

**July 13**

**2022**

2022

Q2

# 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 crypto-commodity 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-net-worth 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 [partners](#) 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 [Bitcoin and Blockchain Technology](#) course taught at Milano-Bicocca and other universities.



## Research

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



## Development

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

# Advisory and Training for Institutions, Consultancies, and Private Firms

Selected current and past collaborations

Ania

  
ASSAGENTI

DEGLI STUDI  
DI MILANO  
UNIVERSITÀ  
BICOCCA

BNP PARIBAS

 **Borsa Italiana**

BTO

CERiF

 CRYPTOVALUES

**Deloitte.**


Fintech District

 **Harvard**  
Extension Student Environmental Club

  
GENERALI

INTESA  SANPAOLO

 **London**  
Stock Exchange

 prometeia

 **The European House**  
Ambrosetti

# Agenda

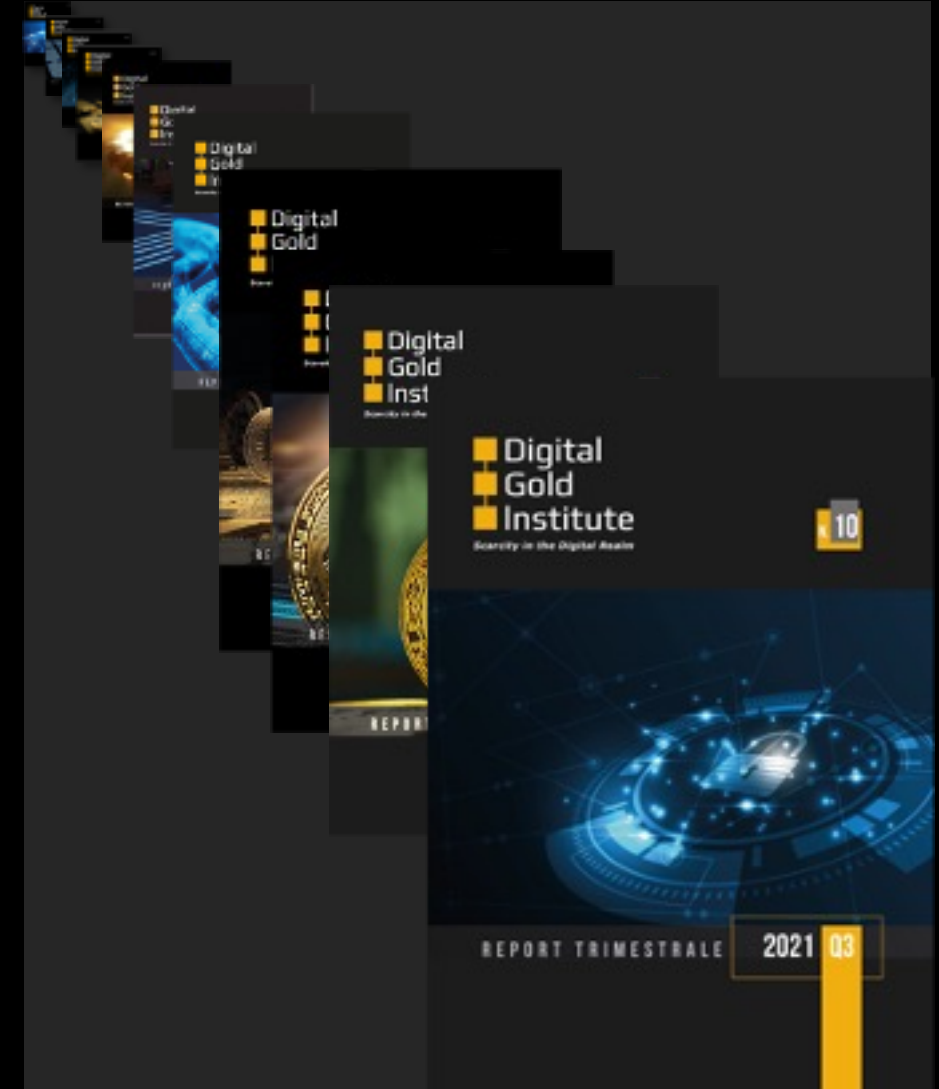
**Market**

**Ecosystem**

**Regulation**

**Technology**

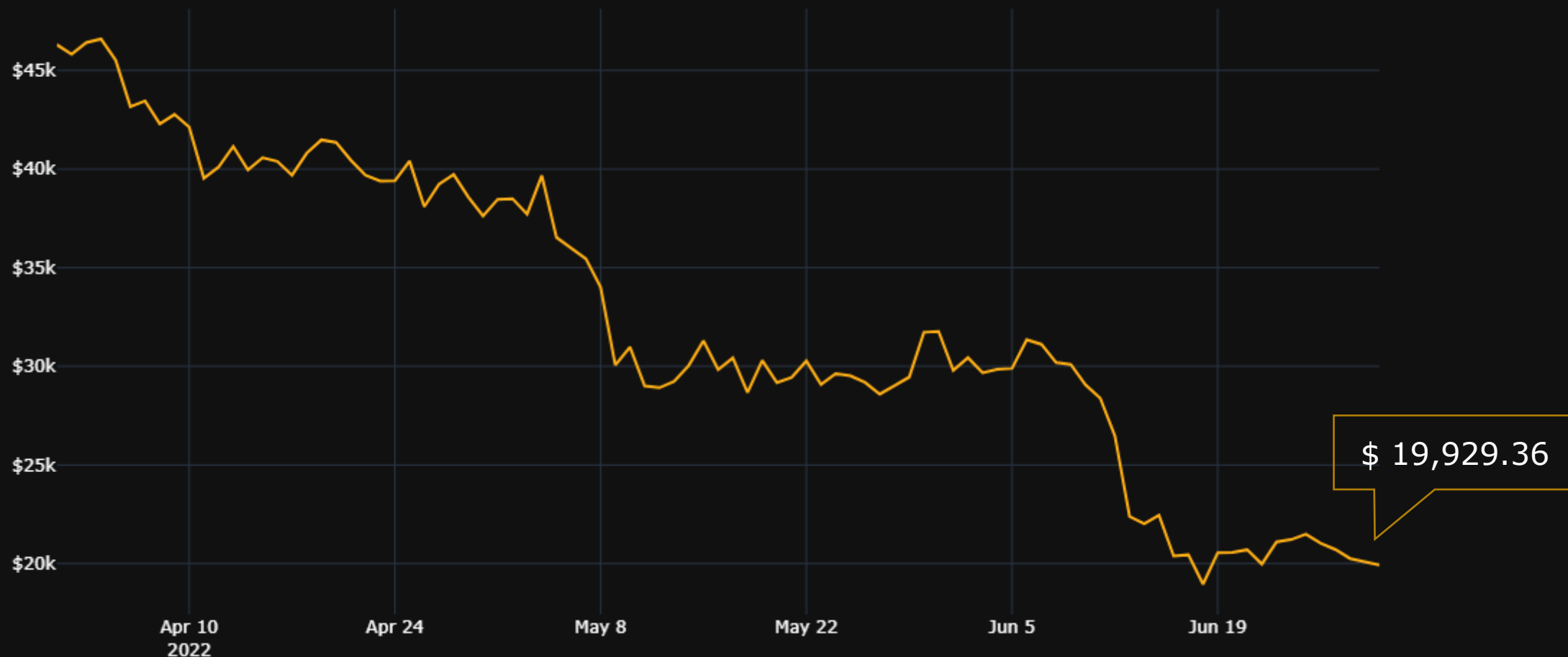
**The Institute**



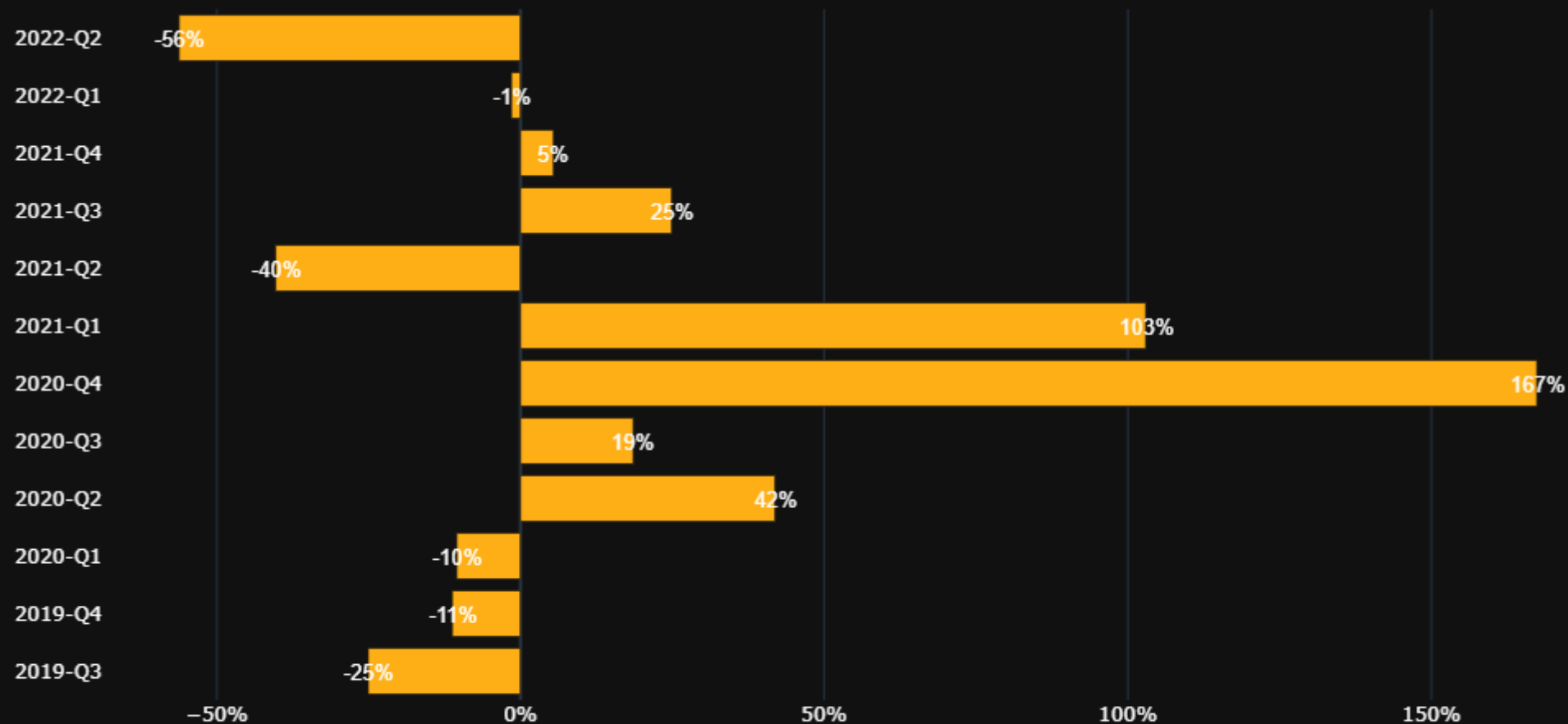


MARKET

# Bitcoin Performance (2022 Q2): -56.22%

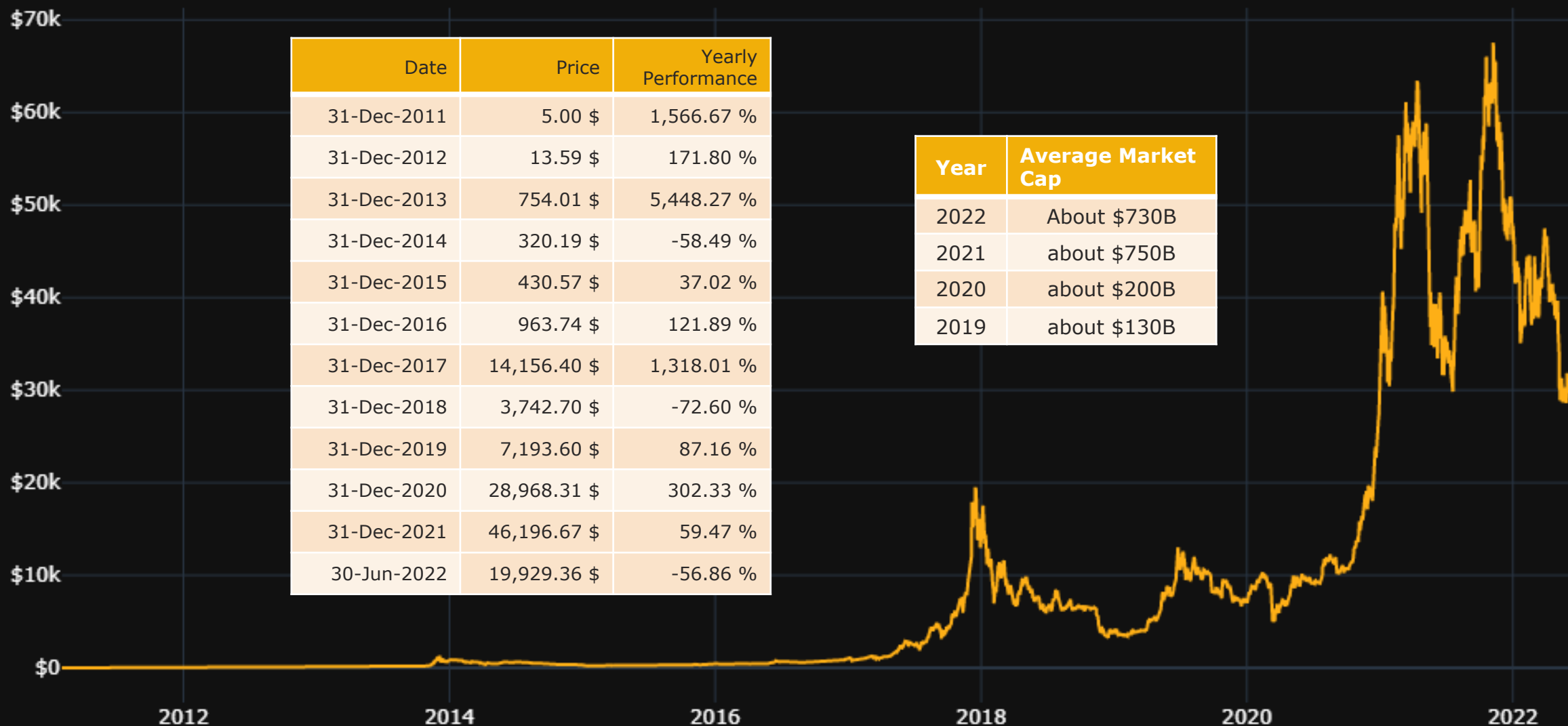


# Bitcoin Quarter Performances





# Bitcoin Yearly Performance

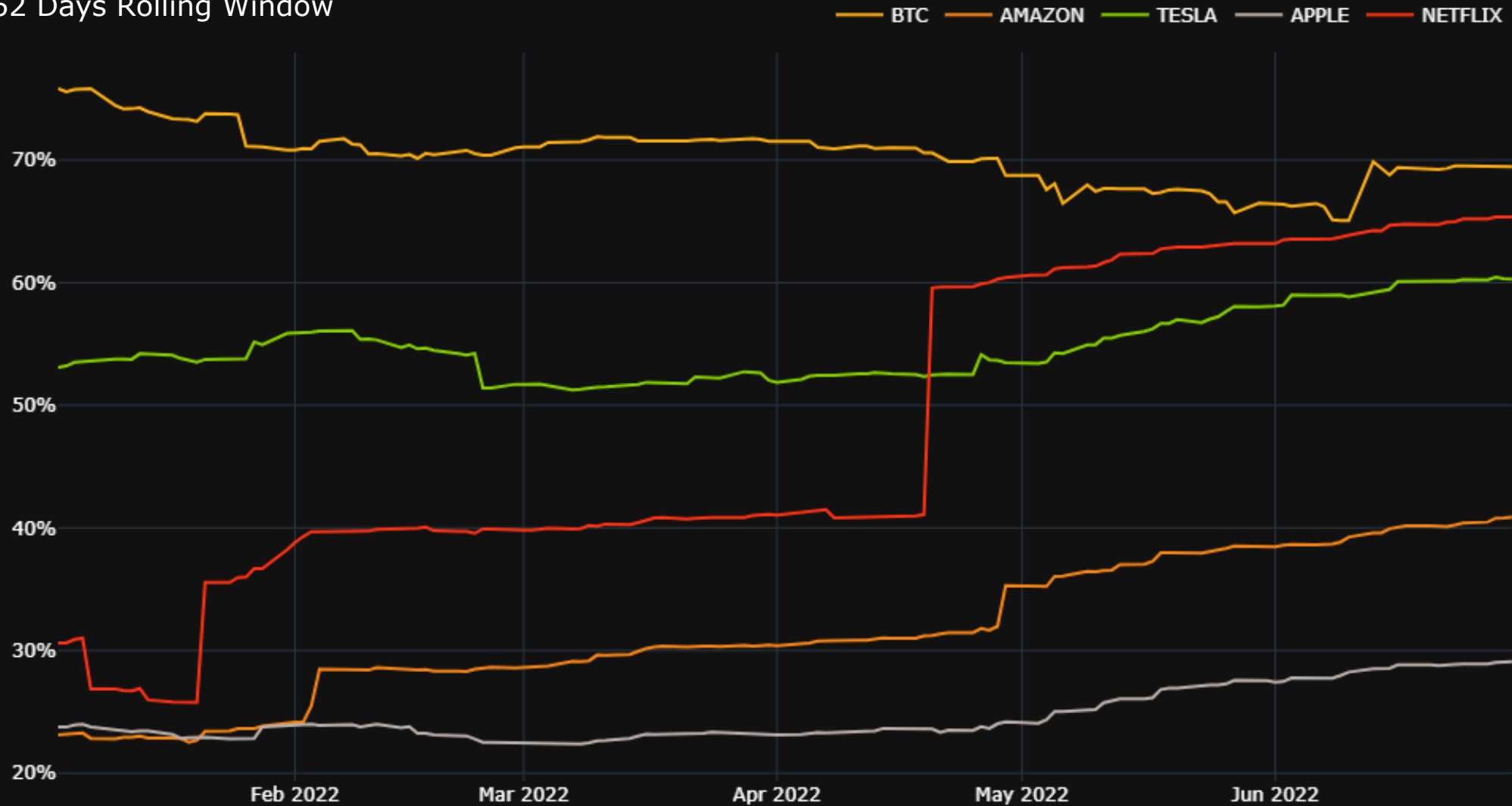


# Bitcoin Minimum Prices



# Volatility of Best Performing Assets

252 Days Rolling Window



# Asset Class Correlation Matrix

1Y

BTC	100.00%																
GOLD	-0.90%	100.00%															
COPPER	19.00%	31.45%	100.00%														
CRUDE OIL	7.86%	27.95%	38.81%	100.00%													
CORN	1.32%	18.76%	10.69%	26.34%	100.00%												
EUR	6.52%	4.46%	7.68%	-4.27%	-1.10%	100.00%											
GBP	-1.96%	7.65%	8.00%	6.20%	-0.17%	67.02%	100.00%										
JPY	-1.89%	1.20%	4.15%	2.57%	-8.00%	24.08%	26.17%	100.00%									
CHF	-0.44%	13.77%	7.71%	2.40%	-4.25%	63.53%	55.40%	49.38%	100.00%								
NASDAQ	48.70%	-12.91%	22.60%	5.56%	-4.52%	0.55%	-3.42%	5.51%	-3.47%	100.00%							
S&P 500	46.46%	-13.38%	28.45%	12.12%	-2.85%	-0.23%	-2.70%	2.74%	-5.41%	95.48%	100.00%						
EUROSTOXX50	28.89%	-13.65%	23.30%	6.65%	-9.21%	-0.62%	-0.56%	-7.41%	-9.40%	46.38%	51.97%	100.00%					
VIX	-43.24%	3.77%	-33.15%	-25.24%	-2.25%	-2.45%	3.06%	1.94%	2.37%	-72.92%	-78.15%	-48.03%	100.00%				
US TREASURY	-1.59%	25.33%	-7.43%	-17.71%	-0.72%	10.28%	6.19%	0.61%	15.37%	-8.09%	-11.83%	-20.47%	16.63%	100.00%			
PAN EUR	3.94%	13.82%	-1.19%	-8.41%	9.72%	12.75%	6.91%	14.11%	22.53%	9.16%	6.73%	-11.53%	1.18%	69.14%	100.00%		
	BTC	GOLD	COPPER	CRUDE OIL	CORN	EUR	GBP	JPY	CHF	NASDAQ	S&P 500	EUROSTOXX50	VIX	US TREASURY	PAN EUR		
	Crypto	Commodity				Currency				Equity			Volatility	Bond			

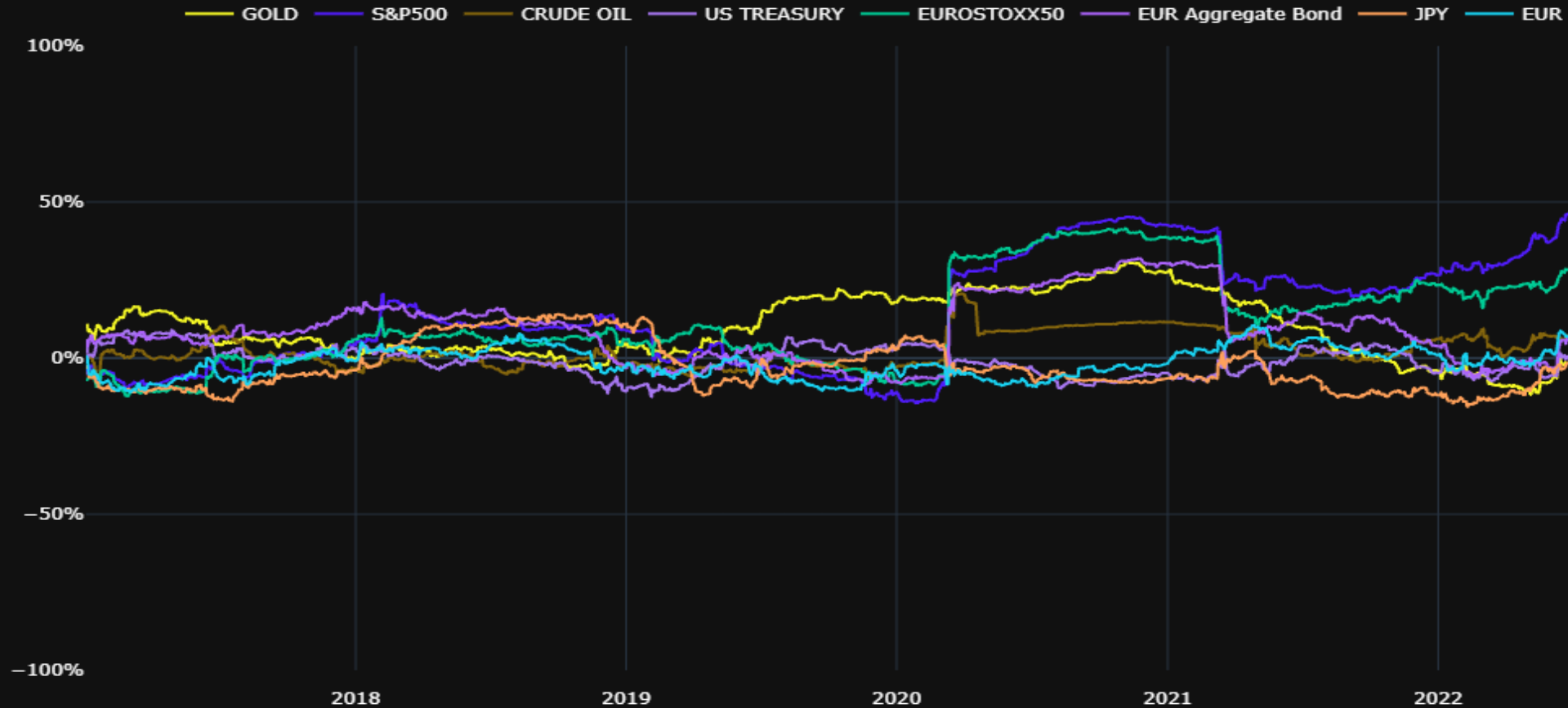
Corr = 100%

Corr = -100%

Asset	Gold	Copper	Crude Oil	Corn	EUR	GBP	JPY	CHF	NASDAQ	S&P 500	EURSTOXX	VIX	US Treasury	PAN EUR
Correlation at 30 Jun 2022	-0.90%	19.00%	7.86%	1.32%	6.52%	-1.96%	-1.89%	-0.44%	48.78%	46.46%	28.89%	-43.24%	-1.59%	3.94%

# Asset Class Correlation With Bitcoin

1Y Rolling Window



Asset	Gold	Copper	Crude Oil	Corn	EUR	GBP	JPY	CHF	NASDAQ	S&P 500	EURSTOXX	VIX	US Treasury	PAN EUR
Correlation at 30 Jun 2022	-0.90%	19.00%	7.86%	1.32%	6.52%	-1.96%	-1.89%	-0.44%	48.78%	46.46%	28.89%	-43.24%	-1.59%	3.94%

# Asset Class Correlation Matrix

3Y

BTC	100.00%															
GOLD	11.84%	100.00%														
COPPER	16.16%	17.64%	100.00%													
CRUDE OIL	6.11%	3.56%	12.18%	100.00%												
CORN	8.91%	11.19%	15.95%	12.26%	100.00%											
EUR	1.11%	6.35%	5.64%	-1.64%	1.14%	100.00%										
GBP	-6.64%	3.11%	2.86%	-0.67%	-0.37%	59.01%	100.00%									
JPY	-4.35%	4.31%	3.33%	-2.38%	-4.30%	40.96%	29.63%	100.00%								
CHF	-1.45%	10.18%	4.51%	-2.55%	-2.64%	75.55%	47.38%	56.28%	100.00%							
NASDAQ	37.11%	7.36%	26.26%	11.18%	6.03%	2.23%	-3.84%	7.25%	-2.09%	100.00%						
S&P500	34.01%	6.37%	29.72%	13.99%	7.63%	3.36%	-2.28%	5.95%	-2.62%	94.51%	100.00%					
EUROSTOXX50	27.99%	1.67%	28.83%	8.42%	2.77%	-5.32%	-2.69%	-17.04%	-12.56%	54.25%	62.57%	100.00%				
VIX	-28.85%	0.07%	-28.30%	-12.16%	-6.88%	4.31%	3.17%	2.92%	7.94%	-71.45%	-71.58%	-47.86%	100.00%			
US TREASURY	-0.91%	23.79%	-14.50%	-7.73%	-5.45%	4.34%	3.33%	4.36%	8.78%	-21.10%	-29.29%	-26.62%	21.69%	100.00%		
PAN EUR	13.81%	22.07%	0.74%	3.54%	11.22%	8.57%	-1.48%	9.54%	10.44%	19.20%	17.36%	8.04%	-7.30%	51.10%	100.00%	
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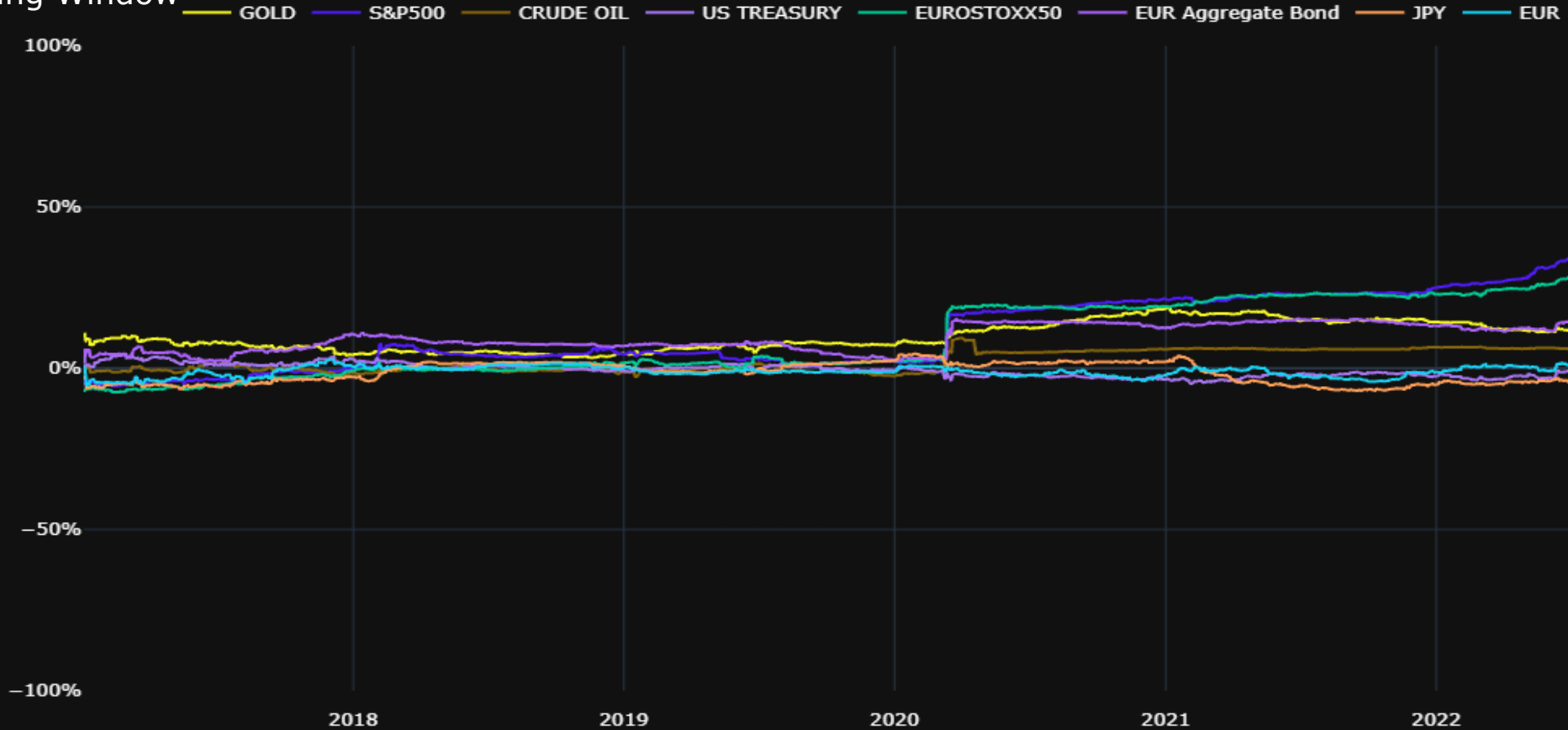
Corr = 100%

Corr = -100%

Asset	Gold	Copper	Crude Oil	Corn	EUR	GBP	JPY	CHF	NASDAQ	S&P 500	EURSTOXX	VIX	US Treasury	PAN EUR
Correlation at 30 Jun 2022	11.84%	16.16%	6.11%	8.91%	1.11%	-6.64%	-4.35%	-1.45%	37.11%	34.01%	27.99%	-28.85%	-0.91%	13.81%

# Asset Class Correlation With Bitcoin

3Y Rolling Window



Asset	Gold	Copper	Crude Oil	Corn	EUR	GBP	JPY	CHF	NASDAQ	S&P 500	EURSTOXX	VIX	US Treasury	PAN EUR
Correlation at 30 Jun 2022	11.84%	16.16%	6.11%	8.91%	1.11%	-6.64%	-4.35%	-1.45%	37.11%	34.01%	27.99%	-28.85%	-0.91%	13.81%

# Asset Class Correlation With Bitcoin

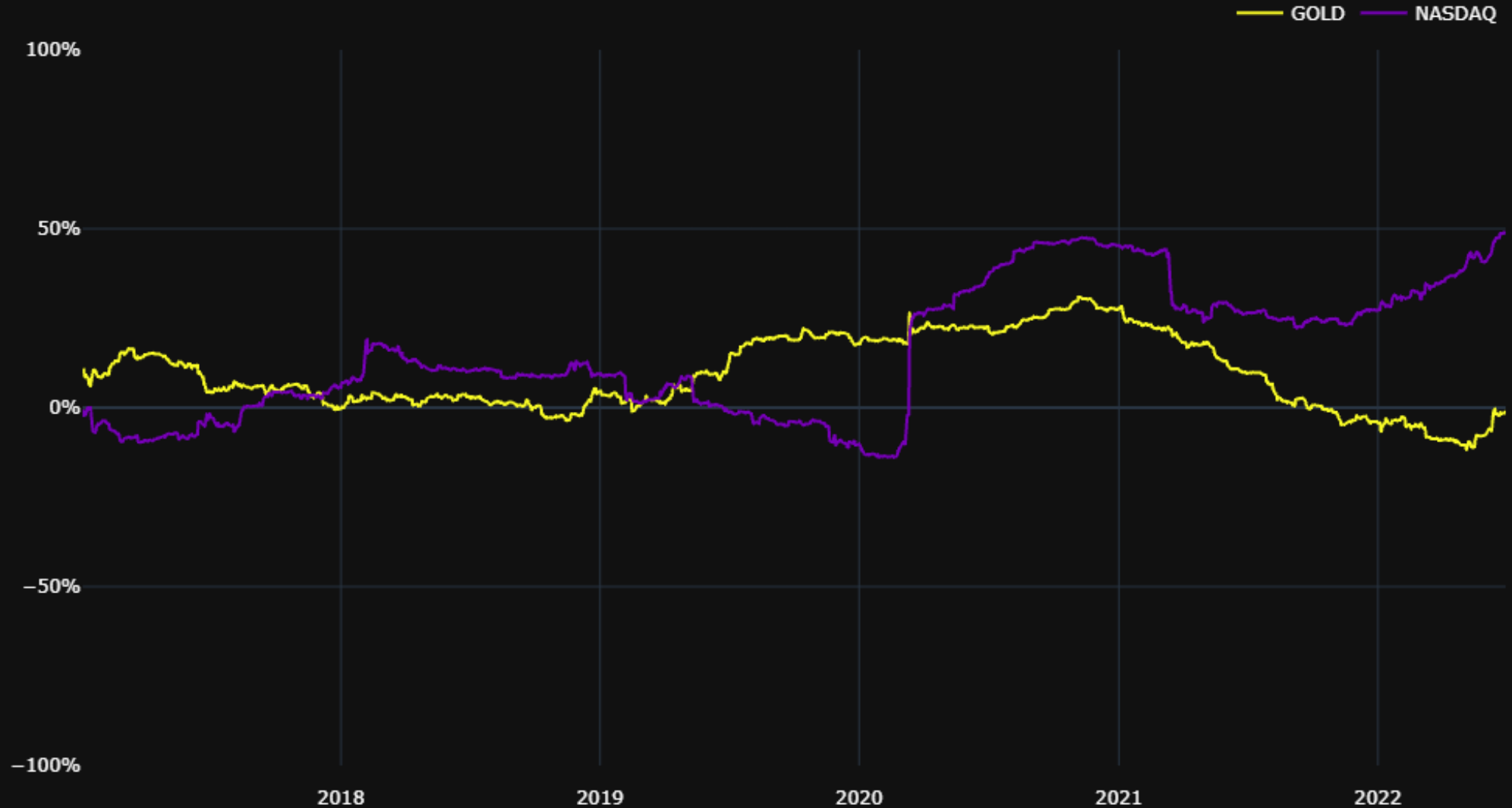
1Q Rolling Window





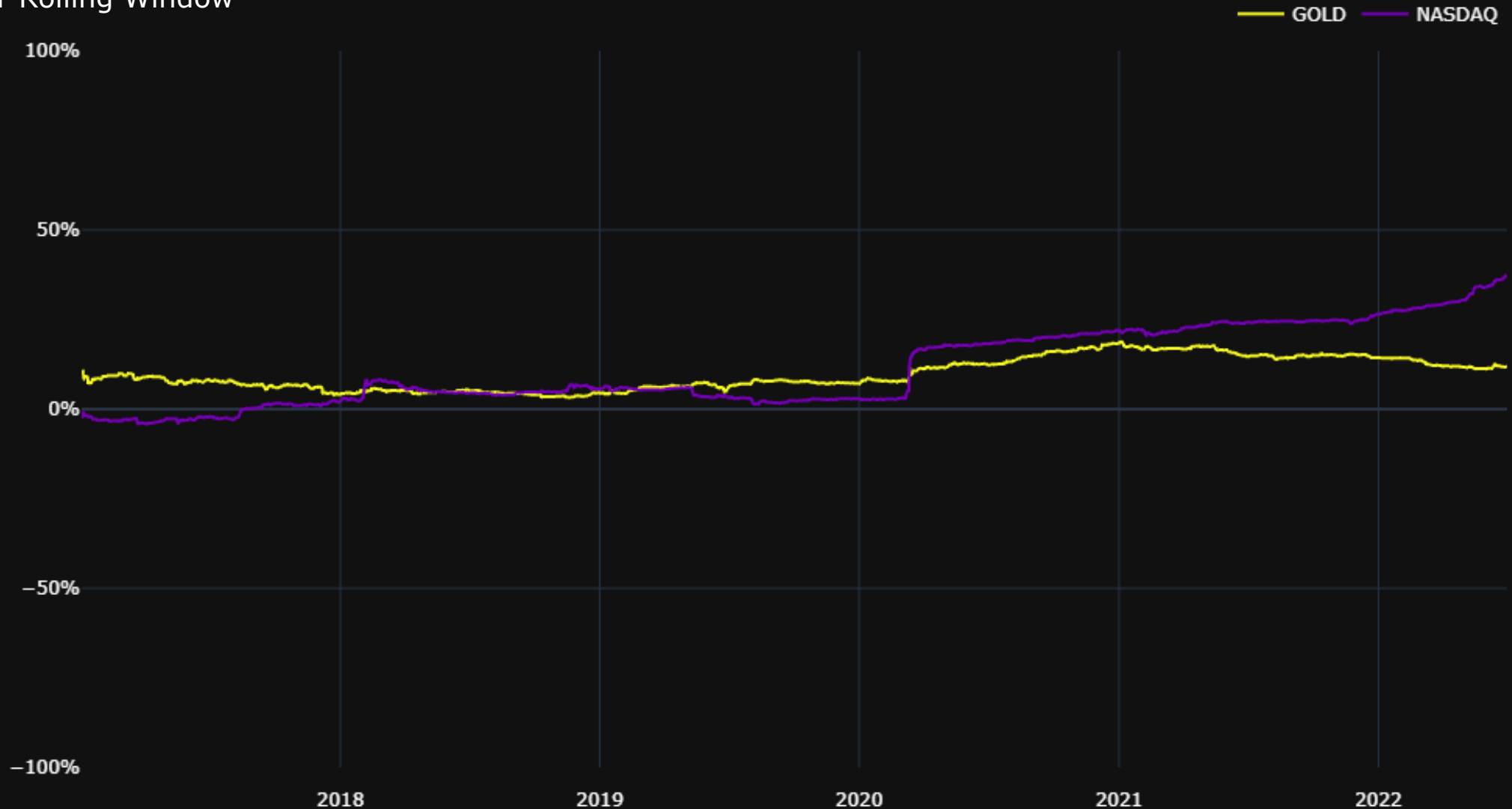
# Asset Class Correlation With Bitcoin

1Y Rolling Window



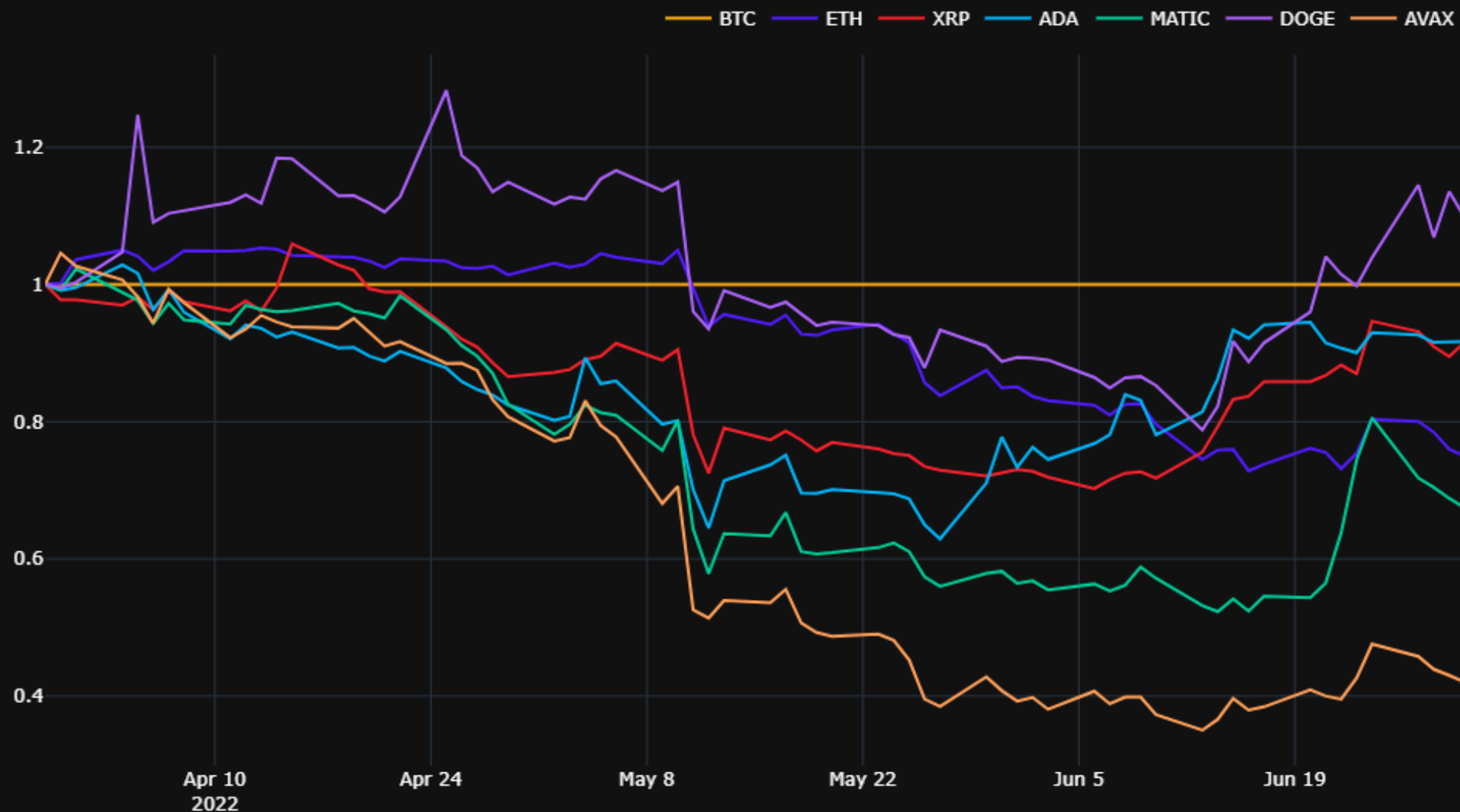
# Asset Class Correlation With Bitcoin

3Y Rolling Window





# Altcoins vs Bitcoin (2022 Q2)



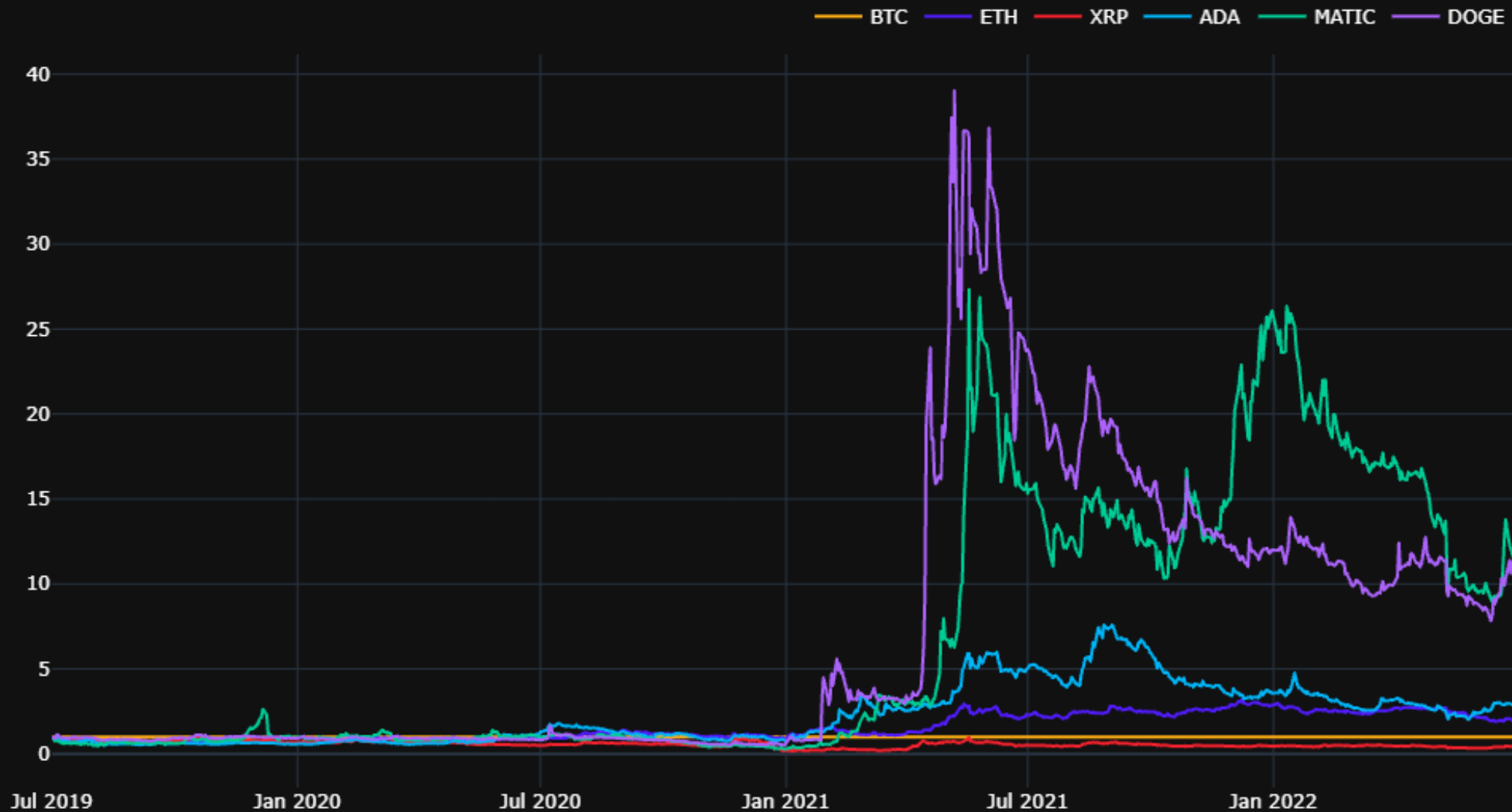
Altcoin	Performance
ETH	-25.00%
XRP	-8.41%
ADA	-8.31%
MATIC	-32.59%
DOGE	9.77%
AVAX	-57.96%

# Altcoins vs Bitcoin (1Y)



Altcoin	Performance
ETH	-16.89%
XRP	-16.90%
ADA	-41.26%
MATIC	-27.58%
DOGE	-53.96%
AVAX	150.79%

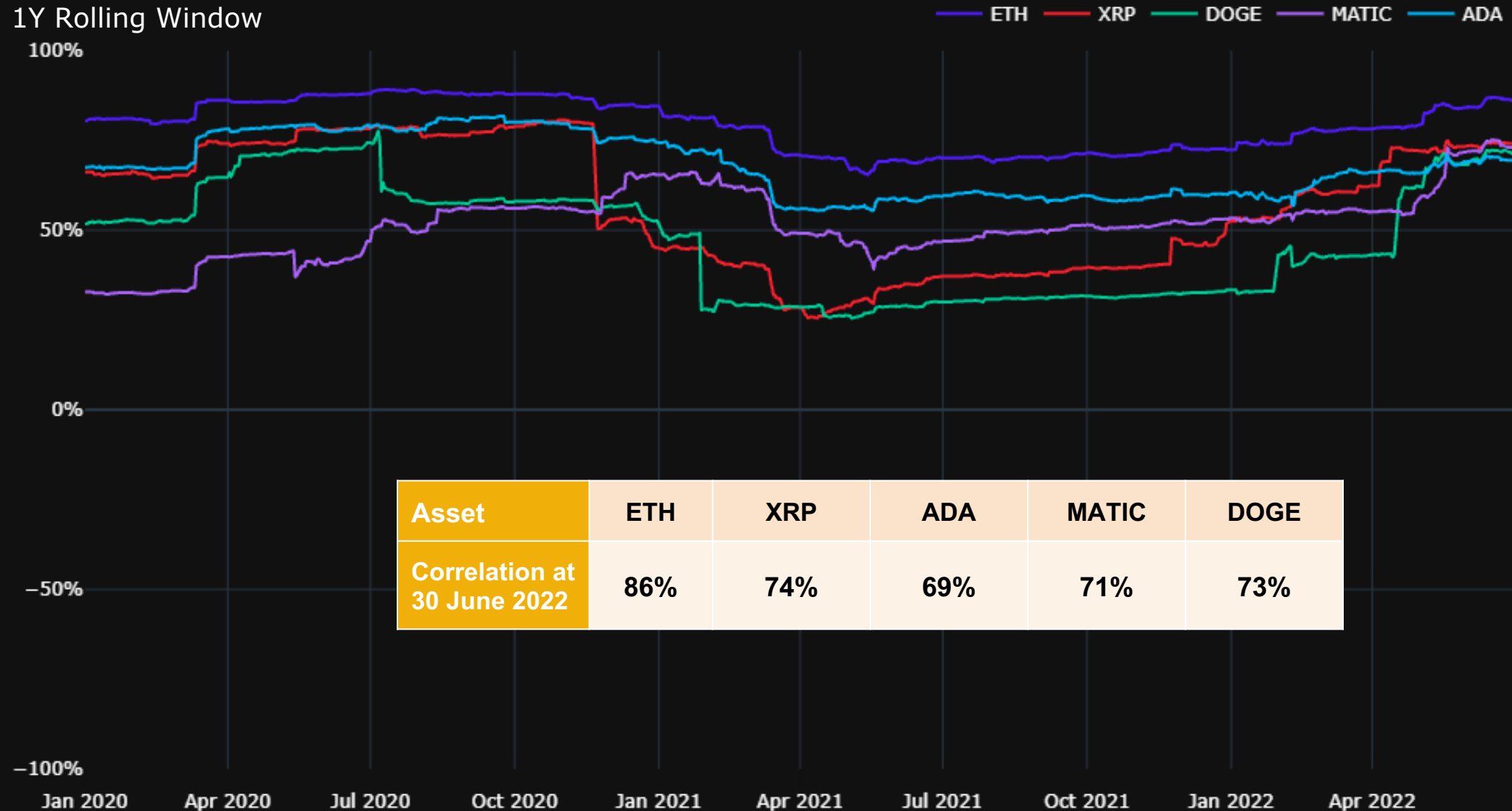
# Altcoins vs Bitcoin (3Y)



Altcoin	Performance
ETH	94.43%
XRP	-56.42%
ADA	192.82%
MATIC	1052.47%
DOGE	991.73%

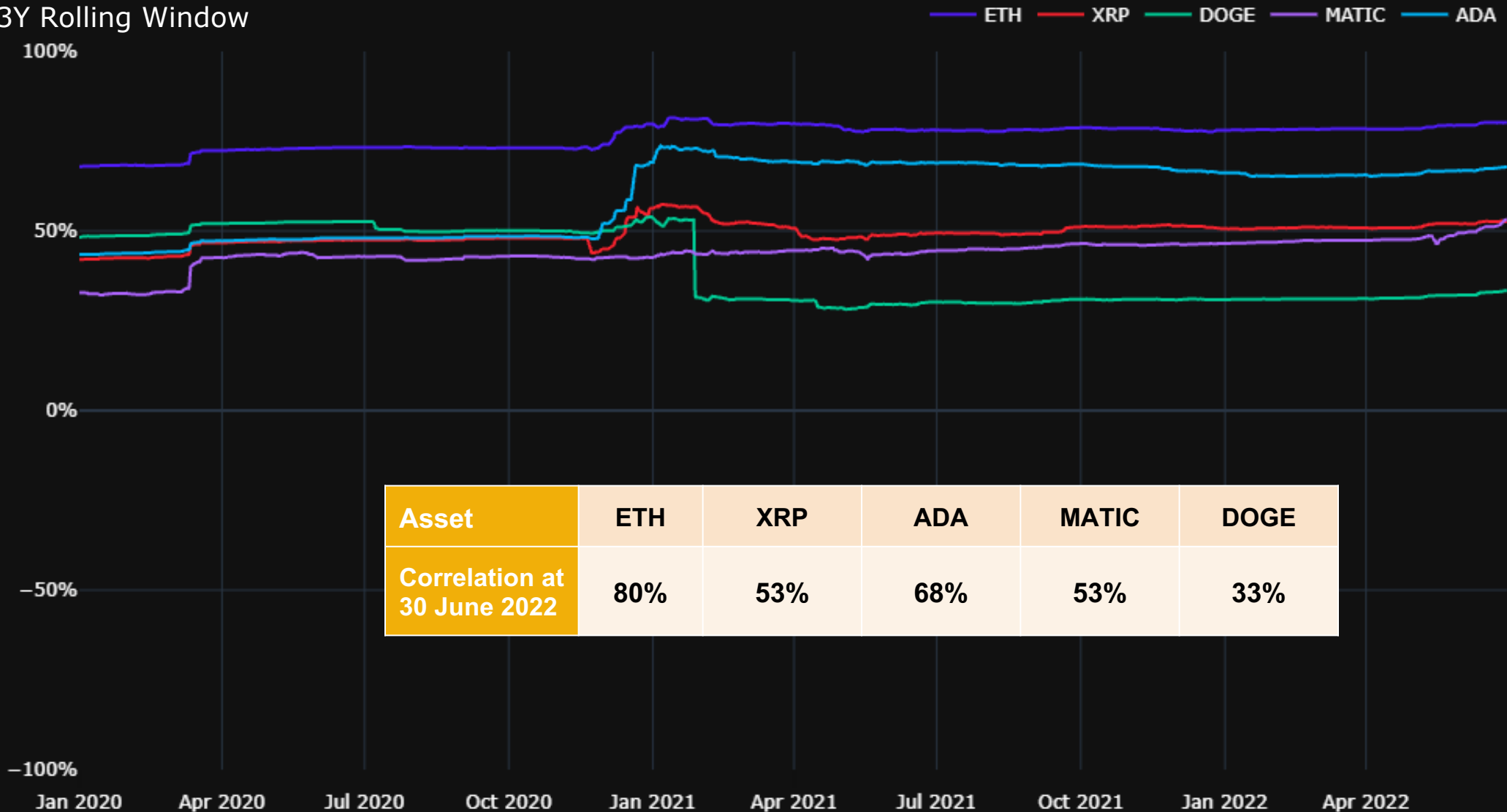
# Altcoin Correlation With Bitcoin

1Y Rolling Window



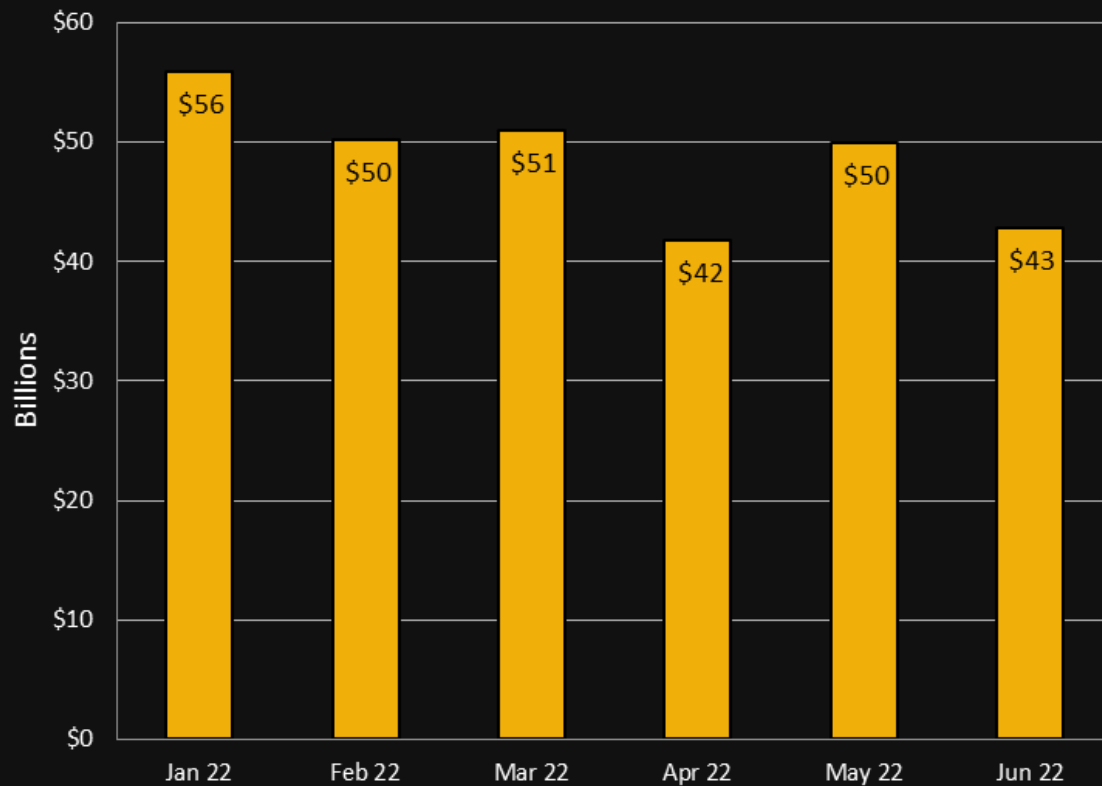
# Altcoin Correlation With Bitcoin

3Y Rolling Window

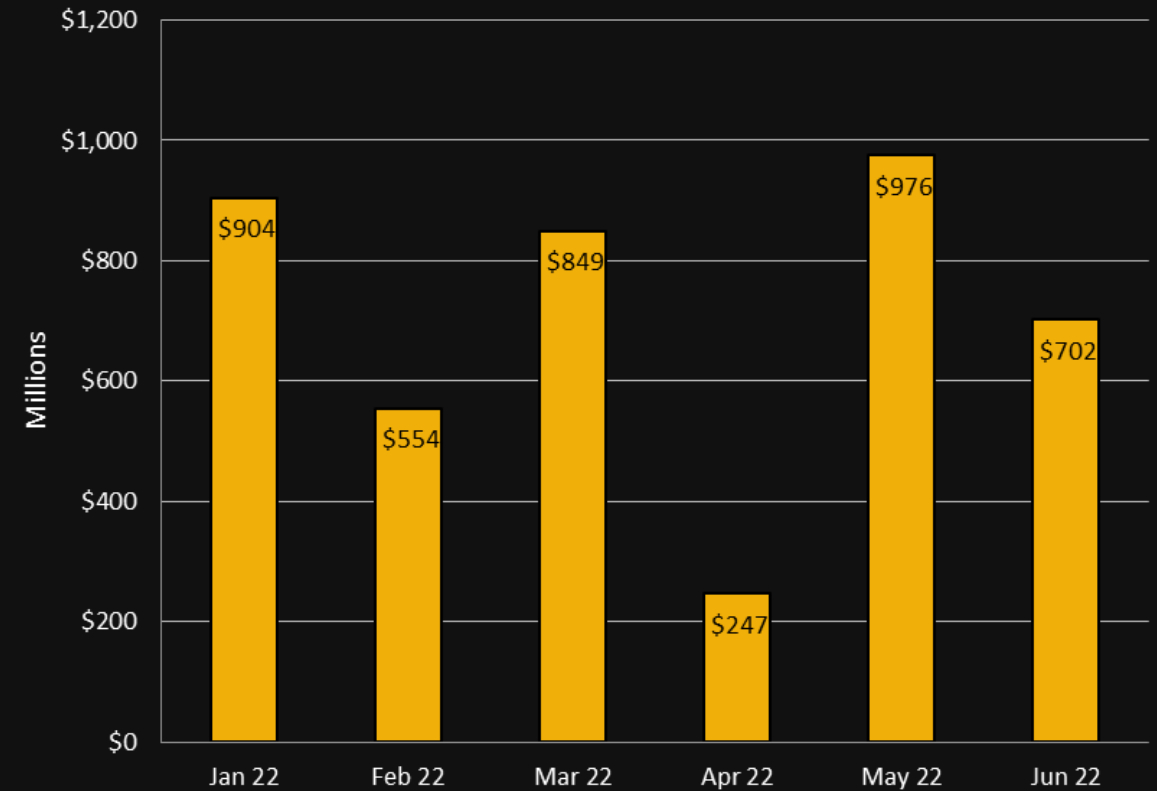


# Bitcoin Listed Derivatives

## CME Futures Volume



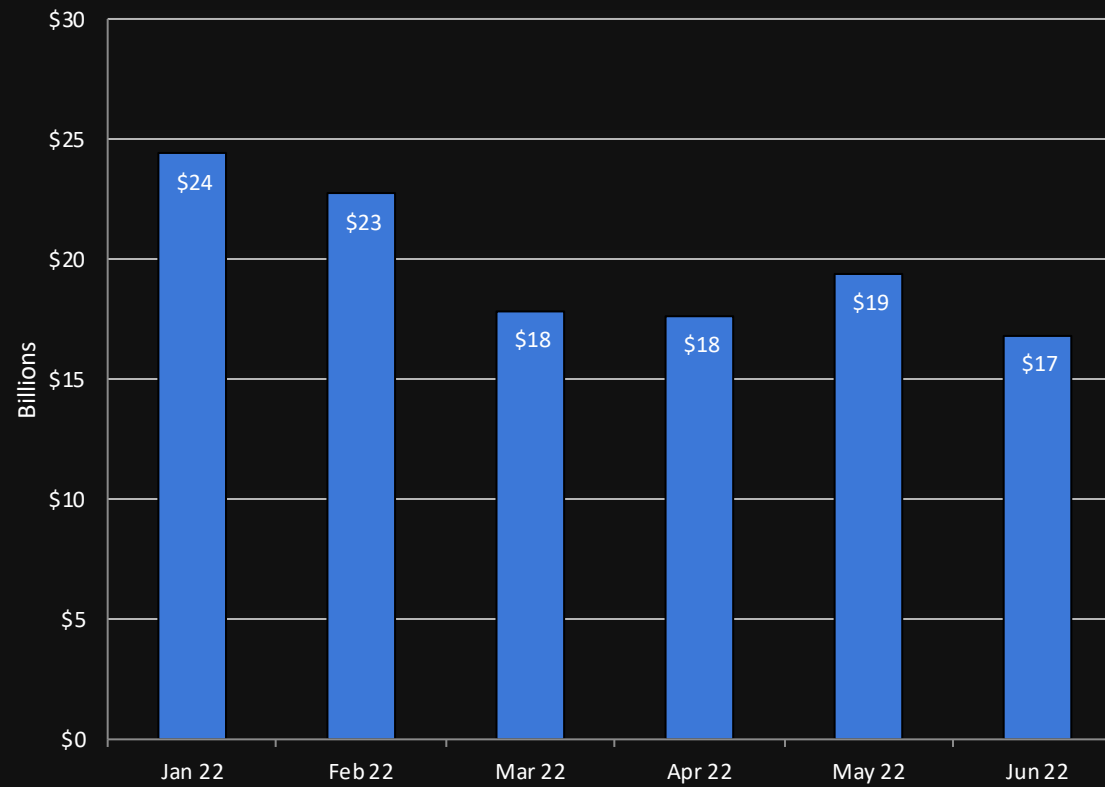
## CME Options Volume





# Ethereum Listed Derivatives

CME Futures Volume



The background is a solid mustard yellow color. It features a faint, large-scale graphic of a padlock in the center, surrounded by a network of thin white lines and small circular nodes, suggesting a digital or technological theme. The padlock is slightly tilted and has a glowing effect.

ECOSYSTEM

# The Meteoric Rise and Crash of UST & LUNA

- Underdog payments app in South Korea
  - \$60 billion crypto ecosystem
  - the biggest failures in crypto
- 
- Implausible algorithm
  - Not fully collateralized



# 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
- BlockFi, Voyager saved by Sam Bankman-Fried (FTX)



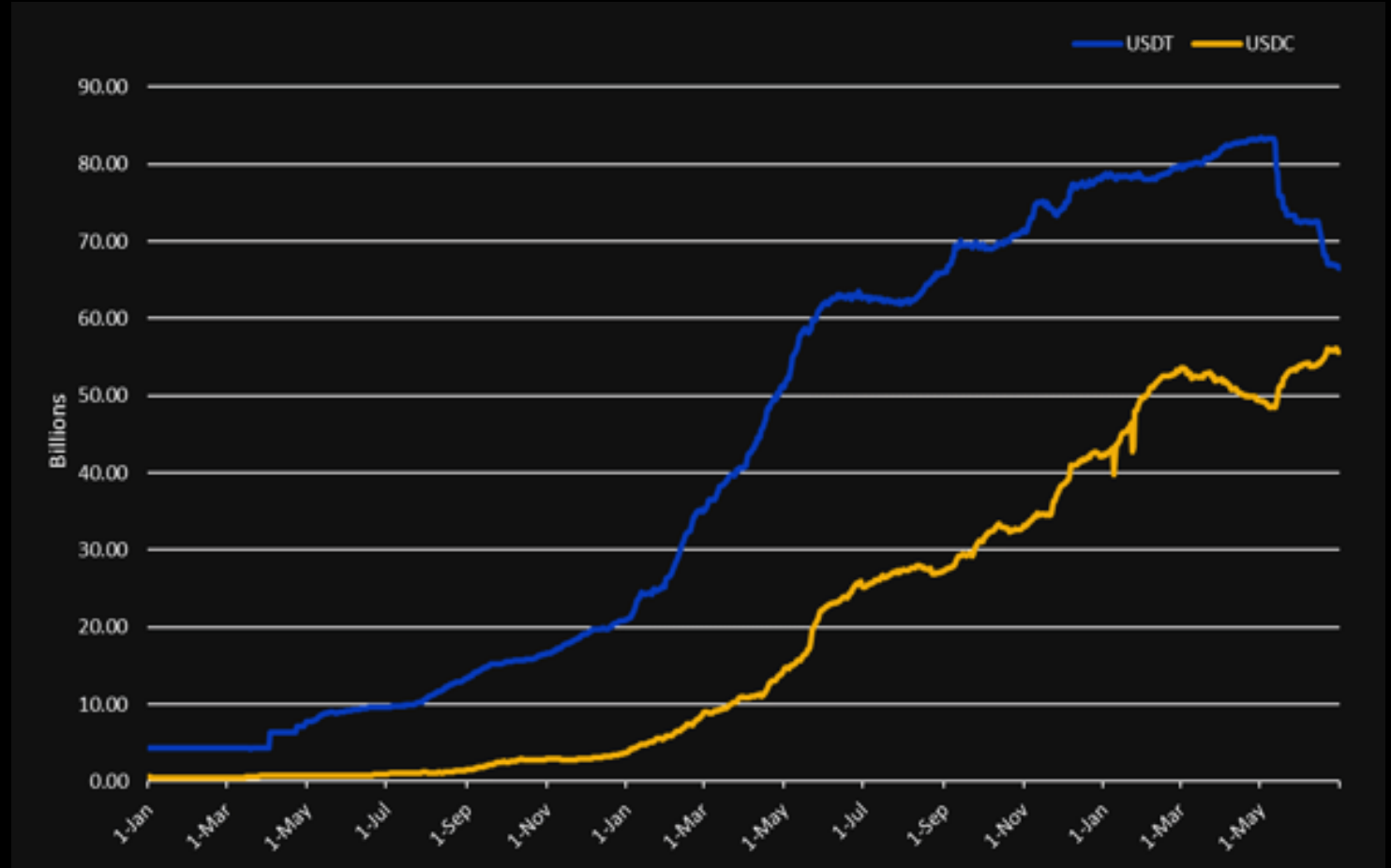


# DeFi: Technical Fragility

- Crema Finance
- Harmony
- Optimism
- Osmosis
- Deus Finance
- Axie Infinity
  
- Typo
- AkuDreams
  
- Solana

# Tether USDT / Circle USDC

- Tether has been able to redeem USDT so far
- The lack of transparency and reliability has hurt its growth, favoring USDC instead



# Intermediaries and Clients' Asset

- Coinbase: 2022Q1 earnings were bad. Worse still, the crypto exchange is now warning that bankruptcy could wipe out user funds
- Sam Bankman-Fried: Some Crypto Exchanges Are Already "Secretly Insolvent"
- Proof-of-reserves should be an industry standard

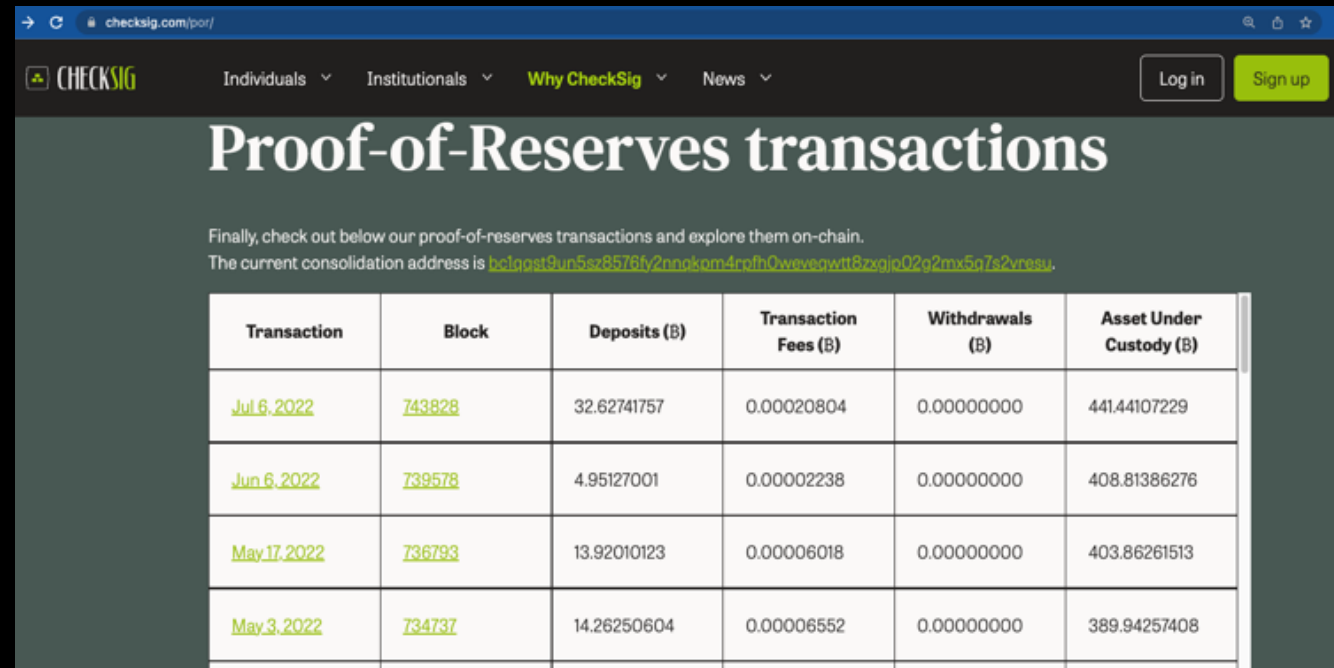


# Custodian Best Practices, e.g. CheckSig

SOC attestations



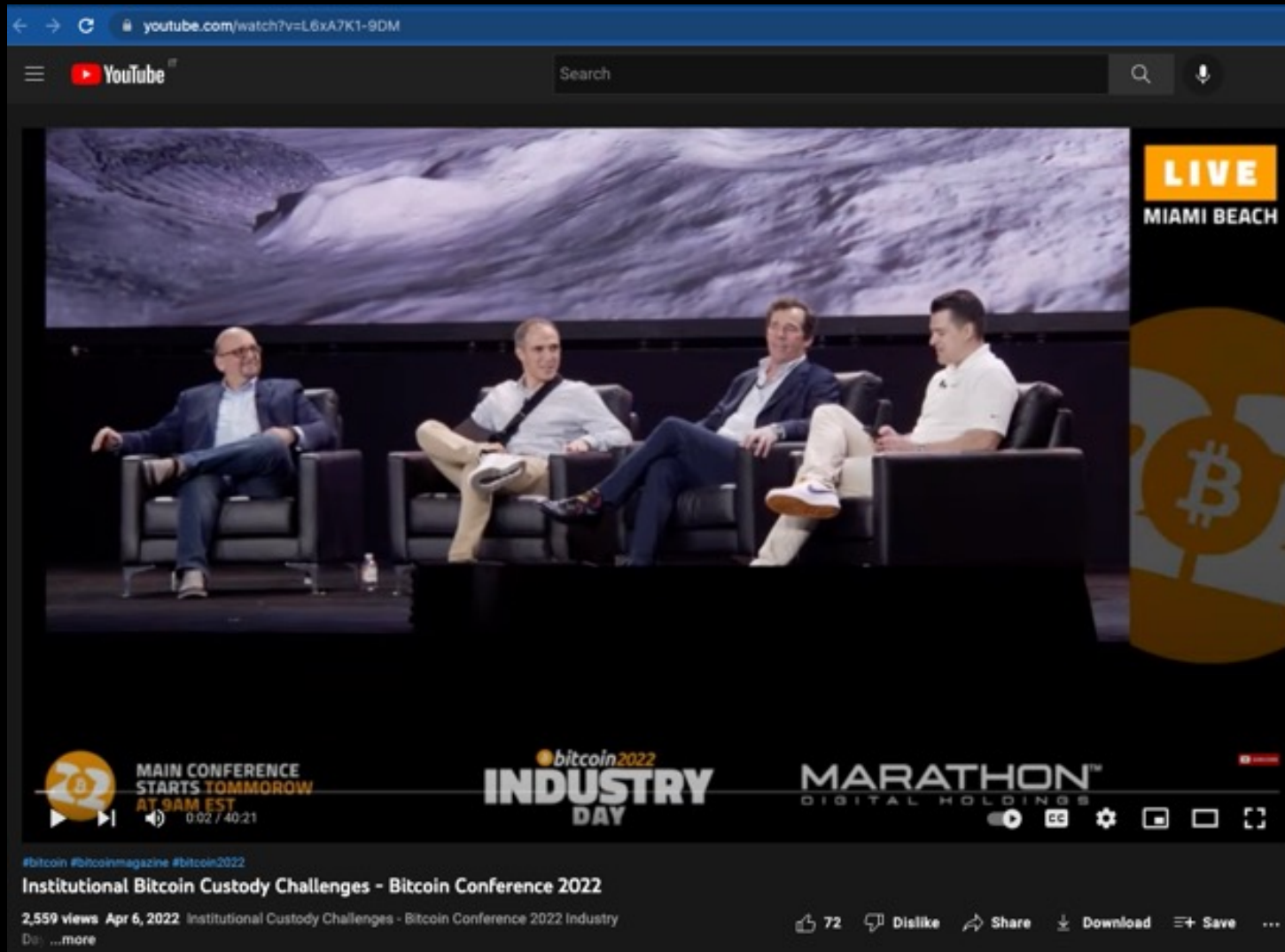
Insurance coverage

A screenshot of the CheckSig website showing a "Proof-of-Reserves transactions" page. The page includes a navigation bar with links for "Individuals", "Institutionals", "Why CheckSig", and "News". Below the navigation bar, there is a heading "Proof-of-Reserves transactions" and a paragraph explaining that the page shows proof-of-reserves transactions and provides a link to the current consolidation address. A table follows, displaying transaction details for July 6, 2022, June 6, 2022, May 17, 2022, and May 3, 2022. The table columns are Transaction, Block, Deposits (B), Transaction Fees (B), Withdrawals (B), and Asset Under Custody (B).

Transaction	Block	Deposits (B)	Transaction Fees (B)	Withdrawals (B)	Asset Under Custody (B)
<a href="#">Jul 6, 2022</a>	<a href="#">743828</a>	32.62741757	0.00020804	0.00000000	441.44107229
<a href="#">Jun 6, 2022</a>	<a href="#">739578</a>	4.95127001	0.00002238	0.00000000	408.81386276
<a href="#">May 17, 2022</a>	<a href="#">736793</a>	13.92010123	0.00006018	0.00000000	403.86261513
<a href="#">May 3, 2022</a>	<a href="#">734737</a>	14.26250604	0.00006552	0.00000000	389.94257408



# Bitcoin 2022 Miami





REGULATION

# SEC on Crypto Regulation

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

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



Gary Gensler  
Chair the U.S. Securities and Exchange

# SEC on ETF

- GrayScale Trust has the been the last one whose ETF filing has been rejected
- GrayScale has sued SEC!!



# MiCAr

- European Parliament has approved the first draft
- So much noise about sustainability as qualifying criteria





# The Italian Register of Crypto-Asset Service Providers

- OAM register of Virtual Asset Service Providers (VASP, aka CASP)
- First registration window closes on July 15



# The Travel Rule (FAFT/GAFI)

- It is being discussed in UE as part of MiCAr
- Intermediaries will be subject to it





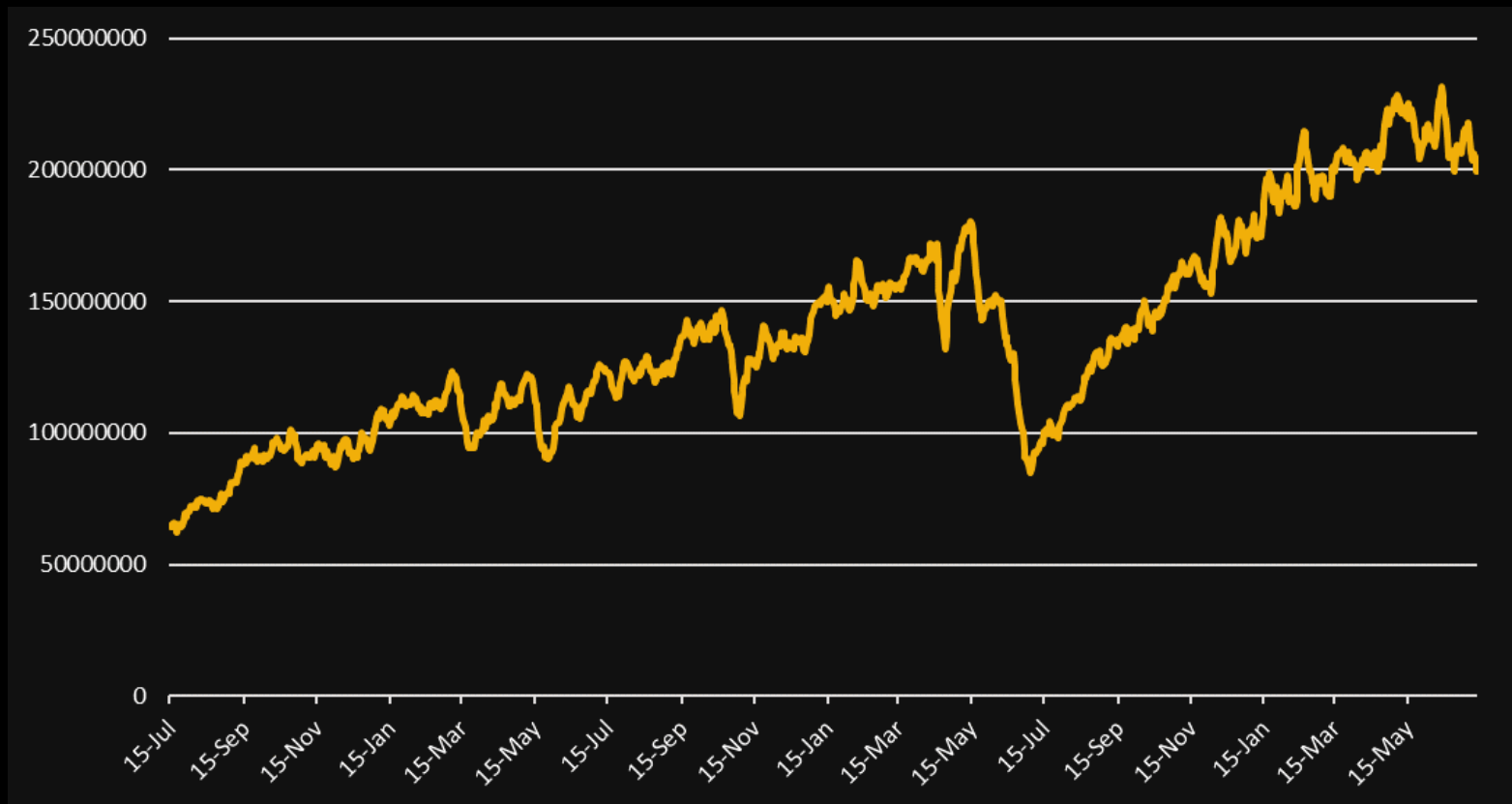
TECHNOLOGY





# Mining: New Hash Rate All-Time High

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



# Protocol Development: Bitcoin vs Ethereum



- **13 protocol** updates
- **Hard-fork**: non backward compatible
- **Roadmap** driven by Vitalik Buterin and the Ethereum Foundation
- Migration to Proof of Stake (PoS) and Ethereum 2.0 moved forward again to June 2022

- **2 protocol** updates
- **Soft-fork**: backward compatible
- **Incremental updates**, must be accepted by all actors of the ecosystem: developers, miners, users, investors, industries



# Ethereum: The Merge

- Two Ethereum testnets have switched to Merge, i.e. to proof-of-stake
- One more testnet to go
- Ethereum is expected to go Merge/PoS in August... let's wait and see



THE INSTITUTE



# CryptoWeek: Every Friday at 6PM

- The most relevant news about bitcoin, crypto-assets and blockchain commented weekly by Ferdinando M. Ametrano
- Live streaming:
  - YouTube
  - Facebook
  - LinkedIn
  - Twitter
- Also available as podcast
- [www.checksig.com/it/cryptoweek](http://www.checksig.com/it/cryptoweek)
- [www.dgi.io/cryptoweek](http://www.dgi.io/cryptoweek)



By

 **CHECKSIG**  
Your Coins, **Safe and Easy.**

The background is a solid mustard yellow color. Overlaid on this is a faint, complex graphic. It features a large, stylized padlock in the center, surrounded by a network of thin white lines connecting various points. There are also some glowing yellow dots scattered throughout the network. The overall aesthetic is technical and digital.

INVITED SPEAKER

# Guest Speaker



**Andrea Cilio**

***Responsabile Marketing e Sviluppo  
Commerciale, Banca Profilo e Tinaba***

*"Come le banche e le fintech possono stare al  
passo con l'innovazione"*





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