



**January 17**  
**2023**



2022

Q4

# 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

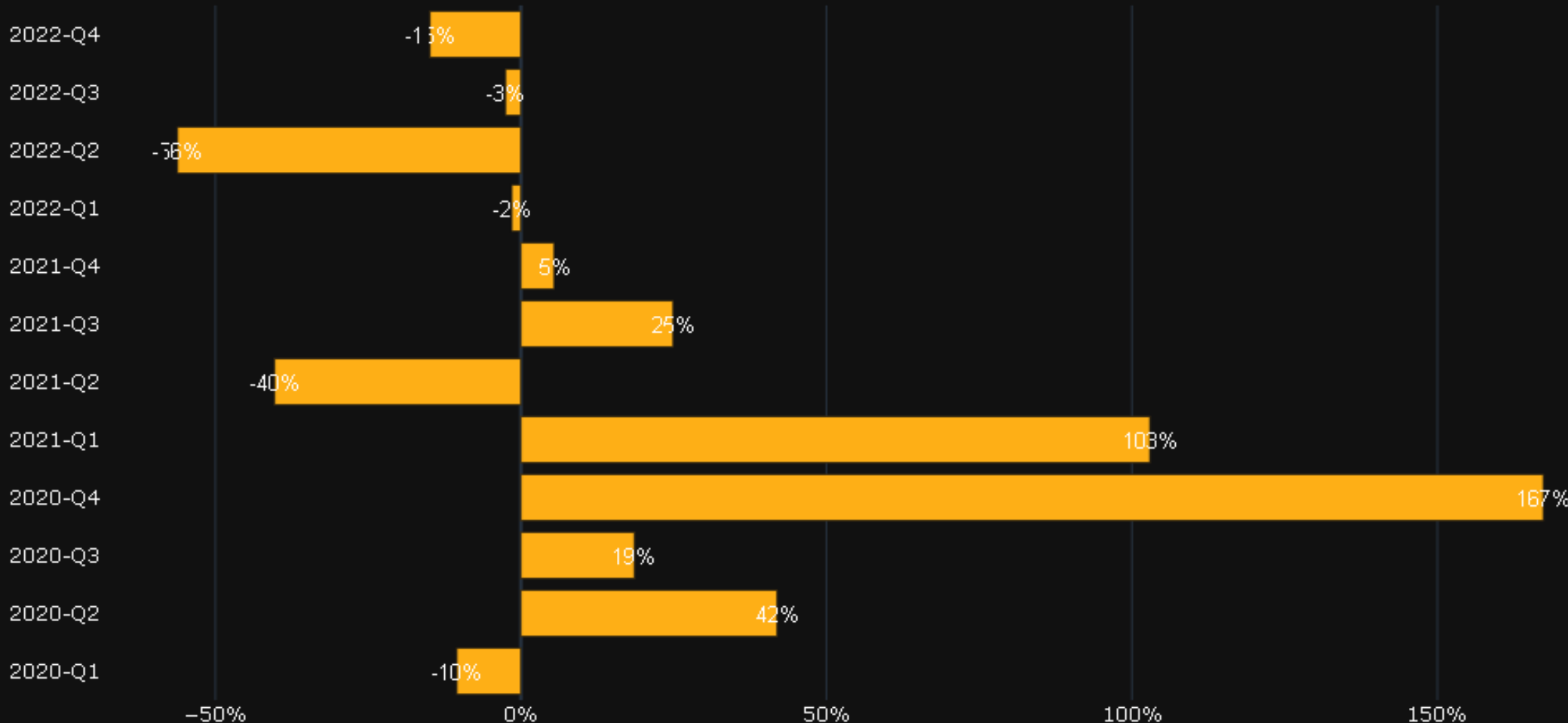


# Bitcoin Performance 2022Q4 -15%



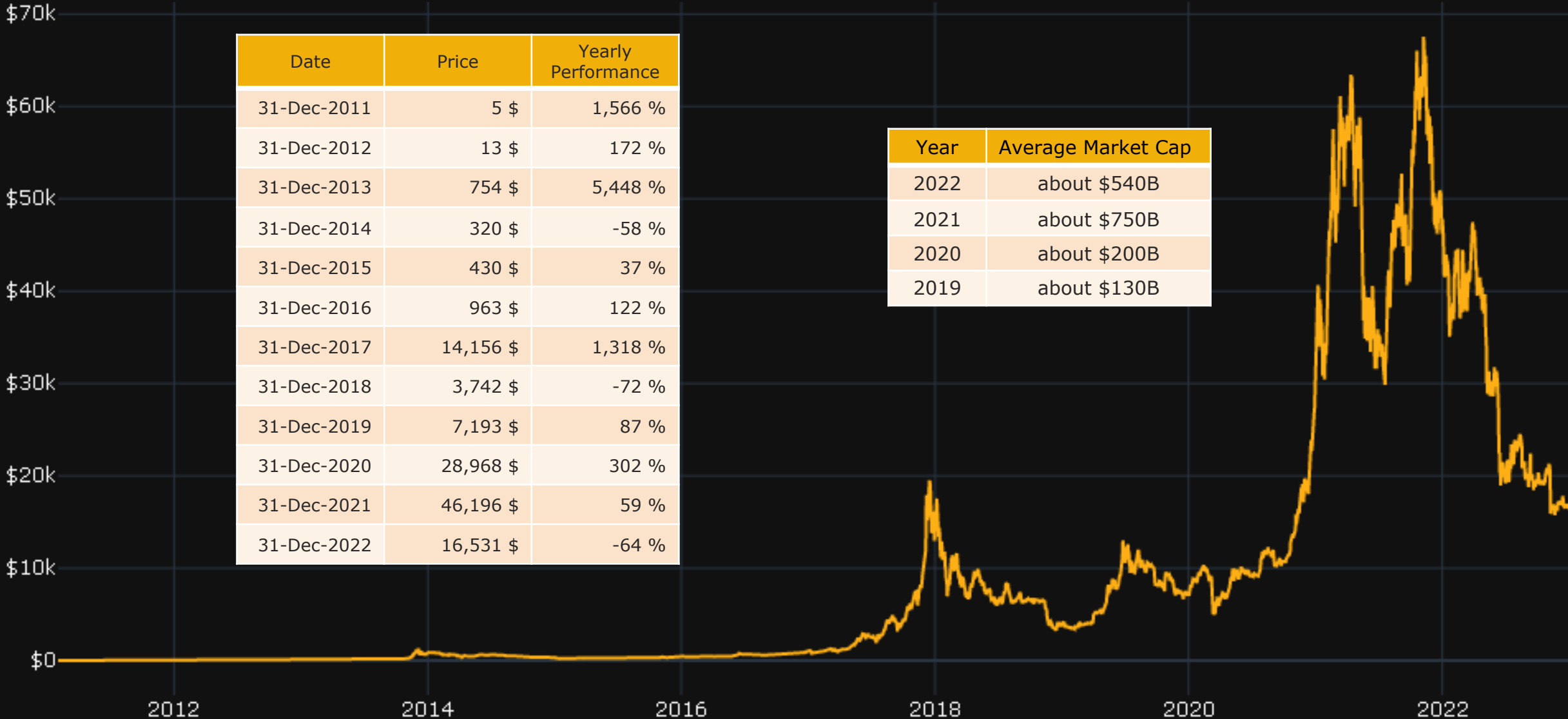


# Bitcoin Quarterly Performances



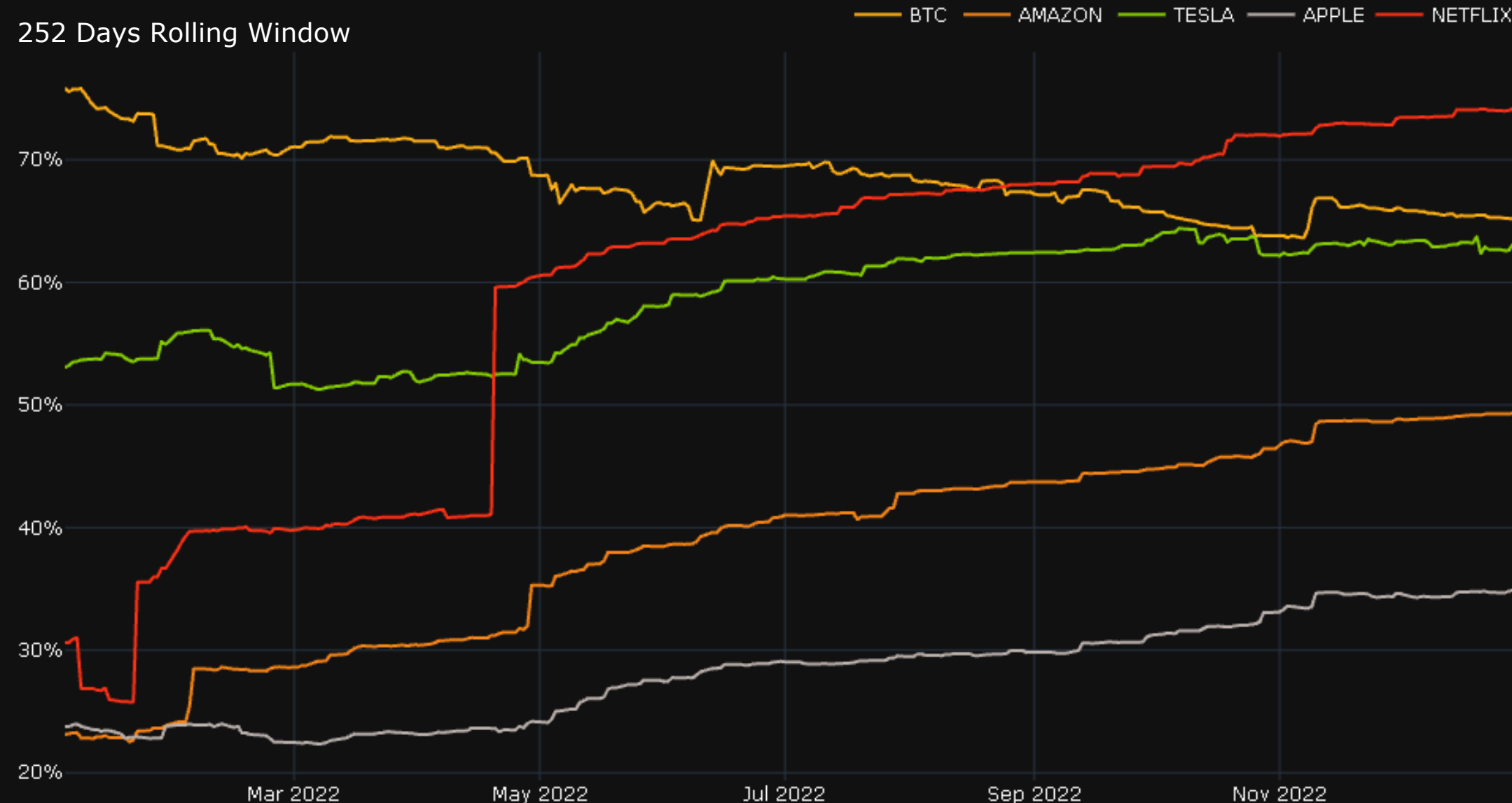


# Bitcoin Yearly Performances





# Volatility of Best Performing Assets





# Asset Class Correlation Matrix

1Y

Corr = 100%

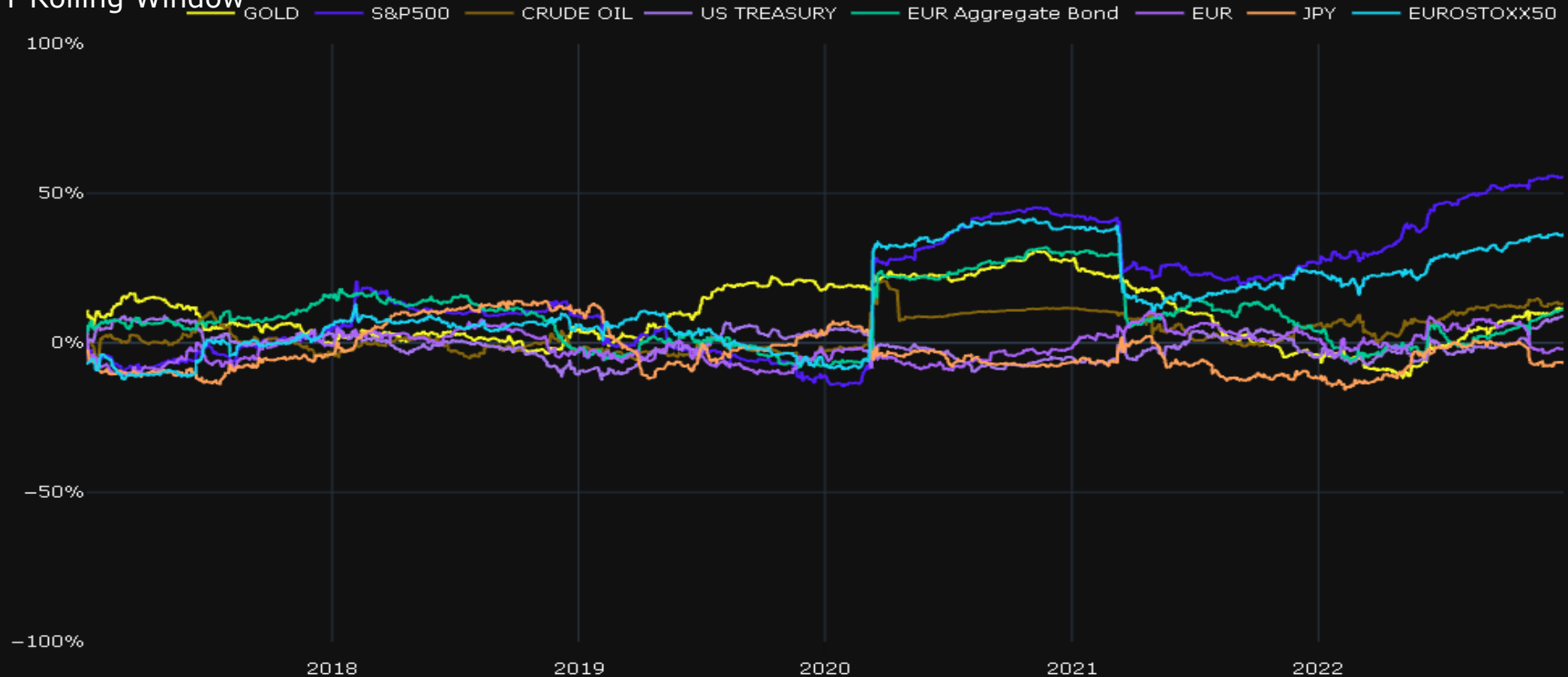
Corr = -100%

BTC	100.00%															
GOLD	11.47%	100.00%														
COPPER	16.61%	48.24%	100.00%													
CRUDE OIL	12.74%	34.19%	42.18%	100.00%												
CORN	2.60%	25.20%	19.40%	34.65%	100.00%											
EUR	-2.45%	4.93%	9.31%	-4.76%	5.16%	100.00%										
GBP	-8.28%	8.48%	10.14%	2.46%	6.97%	76.70%	100.00%									
JPY	-6.63%	1.60%	8.54%	7.36%	2.96%	41.73%	47.11%	100.00%								
CHF	-4.79%	11.60%	9.53%	1.56%	3.94%	71.52%	60.72%	53.09%	100.00%							
NASDAQ	58.22%	9.30%	19.74%	4.02%	-8.70%	-4.76%	-5.25%	-1.34%	-6.85%	100.00%						
S&P500	55.46%	12.40%	23.61%	8.07%	-8.94%	-4.78%	-3.45%	-2.02%	-8.78%	96.82%	100.00%					
EUROSTOXX50	36.01%	5.79%	27.81%	-0.65%	-16.82%	-3.55%	3.11%	-3.16%	-12.13%	50.32%	54.78%	100.00%				
VIX	-49.43%	-7.18%	-24.37%	-6.23%	6.39%	0.65%	1.76%	2.54%	9.76%	-74.78%	-76.71%	-44.36%	100.00%			
US TREASURY	8.99%	31.17%	3.55%	-8.63%	-2.79%	4.08%	4.26%	-5.49%	8.67%	12.34%	12.23%	1.23%	-9.39%	100.00%		
PAN EUR	11.30%	29.34%	1.71%	-8.92%	2.14%	7.21%	6.93%	2.54%	8.78%	21.84%	23.26%	14.52%	-15.00%	67.84%	100.00%	
	BTC	GOLD	COPPER	CRUDE OIL	CORN	EUR	GBP	JPY	CHF	NASDAQ	S&P500	EUROSTOXX50	VIX	US TREASURY	PAN EUR	
	Crypto	Commodity				Currency				Equity			Volatility	Bond		

Asset	Gold	Copper	Crude Oil	Corn	EUR	GBP	JPY	CHF	NASDAQ	S&P 500	EURSTOXX	VIX	US Treasury	PAN EUR
Correlation at 31 Dec 2022	11.47%	16.61%	12.74%	2.60%	-2.45%	-8.28%	-6.63%	-4.79%	58.28%	55.46%	36.01%	-49.43%	8.99%	11.3%

# 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 31 Dec 2022	11.47%	16.61%	12.74%	2.60%	-2.45%	-8.28%	-6.63%	-4.79%	58.28%	55.46%	36.01%	-49.43%	8.99%	11.3%

# Asset Class Correlation Matrix

3Y

Corr = 100%

Corr = -100%

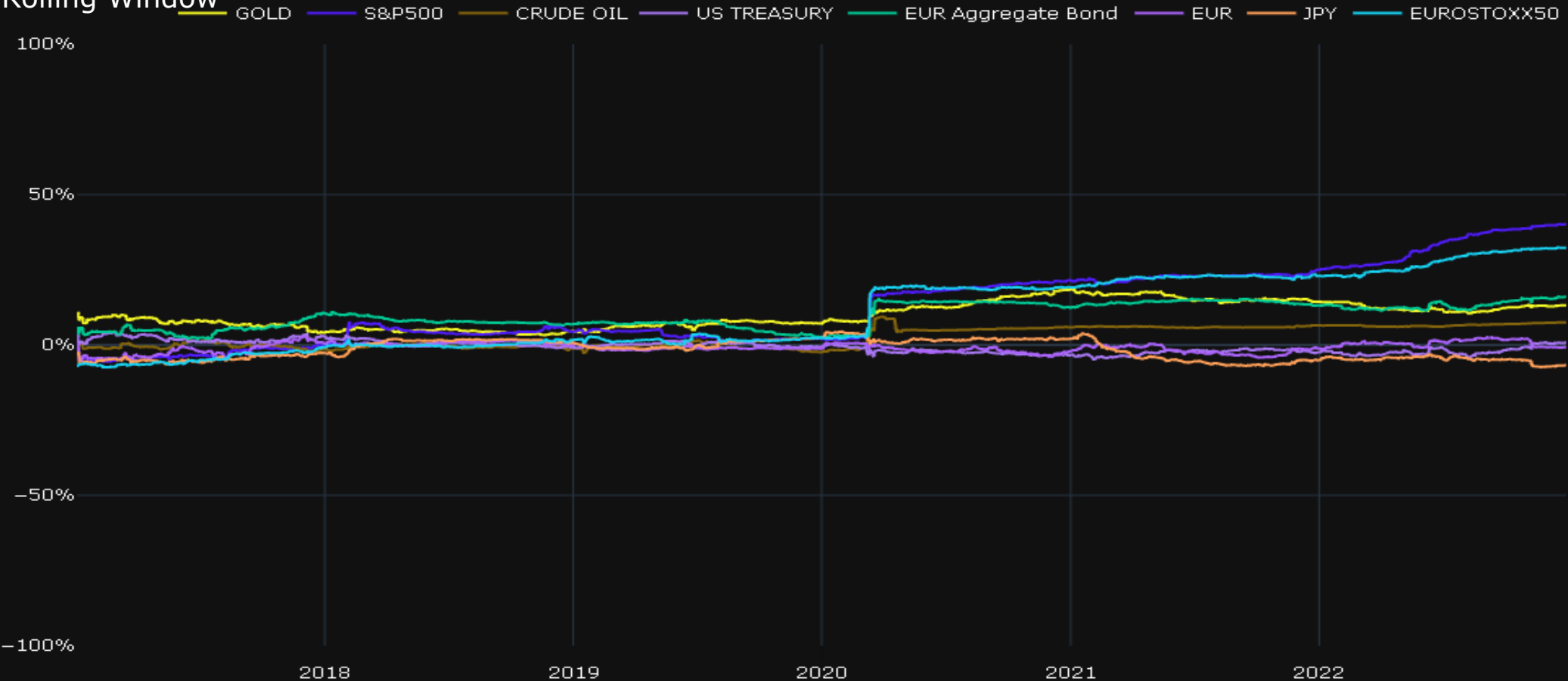
BTC	100.00%															
GOLD	13.11%	100.00%														
COPPER	18.90%	27.06%	100.00%													
CRUDE OIL	7.49%	4.55%	13.15%	100.00%												
CORN	8.85%	12.78%	18.97%	12.83%	100.00%											
EUR	-0.83%	7.07%	7.05%	-1.67%	1.66%	100.00%										
GBP	-7.80%	4.75%	4.86%	-0.89%	-0.14%	67.96%	100.00%									
JPY	-6.73%	2.77%	5.92%	-1.65%	-2.35%	45.68%	42.20%	100.00%								
CHF	-2.67%	10.35%	6.33%	-2.35%	-1.00%	77.16%	55.13%	54.99%	100.00%							
NASDAQ	43.29%	15.14%	24.43%	10.78%	3.84%	-0.79%	-4.95%	3.48%	-3.56%	100.00%						
S&P500	40.03%	14.37%	28.10%	13.67%	5.30%	0.68%	-2.96%	2.97%	-4.05%	94.75%	100.00%					
EUROSTOXX50	32.24%	10.38%	29.38%	8.67%	1.39%	-4.99%	-1.66%	-12.03%	-11.29%	54.08%	62.11%	100.00%				
VIX	-35.68%	-6.30%	-27.10%	-12.65%	-4.82%	5.13%	4.31%	2.73%	8.68%	-69.45%	-70.22%	-47.28%	100.00%			
US TREASURY	0.81%	22.59%	-7.85%	-7.38%	-6.85%	4.09%	3.44%	0.32%	7.75%	-9.32%	-17.17%	-17.86%	14.08%	100.00%		
PAN EUR	15.86%	23.85%	3.54%	2.33%	5.49%	7.41%	1.27%	5.39%	6.96%	23.96%	22.73%	16.10%	-10.57%	53.61%	100.00%	
	BTC	GOLD	COPPER	CRUDE OIL	CORN	EUR	GBP	JPY	CHF	NASDAQ	S&P500	EUROSTOXX50	VIX	US TREASURY	PAN EUR	
	Crypto	Commodity				Currency				Equity			Volatility	Bond		

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Correlation at 31 Dec 2022	13.11%	18.90%	7.49%	8.85%	-0.83%	-7.80%	-6.73%	-2.67%	43.29%	40.03%	32.24%	-35.68%	0.81%	15.86%



# Asset Class Correlation With Bitcoin

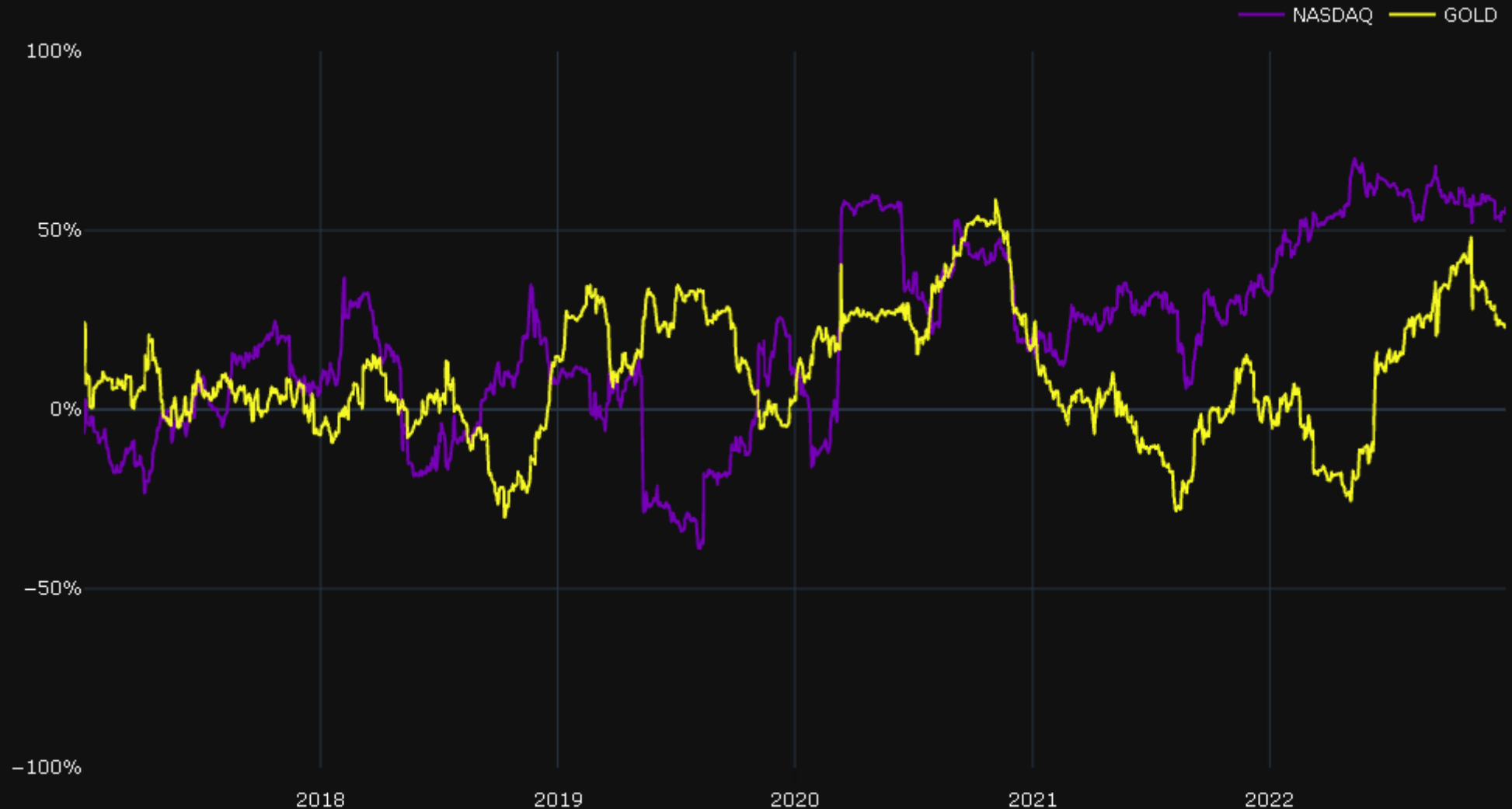
3Y Rolling Window



Asset	Gold	Copper	Crude Oil	Corn	EUR	GBP	JPY	CHF	NASDAQ	S&P 500	EURSTOXX	VIX	US Treasury	PAN EUR
Correlation at 31 Dec 2022	13.11%	18.90%	7.49%	8.85%	-0.83%	-7.80%	-6.73%	-2.67%	43.29%	40.03%	32.24%	-35.68%	0.81%	15.86%

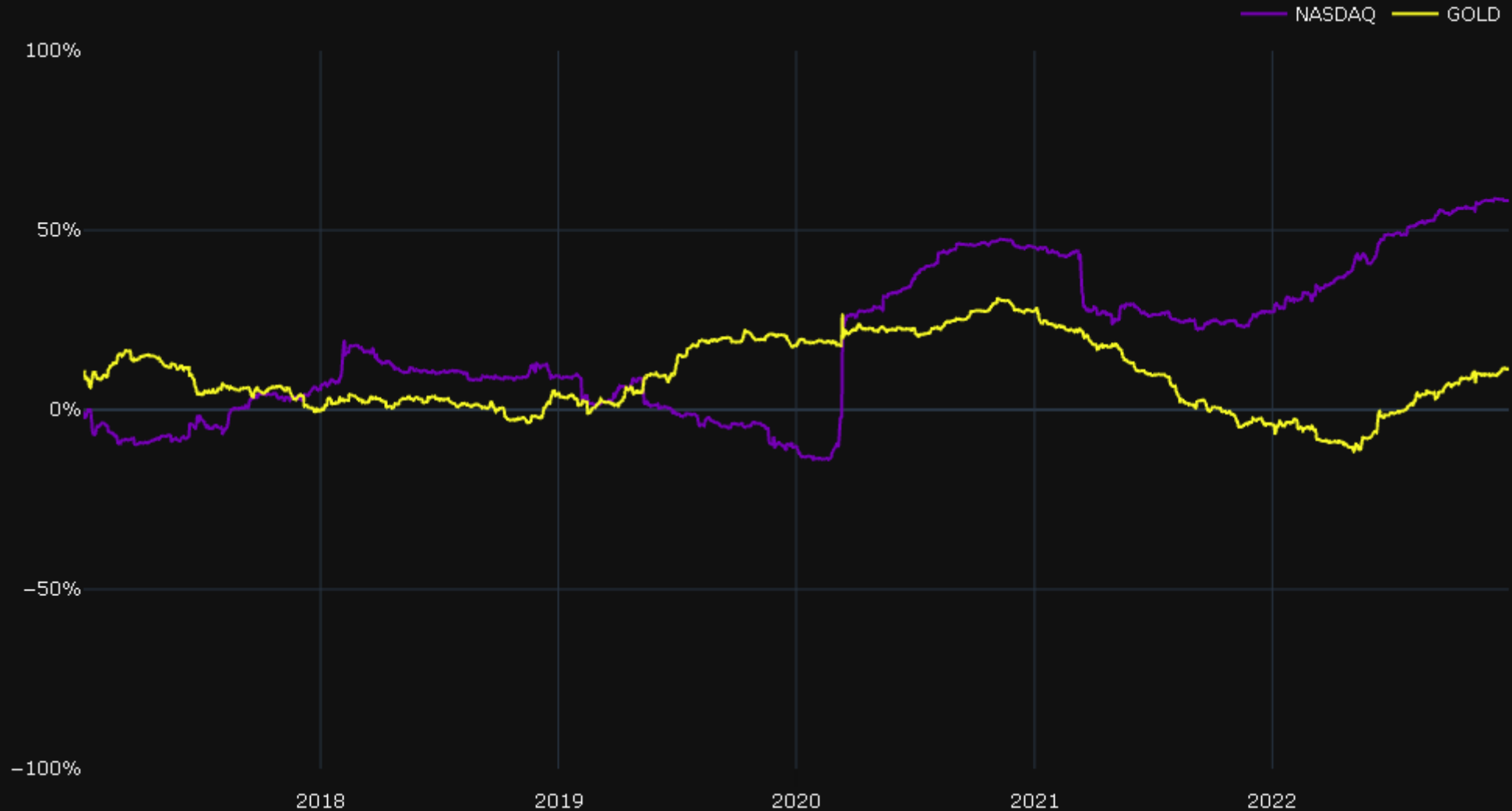
# Asset Class Correlation With Bitcoin

1Q Rolling Window



# Asset Class Correlation With Bitcoin

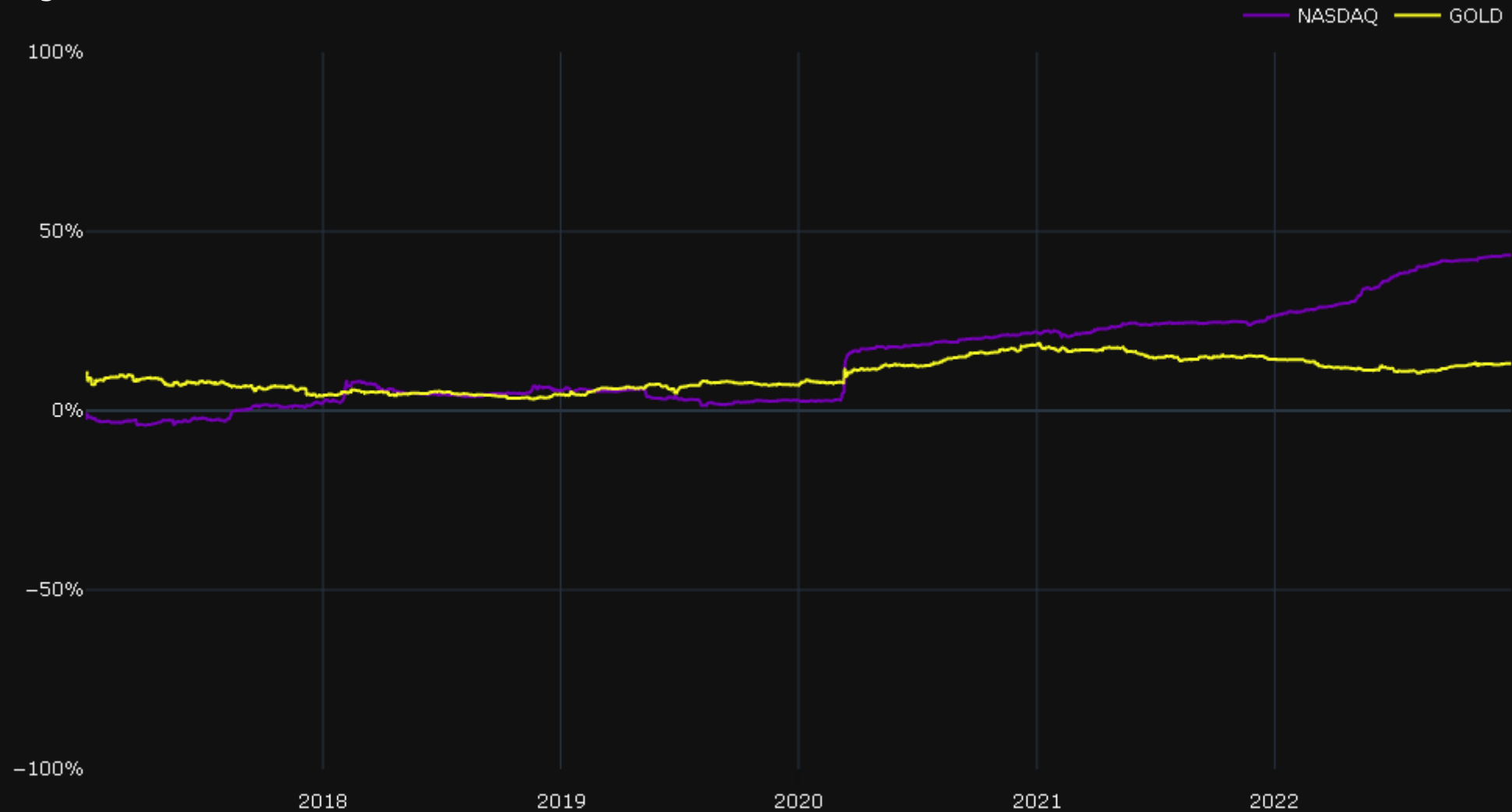
1Y Rolling Window



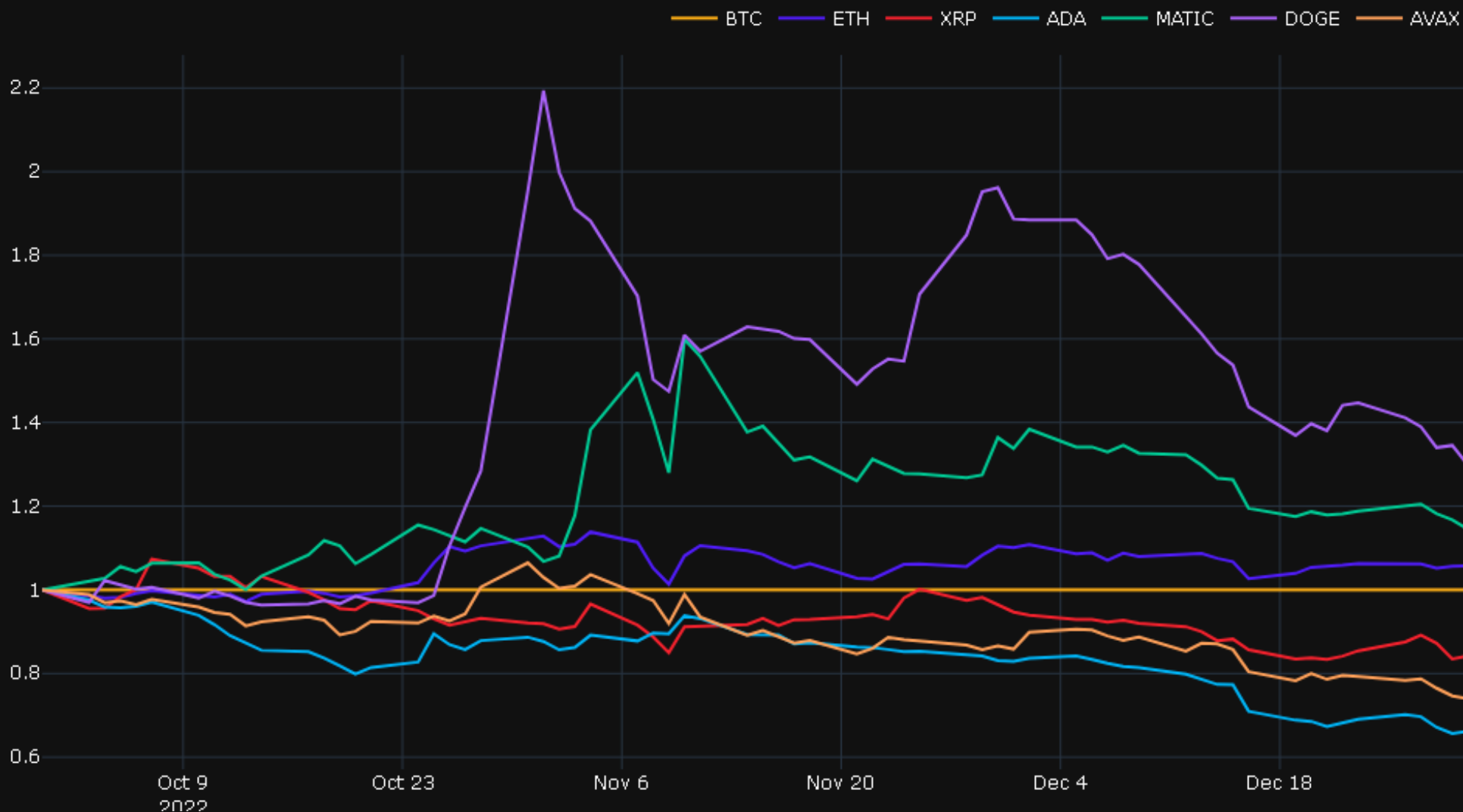


# Asset Class Correlation With Bitcoin

3Y Rolling Window



# Altcoins vs Bitcoin (2022 Q4)



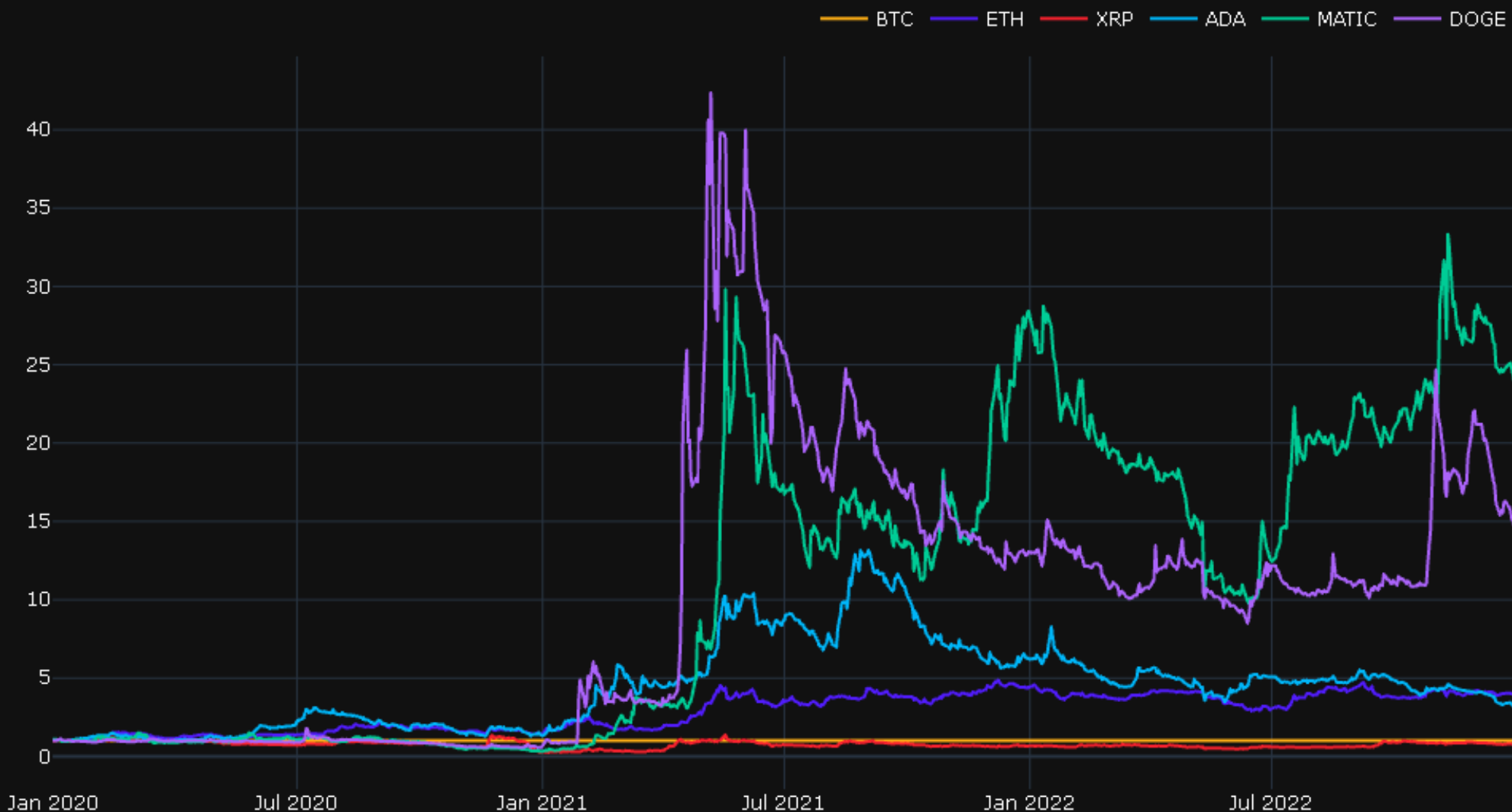
Altcoin	Performance
DOGE	29.86%
MATIC	14.49%
ETH	5.69%
XRP	-15.83%
AVAX	-26.01%
ADA	-33.84%

# Altcoins vs Bitcoin (1Y)



Altcoin	Performance
DOGE	11.90%
XRP	15.78%
MATIC	-6.06%
ETH	-9.17%
ADA	-47.73%
AVAX	-72.25%

# Altcoins vs Bitcoin (3Y)

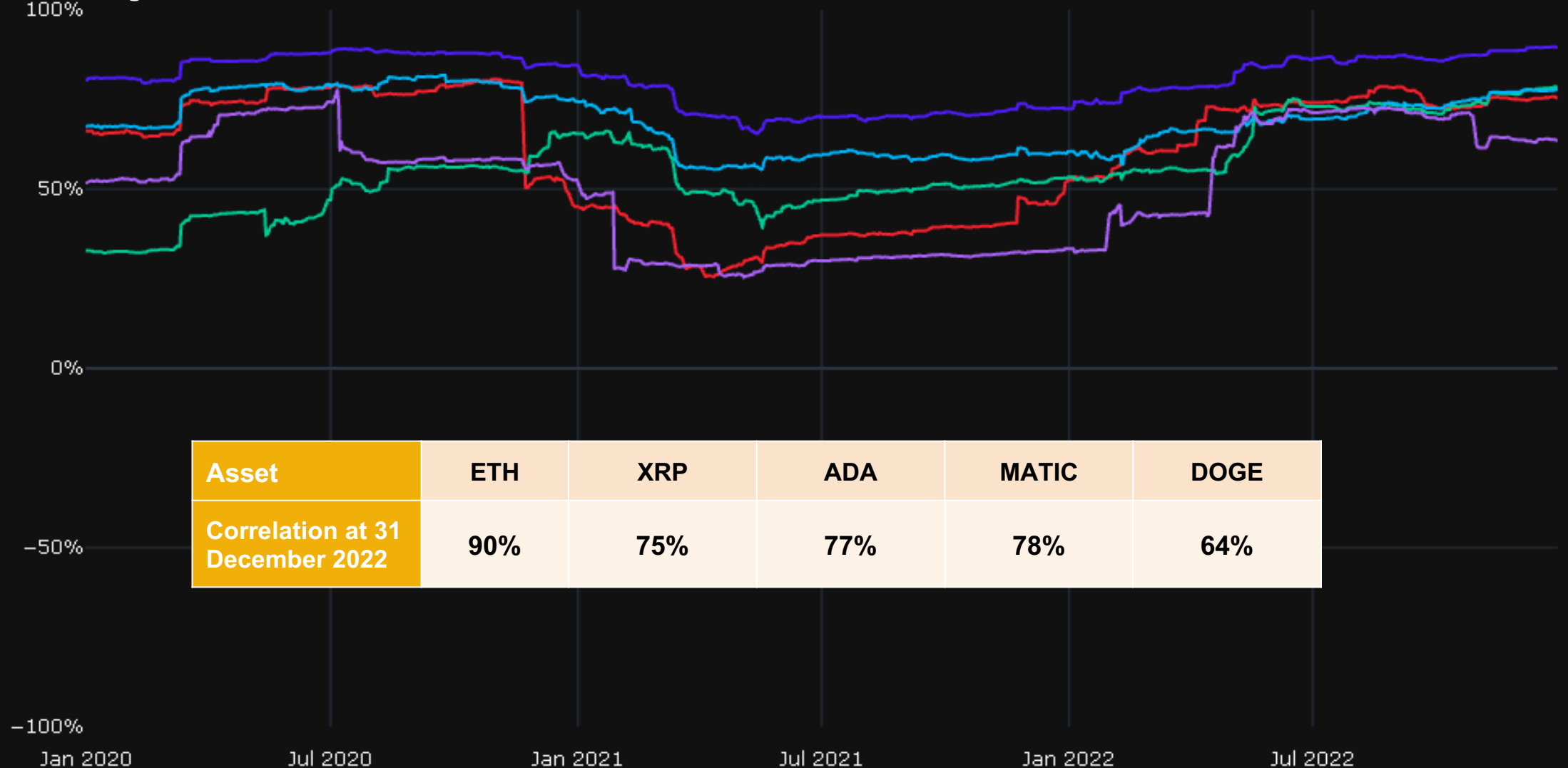


Altcoin	Performance
MATIC	2286.65%
DOGE	1361.45%
ETH	300.90%
ADA	223.93%
XRP	-22.50%

# Altcoin Correlation With Bitcoin

1Y Rolling Window  
100%

ETH XRP MATIC ADA DOGE



# Altcoin Correlation With Bitcoin

3Y Rolling Window

100%

— ETH — XRP — MATIC — ADA — DOGE

50%

0%

-50%

-100%

Jan 2020

Jul 2020

Jan 2021

Jul 2021

Jan 2022

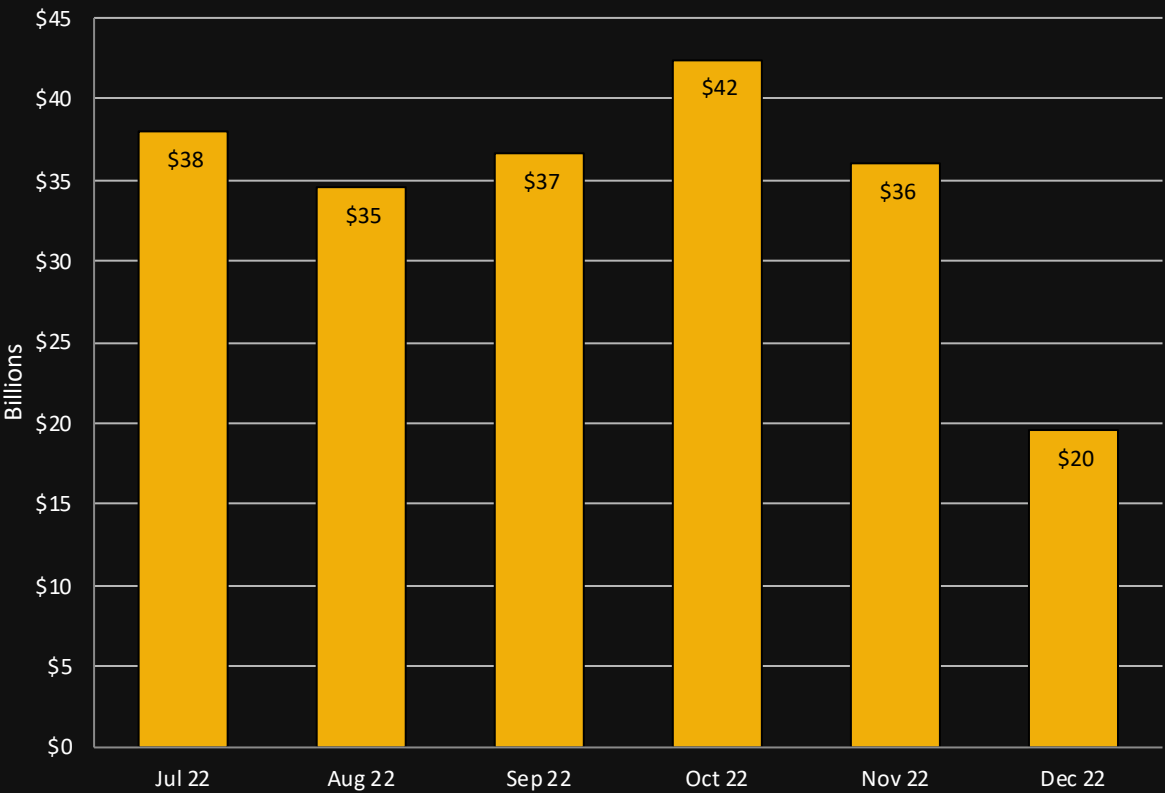
Jul 2022

Asset	ETH	XRP	ADA	MATIC	DOGE
Correlation at 31 December 2022	81%	54%	69%	61%	34%

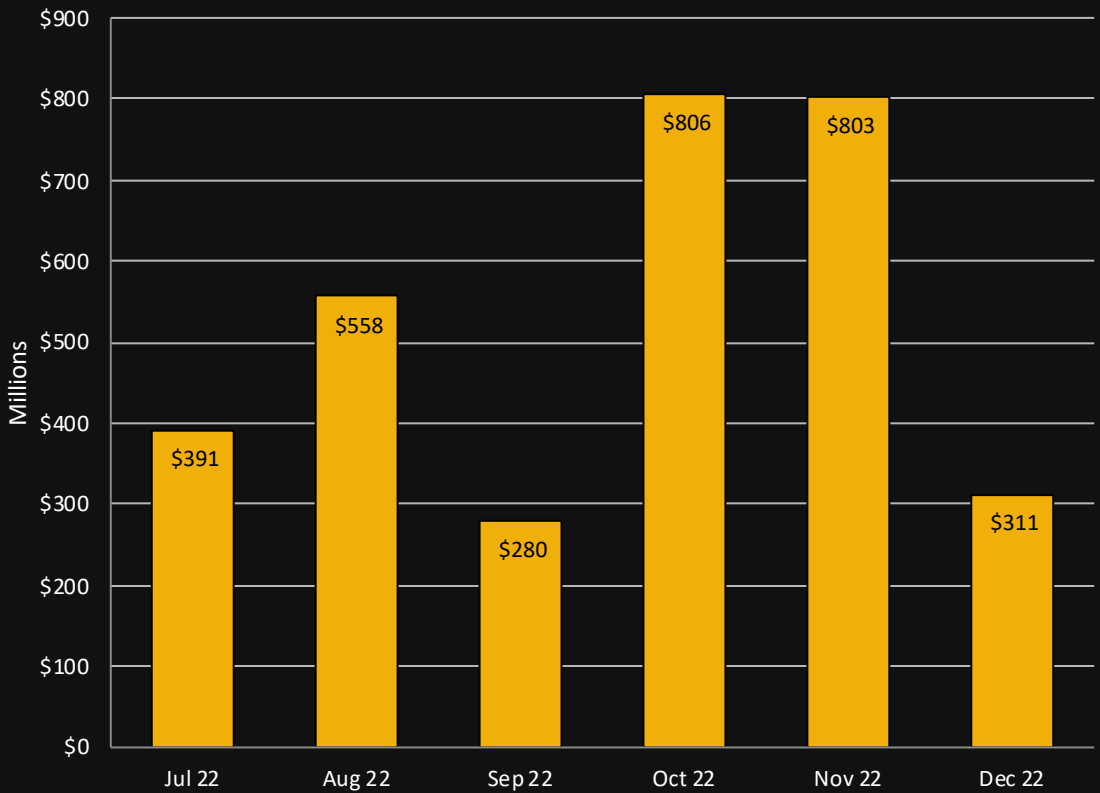


# Bitcoin Listed Derivatives

CME Futures Volume

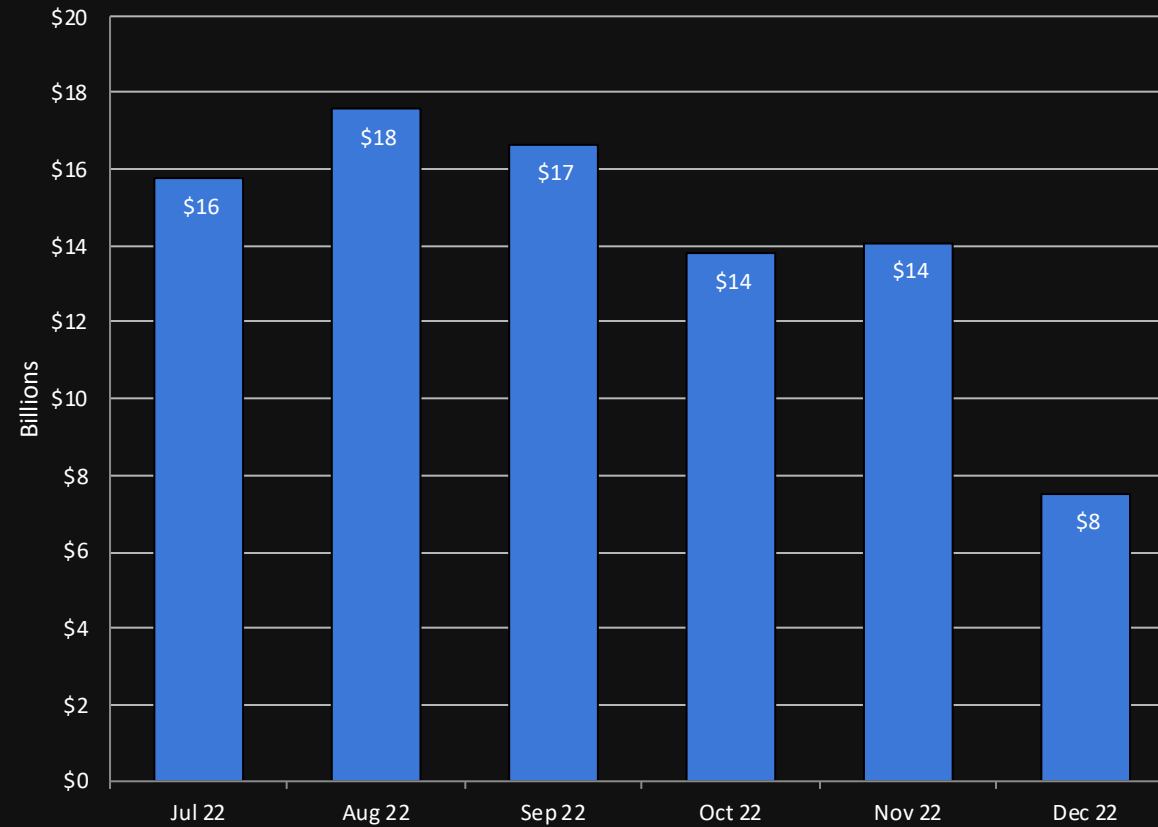


CME Options Volume



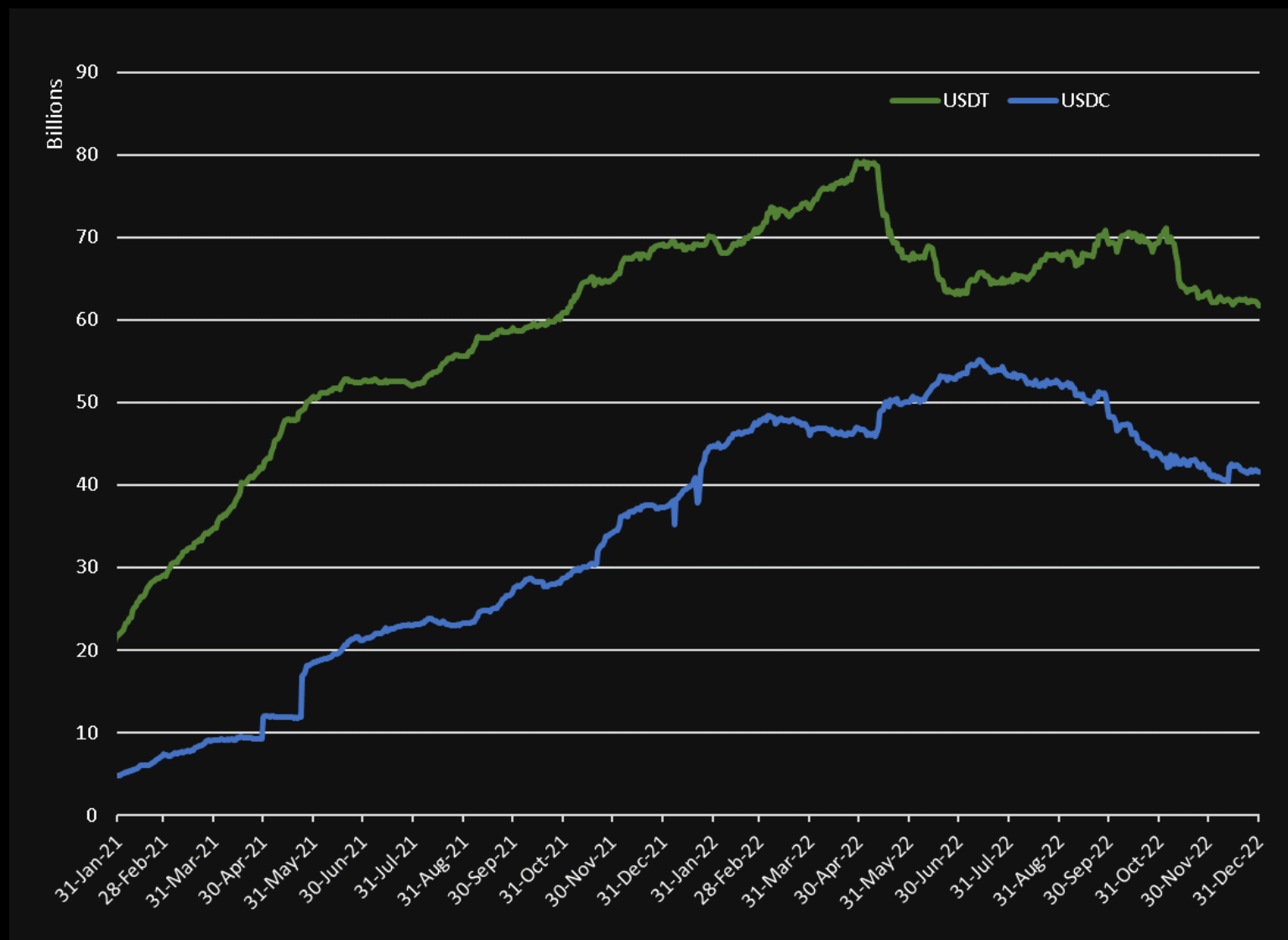
# Ether Listed Derivatives

CME Futures Volume





# Tether USDT / Circle USDC



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 dots, suggesting a digital or technological theme. The padlock is slightly tilted and has a glowing effect.

ECOSYSTEM

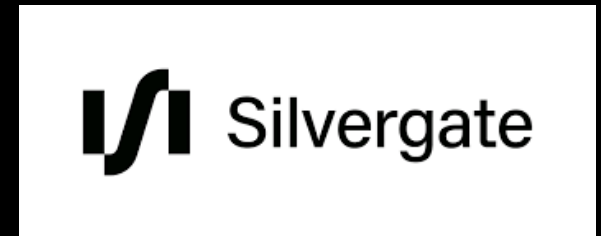
# Sam Bankman-Fried: FTX, Alameda

- 'FTX Has Been Hacked': Crypto Disaster Worsens as Exchange Sees Mysterious Outflows Exceeding \$600M - [CoinDesk](#)
- Alameda's Caroline Ellison, FTX's Gary Wang Plead Guilty to DOJ 'Fraud' Charges, Also Settle With SEC, CFTC - [CoinDesk](#)
- How Caroline Ellison Landed at the Center of the FTX Crypto Collapse - [WSJ](#)
- Solana Tokens Continue Steep Slide While Major Cryptos Stay Flat - [CoinDesk](#)



# CryptoWinter

- Crypto exchange Huobi says it will cut staff by 20% - [The Block](#)
- Kraken Cuts 30% of Workforce Amid Crypto Winter - [CoinDesk](#)
- Silvergate Tumbles After FTX Implosion Prompts \$8.1 Billion Bank Run - [Bloomberg](#)
- Crypto Broker Genesis Eliminates 30% of Staff in Latest Cuts - [Bloomberg](#)



# Genesis

- Crypto Broker Genesis' CEO Tells Clients It Needs More Time to Sort Out Finances - [CoinDesk](#)
- Crypto broker Genesis owes Winklevoss exchange's customers \$900mn - [Financial Times](#)



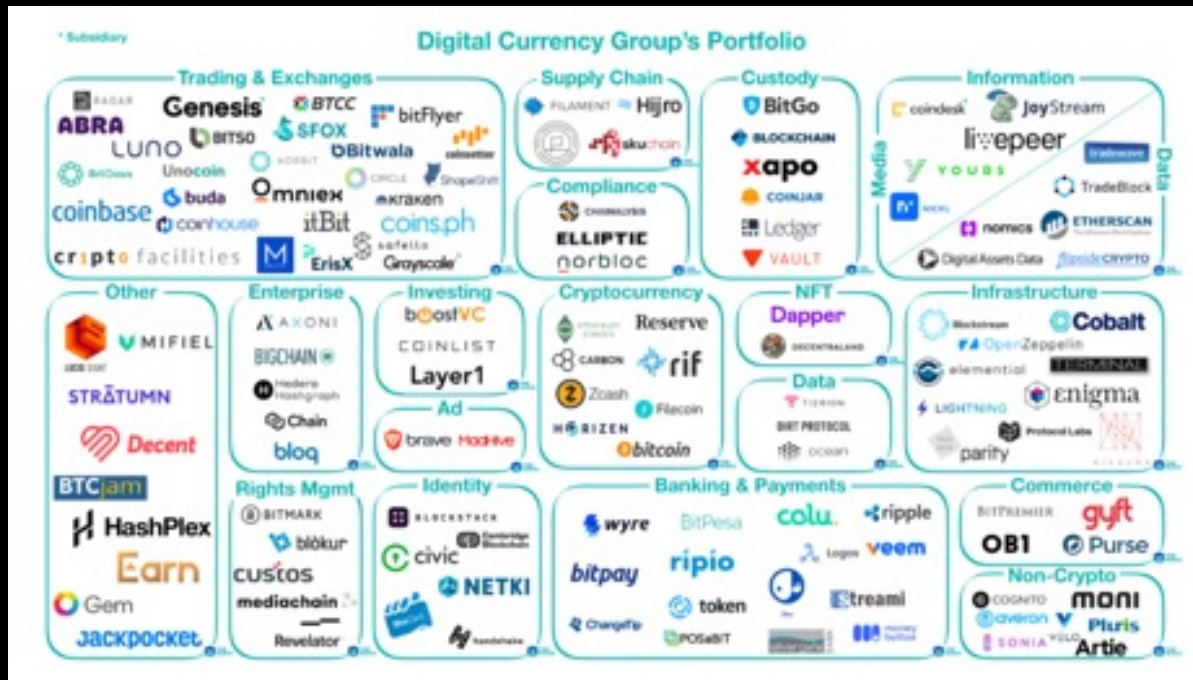
# Gemini, Celsius e DCG

- Gemini Earn Users Are Unhappy With the Crypto Exchange's Withdrawal Halt - [Bloomberg](#)
- Celsius 'Earn' Assets Belong to Bankrupt Crypto Lender, Judge Rules - [CoinDesk](#)
- Gemini's Cameron Winklevoss Accuses DCG CEO Barry Silbert of 'Bad Faith' Tactics - [Bloomberg](#)



# Digital Currency Group

- Genesis Owner DCG Is Shutting a Crypto Wealth-Management Business - [CoinDesk](#)
- Digital Currency Group to shutter wealth management unit: The Information - [The Block](#)

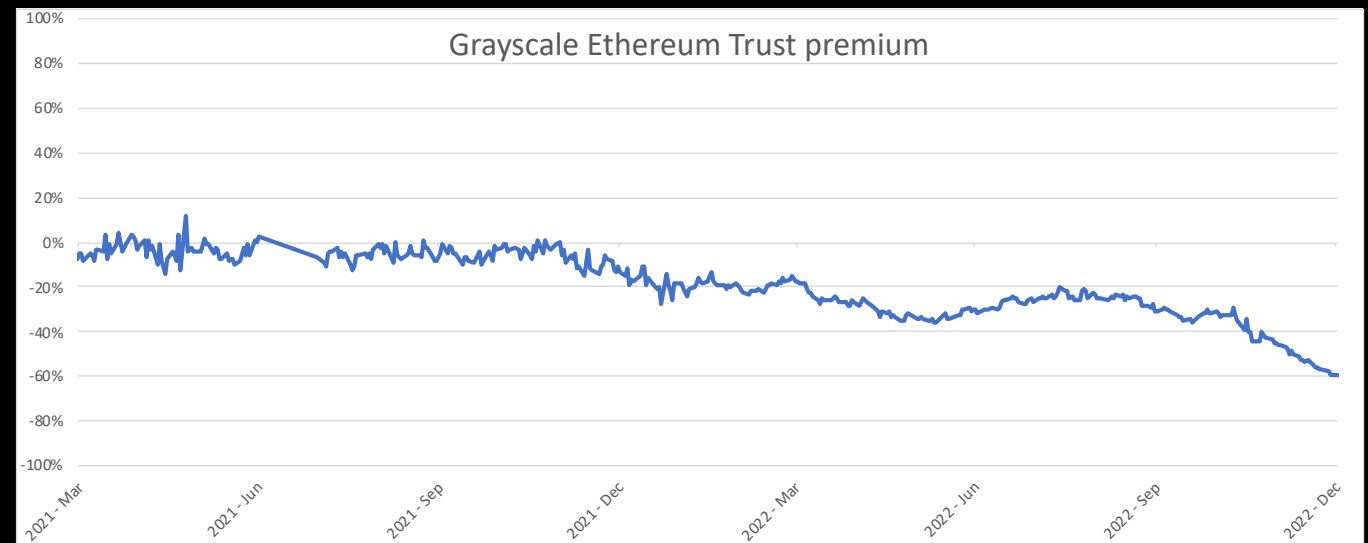
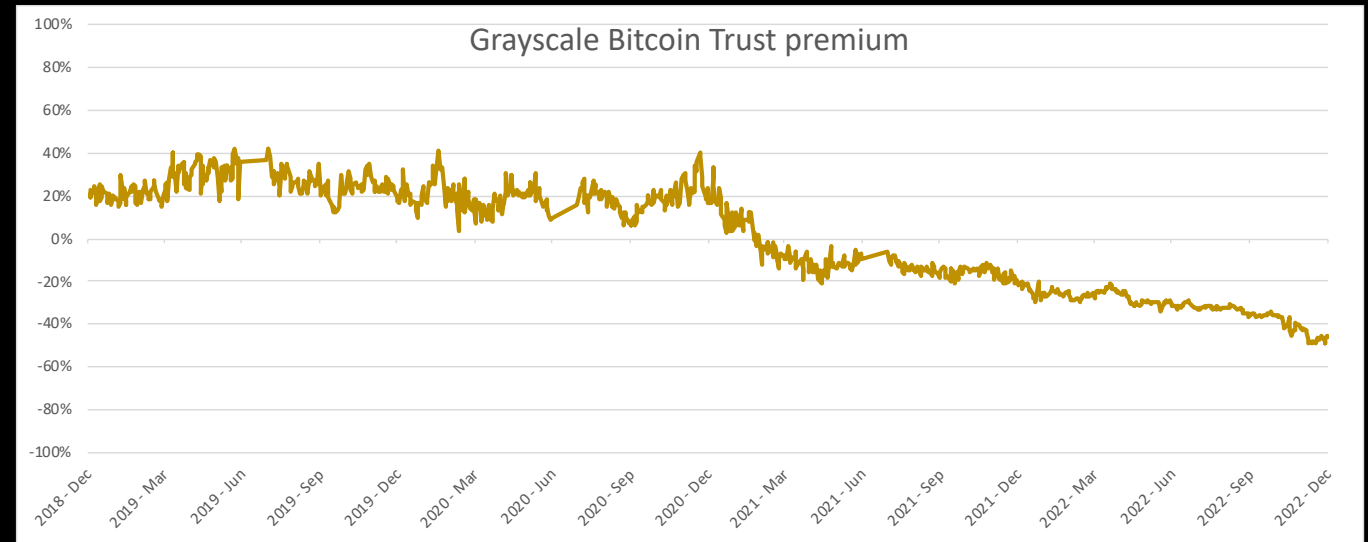


@ 2023 Digital Gold Institute



# Grayscale Trust

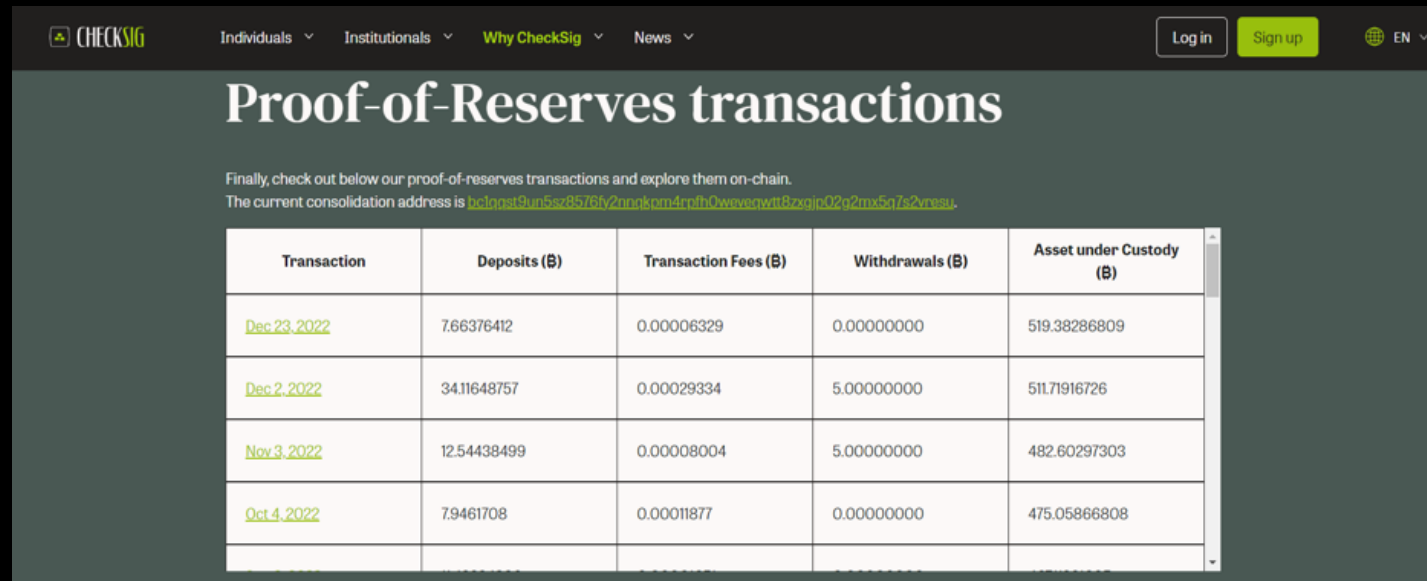
- Grayscale Bitcoin Trust Discount Reaches Record 50% - [CoinDesk](#)
- Grayscale Ethereum Trust nears record -60% discount - [The Block](#)
- Grayscale won't share proof of reserves, citing 'security concerns' - [The Block](#)





# Proof-of-Reserves

- Centralized exchanges are scrambling in attempts to prove their reserves - [The Block](#)
- Bank of America Says Crypto Exchanges' Proof of Reserves Have Too Many Shortcomings - [CoinDesk](#)
- Proof-of-Reserves - [CheckSig](#)



The screenshot shows the CheckSig website interface. At the top, there is a navigation bar with the CheckSig logo, links for 'Individuals', 'Institutionals', 'Why CheckSig', and 'News'. On the right side of the navigation bar are 'Log in' and 'Sign up' buttons, and a language selector set to 'EN'. The main heading is 'Proof-of-Reserves transactions'. Below the heading, a text block states: 'Finally, check out below our proof-of-reserves transactions and explore them on-chain. The current consolidation address is [bc1qst9un5sz8576fy2nnkcm4nph0wvewqwt8zqjp02o2mx5q7s2vnsu](#).' Below this text is a table with five columns: 'Transaction', 'Deposits (B)', 'Transaction Fees (B)', 'Withdrawals (B)', and 'Asset under Custody (B)'. The table contains four rows of data, each with a date link in the first column.

Transaction	Deposits (B)	Transaction Fees (B)	Withdrawals (B)	Asset under Custody (B)
<a href="#">Dec 23, 2022</a>	7.66376412	0.00006329	0.00000000	519.38286809
<a href="#">Dec 2, 2022</a>	34.11648757	0.00029334	5.00000000	511.71916726
<a href="#">Nov 3, 2022</a>	12.54438499	0.00008004	5.00000000	482.60297303
<a href="#">Oct 4, 2022</a>	7.9461708	0.00011877	0.00000000	475.05866808

# Binance (1/2)

- Binance Proof-of-Reserves Auditor Mazars Pauses All Work for Crypto Clients - [CoinDesk](#)
- Binance Is Trying to Calm Investors, but Its Finances Remain a Mystery - [WSJ](#)
- Binance CEO Changpeng 'CZ' Zhao Warns Staff of Turbulent Times Ahead: Bloomberg - [CoinDesk](#)



# Binance (2/2)

- Binance's Changpeng Zhao Sows Doubt in Coinbase and Grayscale - [CoinDesk](#)
- Binance Allocates Another \$1B for Its Crypto Recovery Fund - [CoinDesk](#)
- Binance Failing to Get US Exchange Listings for BNB Is Yellow Flag for Crypto Analysts - [CoinDesk](#)



# NFT

- OpenSea chief seeks to distance NFTs from crypto crisis - [Financial Times](#)
- Donald Trump Announces \$99 Digital Trading Card NFTs - [CoinDesk](#)
- Nike's RTFKT hints at move-to-earn game via phygital drop - [The Block](#)
- Starbucks NFTs are now available to beta testers - [The Block](#)
- Warner Music Group to Release Polygon Music NFTs Through LGND Platform - [Decrypt](#)



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 dots, suggesting a digital or security theme. The padlock is slightly tilted and has a glowing effect.

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
- «*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.*»
- SEC Calls FTT Exchange Token a Security - [CoinDesk](#)

[Full Speech - Gensler on Bitcoin as Digital Gold](#)



Gary Gensler  
Chair the U.S. Securities and Exchange



# EU and MiCA Regulation

- EU Delays Vote on MiCA Crypto Legislation Until February - [CoinDesk](#)
- EU's MiCA regulation vote deferred to February 2023: spokesperson - [The Block](#)
- Bitcoin's last stand - [ECB](#)



- [Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Markets in Crypto-assets](#)

# Consob

Richiamo di attenzione: incarichi professionali relativi a società crypto



Richiamo di attenzione n. 6/22  
del 20 dicembre 2022



# Taxation

- EU crypto taxation proposal will target firms all over the world - [The Block](#)
- EU to Make Crypto Companies Report Tax Details to Authorities - [CoinDesk](#)



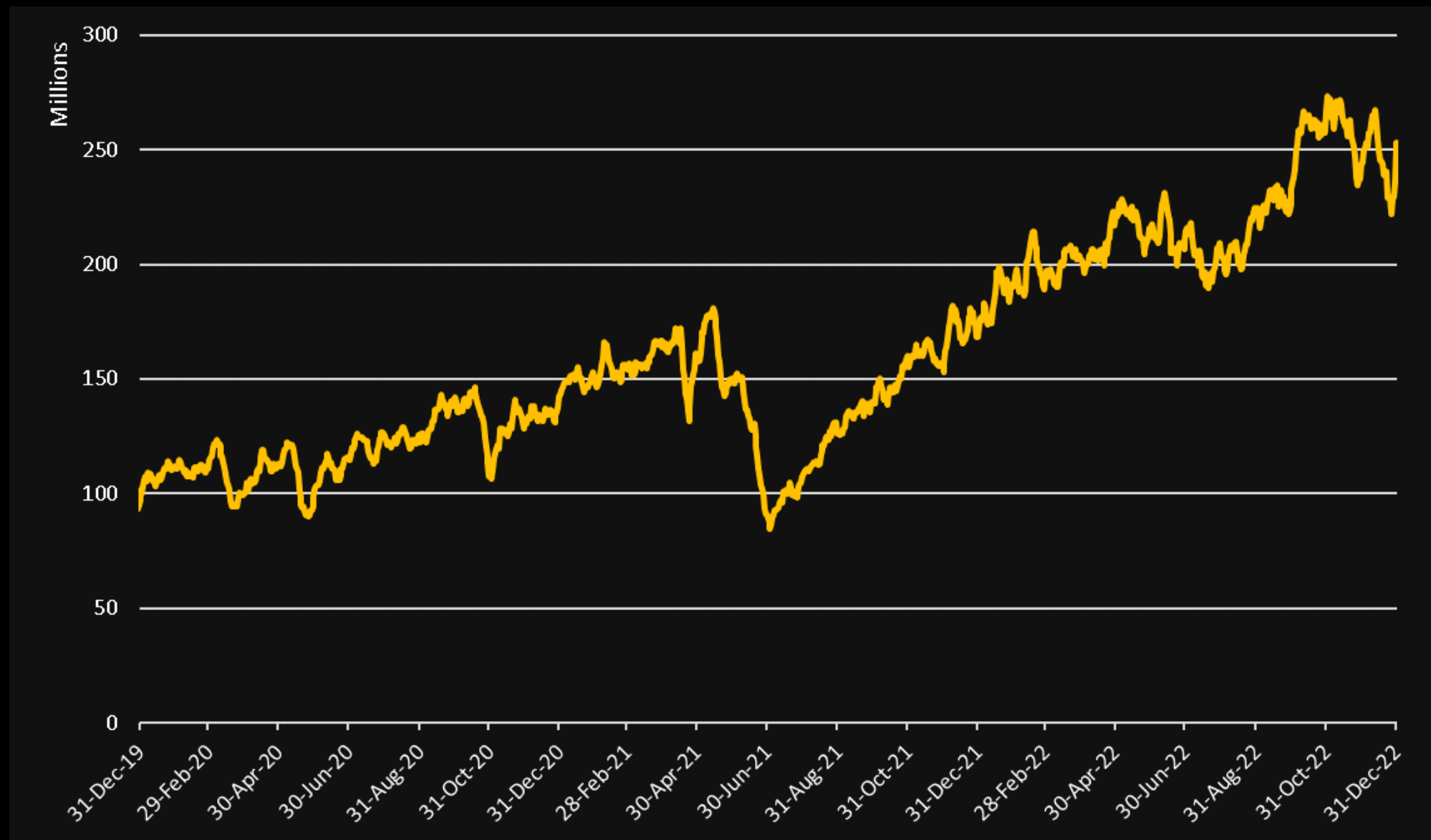
- Crypto e legge di bilancio - [DGI](#)

[Testo complete legge di Bilancio 2023](#)

The background is a solid orange color. Overlaid on it is a faint, stylized graphic. In the center is a large padlock icon. Surrounding the padlock are several concentric circles and a network of lines connecting small dots, suggesting a digital or technological theme. The lines and dots are a lighter shade of orange than the background.

TECHNOLOGY

# Mining: New Hash Rate All-Time High



The background is a solid orange color. Overlaid on it is a faint, stylized graphic. In the center is a large padlock icon. Surrounding the padlock are several concentric circles and a network of lines connecting small dots, suggesting a digital or technological theme. The lines and dots are a lighter shade of orange than the background.

THE INSTITUTE

# About us



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

A promotional graphic for CryptoWeek. The background is dark with a repeating pattern of the letters 'C', 'K', 'S', 'G', 'C', 'K', 'S', 'G' in a lighter shade. In the center, the word 'CRYPTO' is in large white capital letters, and 'WEEK' is in large green capital letters. A green microphone icon is positioned to the left of the 'W' in 'WEEK'. Above 'CRYPTO' is the text 'by CheckSig' in a smaller white font. To the right of the central text, there is white text that reads 'Cos'è successo nel mondo crypto questa settimana?'. Below that, in a smaller white font, it says 'Venerdì alle 18:00 in live streaming'. At the bottom right, there is a vertical line separating the text 'Con Ferdinando M. Ametrano' from 'Amministratore delegato CheckSig' and 'Direttore scientifico DGI'.

by CheckSig

# CRYPTO WEEK

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

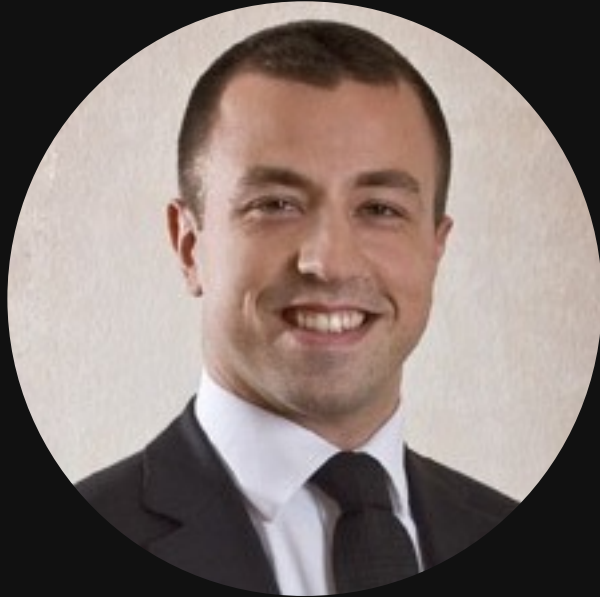
[www.checksig.com/it/cryptoweek](http://www.checksig.com/it/cryptoweek)



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 concentric circles and radial lines, resembling a technical or security interface. A network of thin, light-yellow lines with small circular nodes is scattered across the background, connecting various points. In the lower-left area, there are three small, solid white squares stacked vertically.

INVITED SPEAKERS

# Guest Speaker



**Francesco Avella**

***LL.M., Managing Partner di Studio Avella e Associati***

*“Manovra Finanziaria e Fiscalità Cripto: quali novità?”*





**Contacts:**

**[www.dgi.io](http://www.dgi.io) | [info@dgi.io](mailto:info@dgi.io)**

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