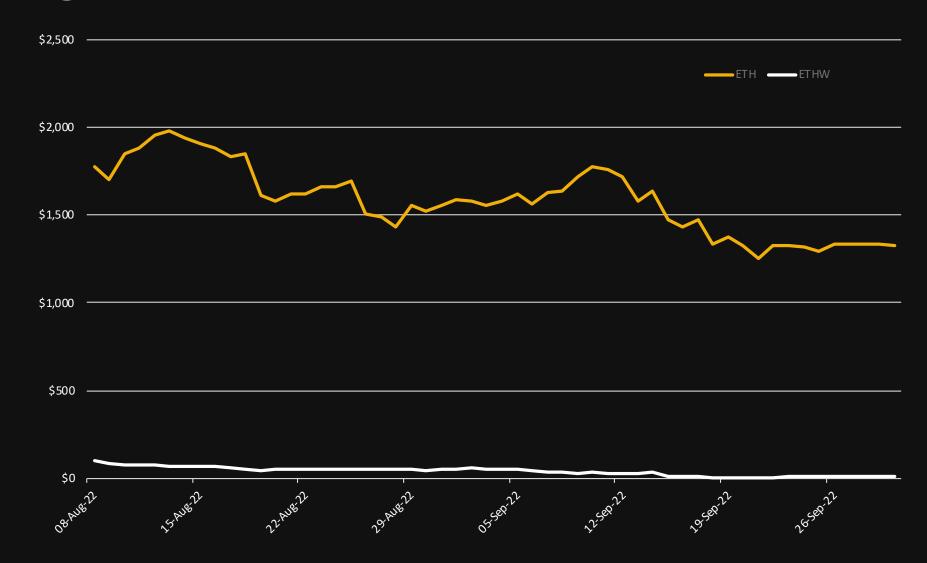


Ethereum: The Merge

- Proof-of-stakes merged on Sept 15, replacing Proof-of-Work
- Centralization issues?
- Stablecoins and DeFi moved to the PoS network, leaving behind a basically worthless Ethereum PoW fork (ETHW)



ETH vs ETHW





About us



- The quarterly report 2022Q2 has had a great reception
- We have been invited to record an 8 episodes podcast for Intesa Sanpaolo
- The Institute has been engaged by the ESSEC Business School,
 Department of Finance for the course Bitcoin and Crypto-Assets

CryptoWeek: Every Friday at 6PM

Live streaming:

- YouTube
- Facebook
- LinkedIn
- Twitter

Also available as podcast



Cos'è successo nel mondo crypto questa settimana?

Venerdì alle 18:00 in live streaming

Con Ferdinando M. Ametrano Amministratore delegato CheckSig Direttore scientifico DGI

www.checksig.com/it/cryptoweek

www.dgi.io/cryptoweek 46/50



Guest Speaker



Michele Mandelli

Managing Partner, CheckSig

"Investire in Bitcoin e Cripto: le sfide della custodia sicura"



Guest Speaker



Andrea Pantaleo
Lead Lawyer, DLA Piper

"OFAC e Transfer of Funds Regulation"



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