



April 18

2023

2023

Q1

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 through 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

1. **Market**
2. **Ecosystem**
3. **Regulation**
4. **Technology**
5. **The Institute**





MARKET

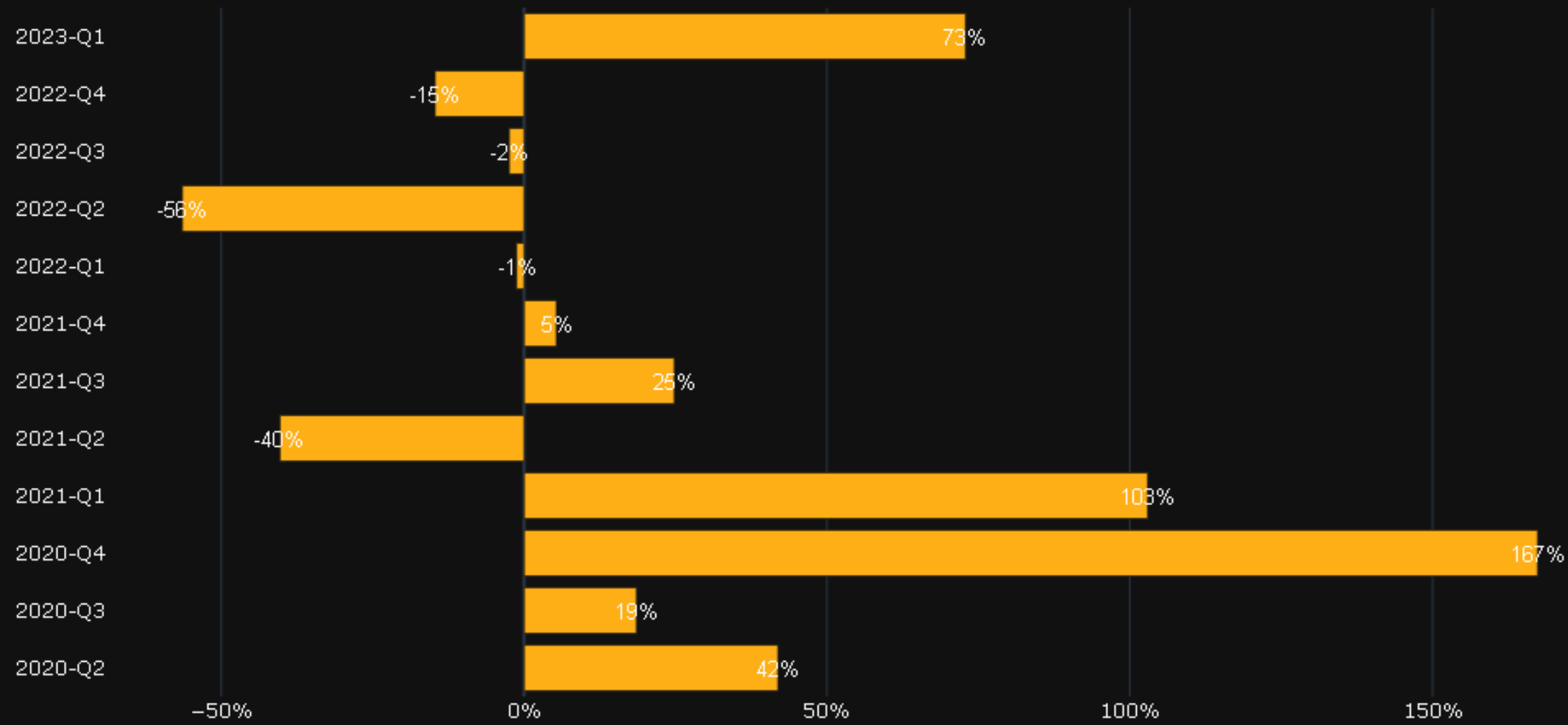
Bitcoin Performance 2023Q1 +73%



- After four negative quarters, Bitcoin records a positive quarter with a +73%.



Bitcoin Quarterly Performances

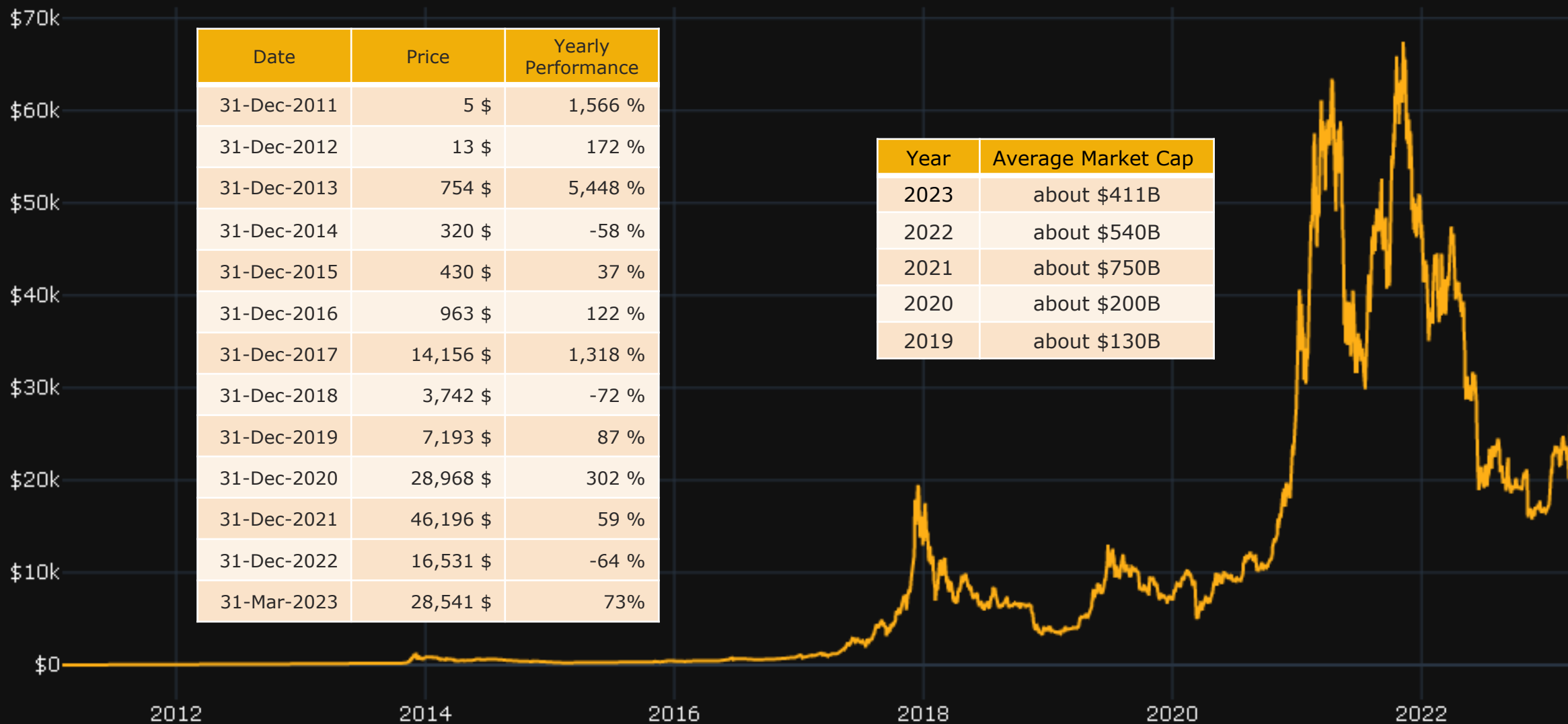


Bitcoin Performance Last 12M -37%



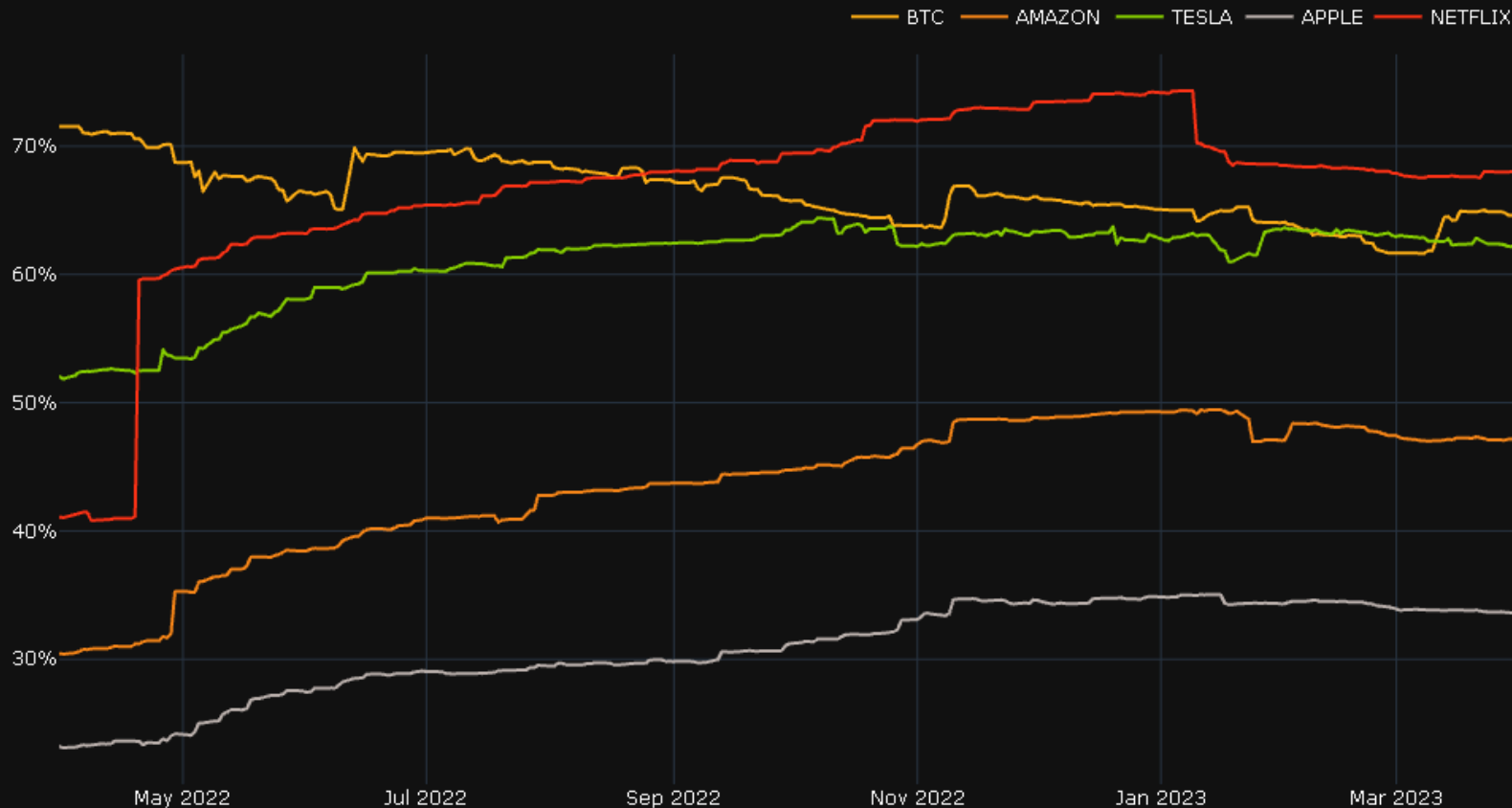
- The rolling 12-month performance remains negative at -37%.

Bitcoin Yearly Performances



Volatility of Best Performing Assets

252 Days Rolling Window



- The volatility of Bitcoin has decreased both in absolute terms and in relative terms compared to its peers - the most performing investments of the last decade: Amazon, Tesla, and Netflix
- It can be noted that the absolute volatility of Bitcoin has decreased compared to the volatility of Netflix and has also been below the volatility of Tesla for a certain period of time.

Asset Class 1Y Correlation Matrix

1Y

Corr = 100%

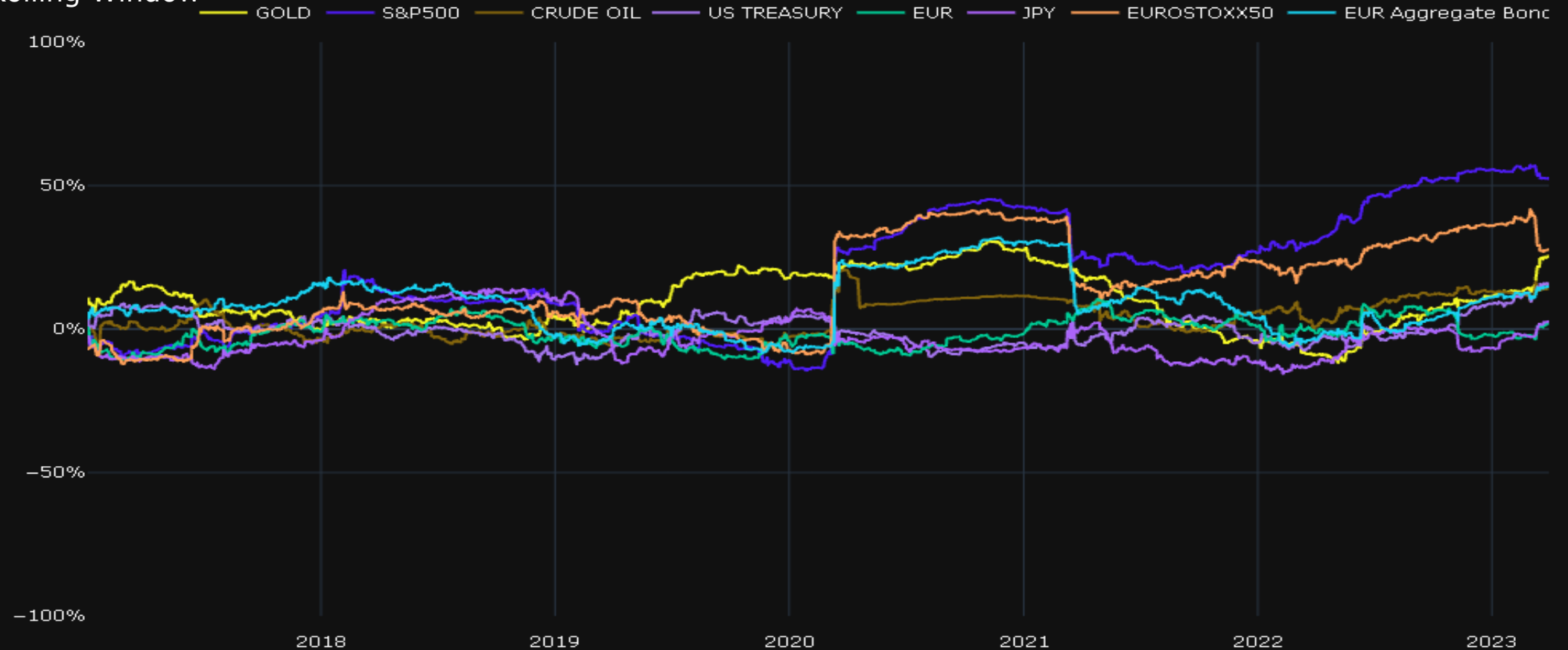
Corr = -100%

BTC	100.00%															
GOLD	25.54%	100.00%														
COPPER	20.23%	47.60%	100.00%													
CRUDE OIL	15.86%	21.58%	46.66%	100.00%												
CORN	5.71%	13.49%	17.73%	28.35%	100.00%											
EUR	2.25%	10.38%	6.44%	-4.00%	1.36%	100.00%										
GBP	0.08%	11.22%	8.49%	1.99%	4.12%	78.68%	100.00%									
JPY	2.67%	-0.97%	8.08%	6.58%	3.32%	46.06%	50.61%	100.00%								
CHF	2.54%	12.95%	7.41%	-3.82%	1.42%	75.76%	62.65%	52.03%	100.00%							
NASDAQ	55.03%	18.26%	19.39%	15.00%	-5.10%	-4.01%	-1.76%	2.46%	-5.35%	100.00%						
S&P500	52.58%	20.87%	22.52%	20.90%	-3.45%	-4.41%	-0.75%	2.43%	-8.06%	96.85%	100.00%					
EUROSTOXX50	27.69%	23.71%	40.59%	25.56%	1.59%	-0.28%	6.97%	4.90%	-6.32%	56.35%	60.05%	100.00%				
VIX	-45.46%	-10.32%	-18.81%	-19.92%	-0.50%	4.61%	0.28%	-2.64%	10.81%	-70.93%	-74.29%	-48.72%	100.00%			
US TREASURY	15.77%	39.01%	-1.37%	-16.34%	-7.55%	7.45%	5.20%	-6.99%	12.38%	16.45%	14.09%	5.13%	-8.84%	100.00%		
PAN EUR	14.99%	32.37%	-3.37%	-17.50%	-5.50%	12.17%	6.77%	1.87%	9.19%	24.94%	24.28%	20.26%	-12.13%	67.90%	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		Copper	Crude Oil	Corn	EUR	GBP	JPY	CHF	NASDAQ	S&P 500	EURSTOXX	VIX	US Treasury	PAN EUR
Correlation at 31 Mar 2023	25.54%	20.23%	15.86%	5.71%	2.25%	0.08%	2.67%	2.54%	55.03%	52.58%	27.69%	-45.46%	15.77%	14.99%

Asset Class 1Y 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 Mar2023	25.54%	20.23%	15.86%	5.71%	2.25%	0.08%	2.67%	2.54%	55.03%	52.58%	27.69%	-45.46%	15.77%	14.99%

Asset Class 3Y Correlation Matrix

3Y

BTC	100.00%															
GOLD	11.72%	100.00%														
COPPER	18.18%	29.40%	100.00%													
CRUDE OIL	5.18%	3.35%	11.34%	100.00%												
CORN	6.56%	12.61%	16.04%	11.48%	100.00%											
EUR	3.03%	7.40%	6.77%	-1.60%	0.68%	100.00%										
GBP	-1.27%	4.49%	6.26%	0.72%	0.24%	70.86%	100.00%									
JPY	-1.10%	2.48%	6.63%	-1.03%	-2.08%	42.31%	41.88%	100.00%								
CHF	1.41%	11.40%	6.24%	-1.70%	-1.23%	75.02%	55.33%	50.80%	100.00%							
NASDAQ	39.85%	12.14%	21.52%	8.57%	-1.52%	-2.27%	-3.73%	-0.33%	-4.69%	100.00%						
S&P500	36.48%	10.80%	25.86%	12.62%	-0.35%	-2.79%	-3.43%	-2.23%	-7.05%	93.76%	100.00%					
EUROSTOXX50	21.47%	-0.72%	27.12%	6.05%	-4.44%	-2.66%	0.98%	-5.31%	-8.82%	46.74%	56.31%	100.00%				
VIX	-32.70%	-5.34%	-24.93%	-11.74%	-0.56%	4.81%	5.06%	3.42%	8.95%	-66.57%	-70.73%	-42.31%	100.00%			
US TREASURY	3.57%	28.25%	-8.55%	-7.23%	-6.23%	3.75%	3.77%	-0.61%	7.20%	2.56%	-5.46%	-16.93%	8.64%	100.00%		
PAN EUR	7.97%	22.50%	-1.11%	-0.99%	0.79%	9.18%	4.81%	4.95%	9.19%	17.54%	15.21%	5.20%	-2.80%	61.52%	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		

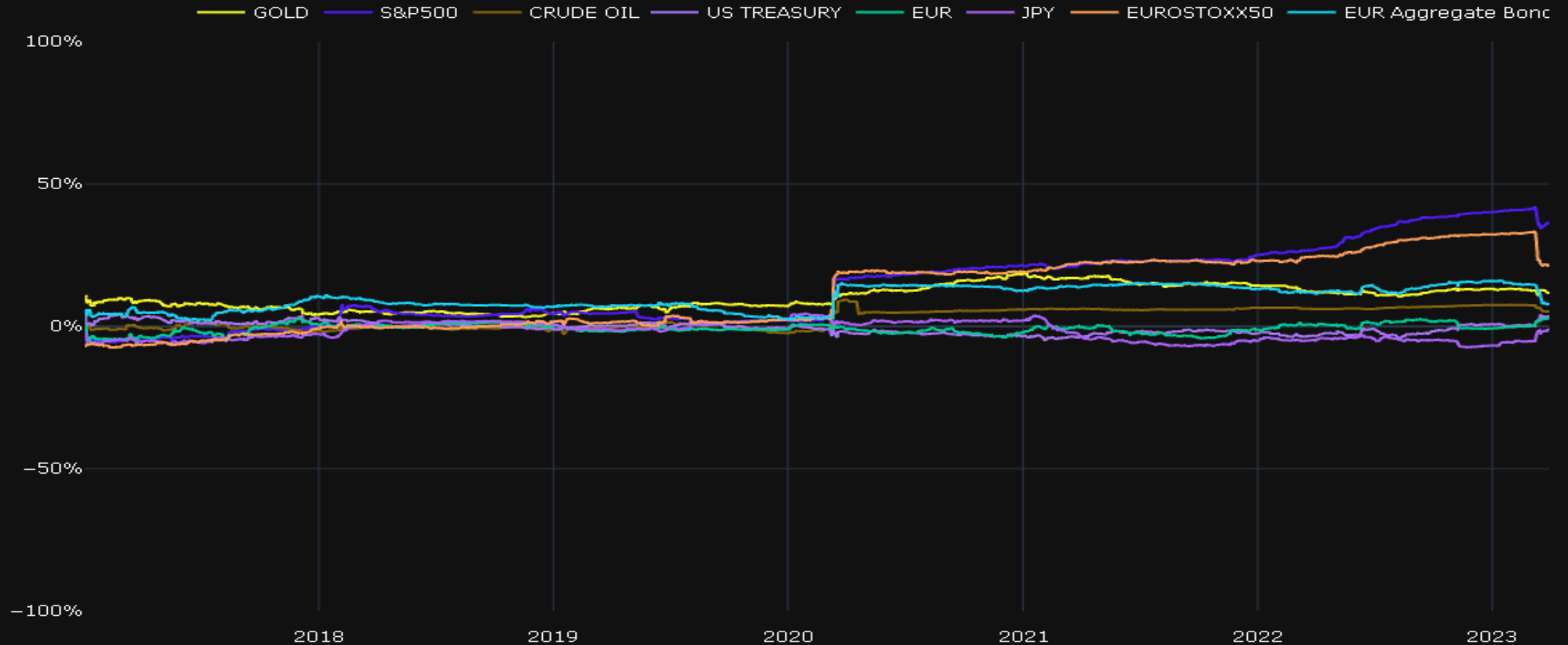
Corr = 100%

Corr = -100%

Asset	Gold	Copper	Crude Oil	Corn	EUR	GBP	JPY	CHF	NASDAQ	S&P 500	EURSTOXX	VIX	US Treasury	PAN EUR
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Asset Class 3Y 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	11.72%	18.18%	5.18%	6.56%	3.03%	-1.27%	-1.10%	1.41%	39.85%	36.48%	21.47%	-32.70%	3.57%	7.97%

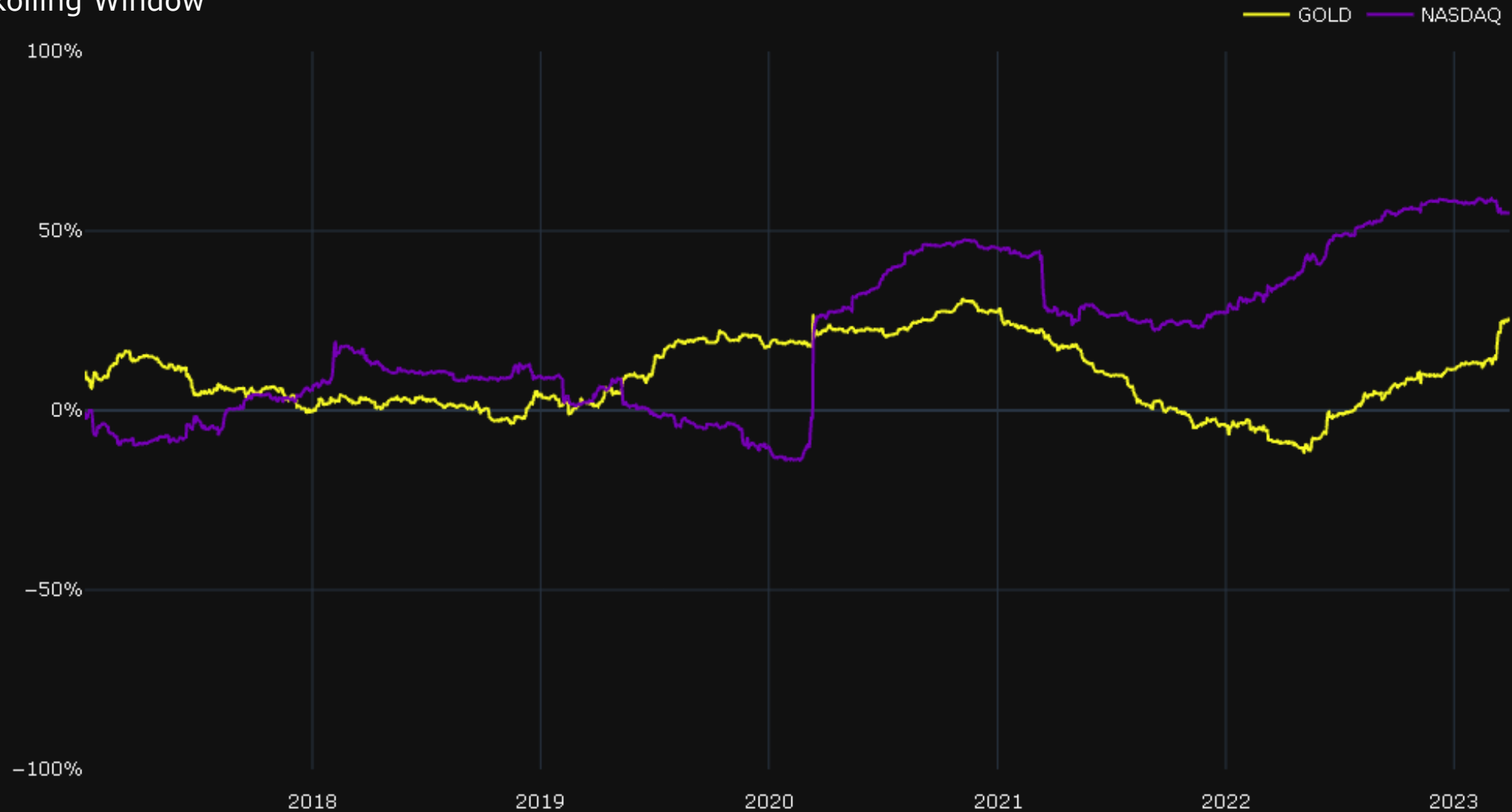
Gold/Nasdaq 1Q Correlation With Bitcoin

1Q Rolling Window



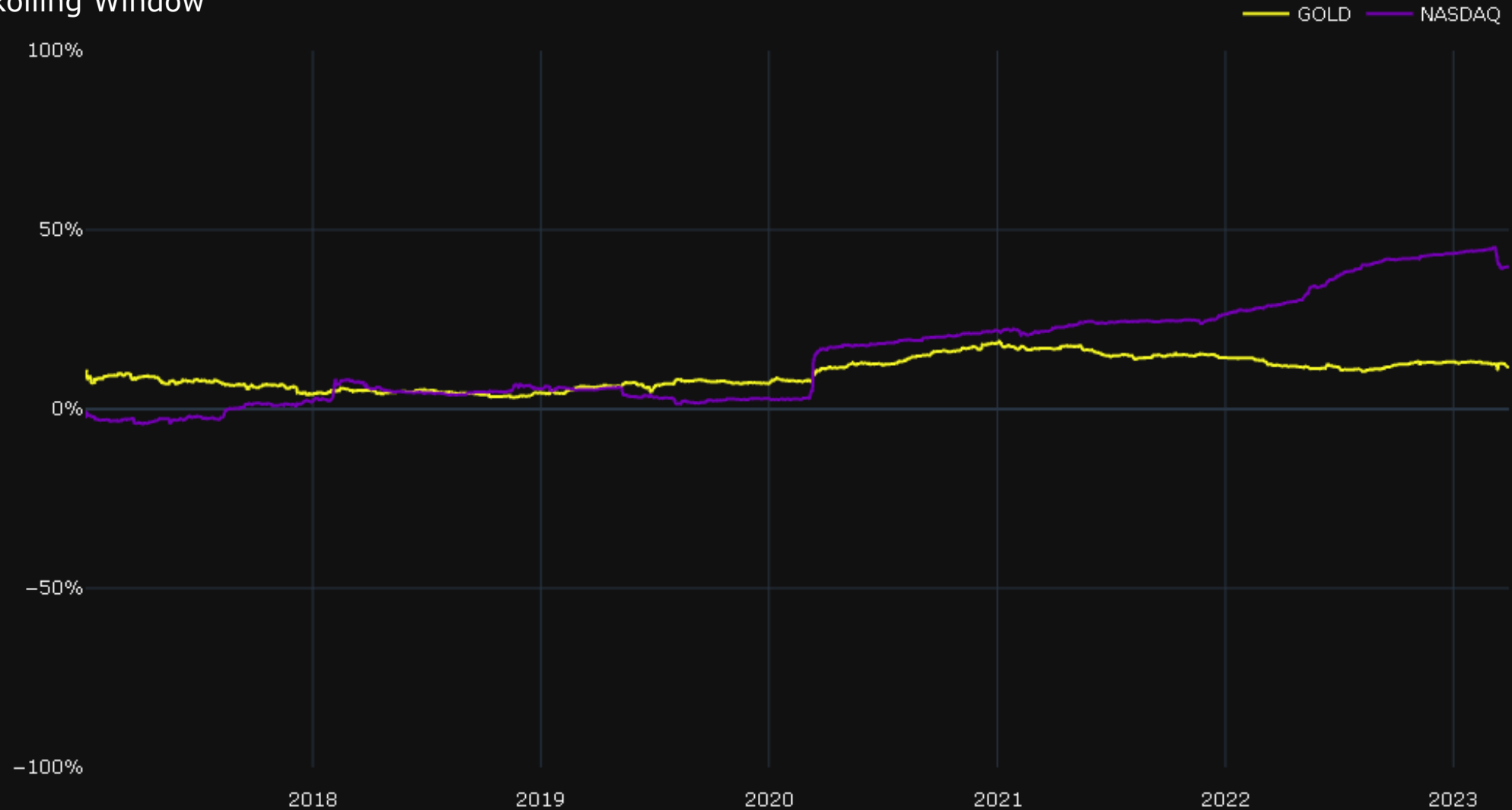
Gold/Nasdaq 1Y Correlation With Bitcoin

1Y Rolling Window

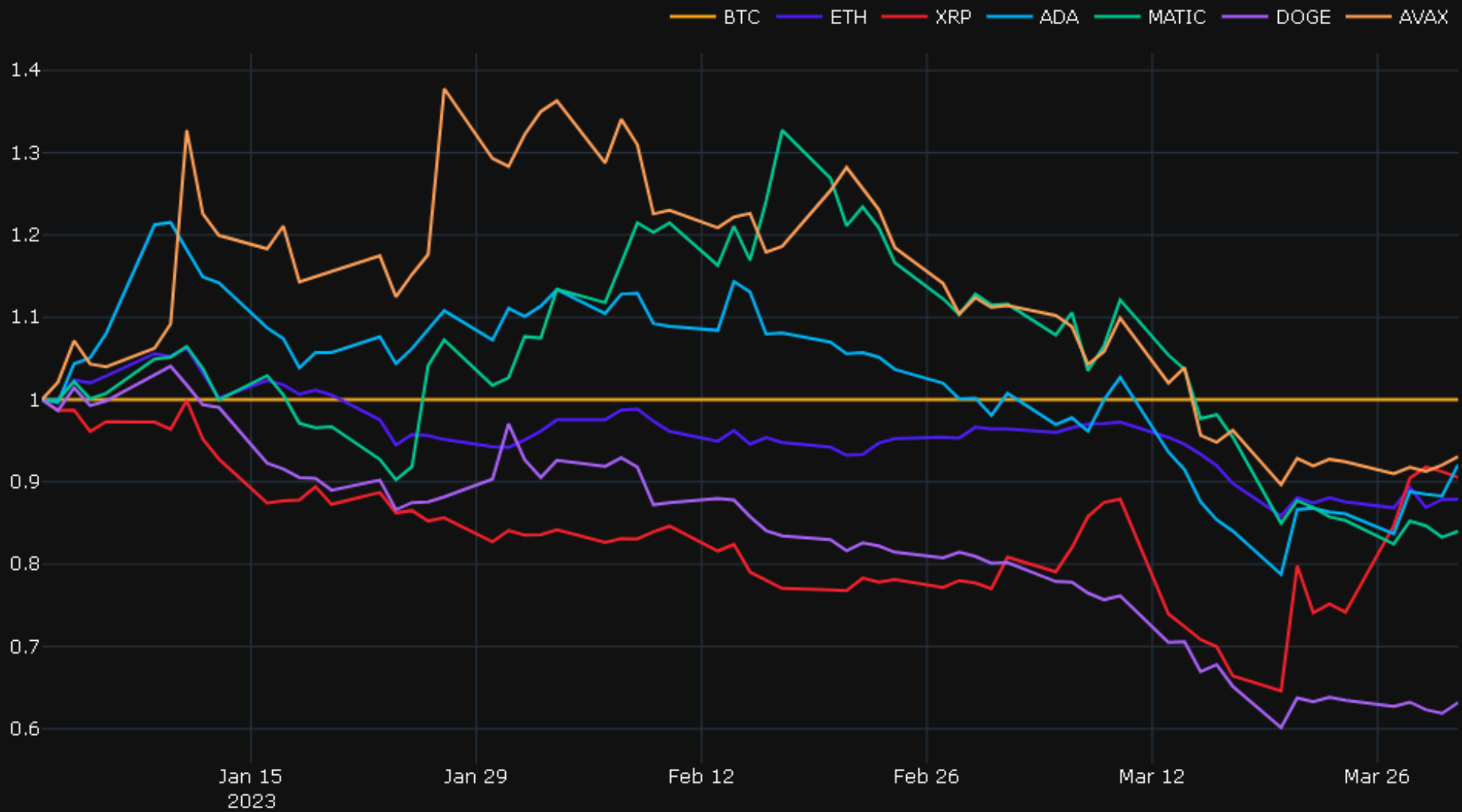


Gold/Nasdaq 3Y Correlation With Bitcoin

3Y Rolling Window



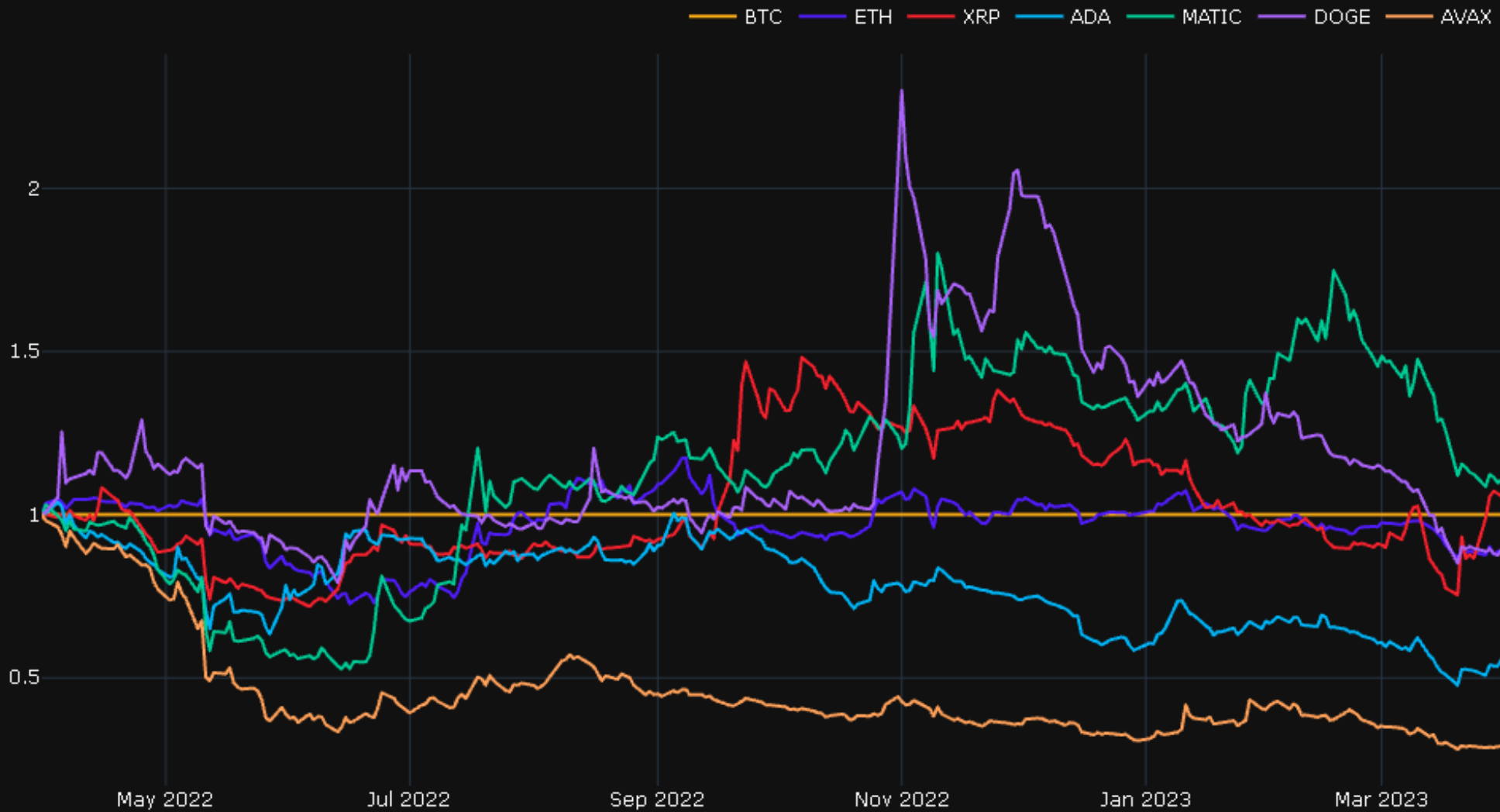
Performance Altcoins vs Bitcoin (2023 Q1)



Altcoin	Performance
AVAX	-6.92%
ADA	-7.90%
XRP	-9.47%
ETH	-12.10%
MATIC	-16.01%
DOGE	-36.82%

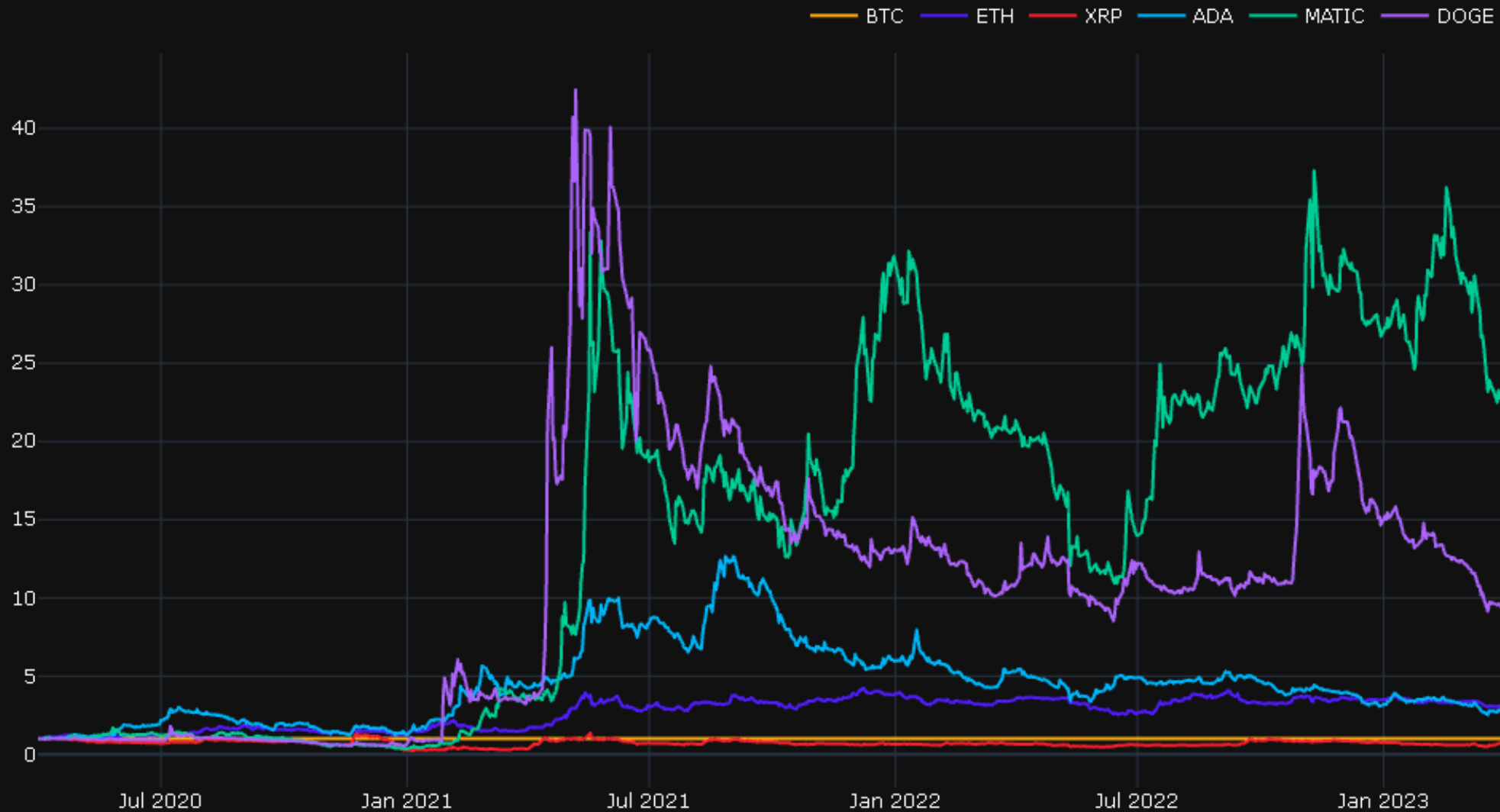


Performance Altcoins vs Bitcoin (Last 12M)



Altcoin	Performance
MATIC	10.65%
XRP	5.71%
DOGE	-10.62%
ETH	-11.22%
ADA	-44.13%
AVAX	-70.77%

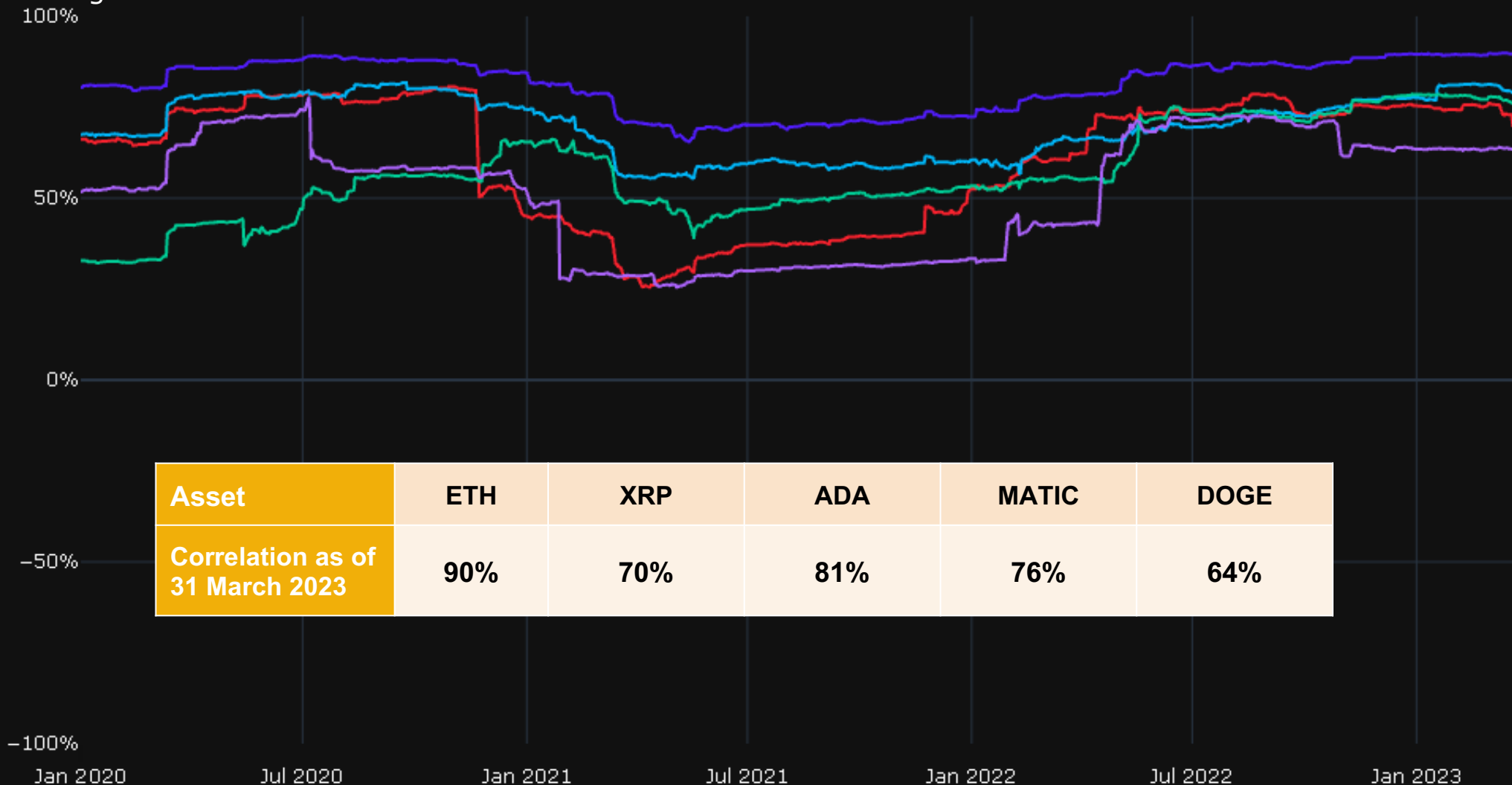
Performance Altcoins vs Bitcoin (Last 3Y)



Altcoin	Performance
MATIC	2191.31%
DOGE	861.72%
ETH	208.35%
ADA	195.20%
XRP	-30.26%

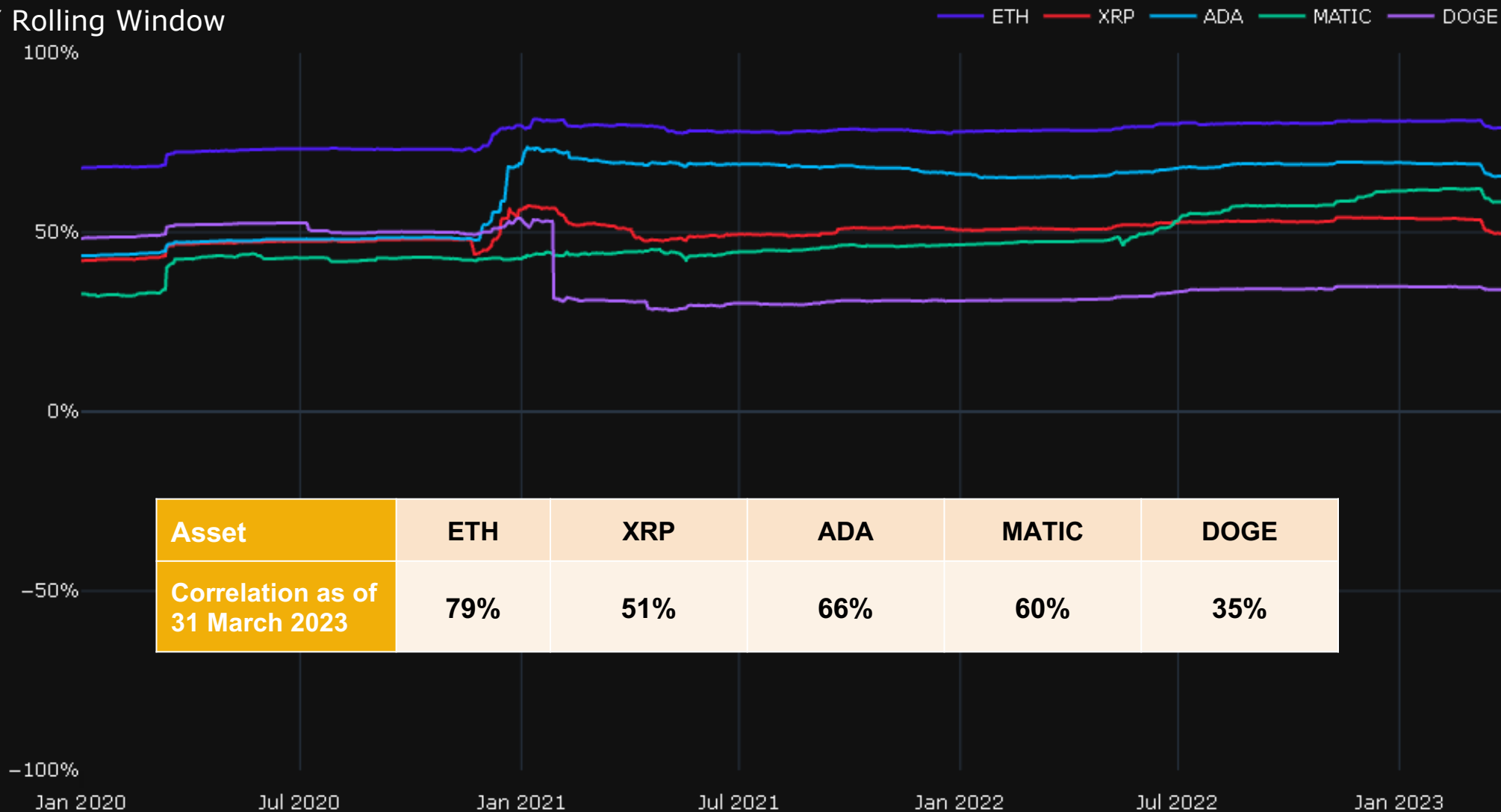
Altcoin 1Y Correlation With Bitcoin

1Y Rolling Window



Altcoin 3Y Correlation With Bitcoin

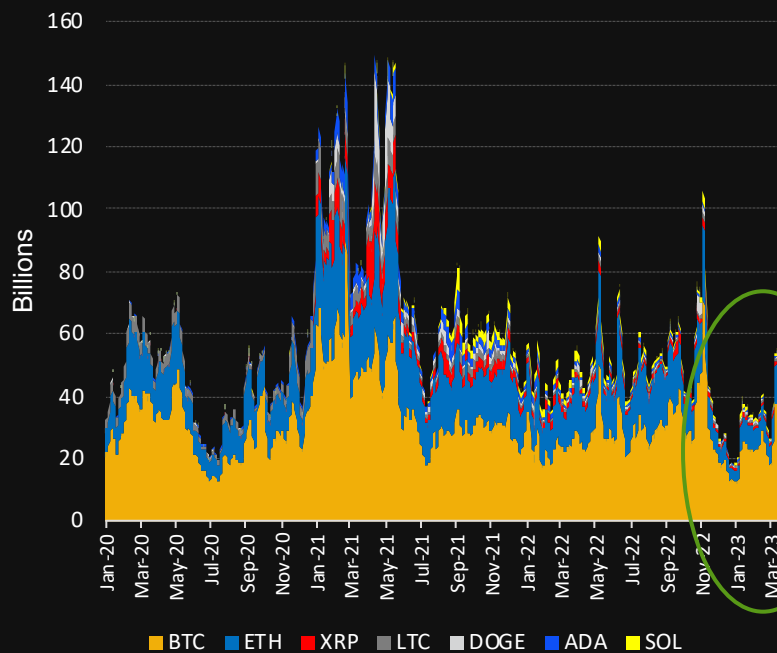
3Y Rolling Window



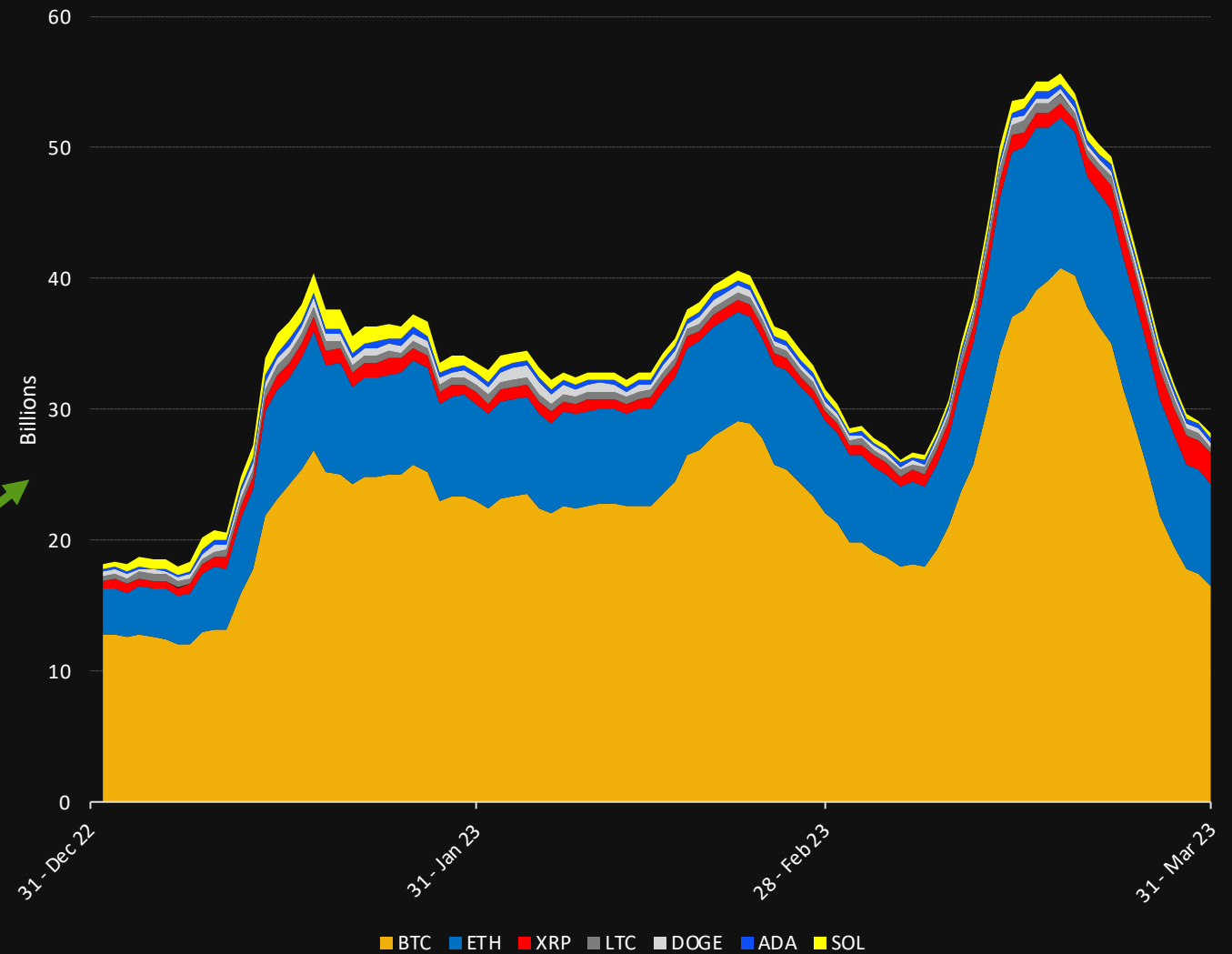
Trading Volume



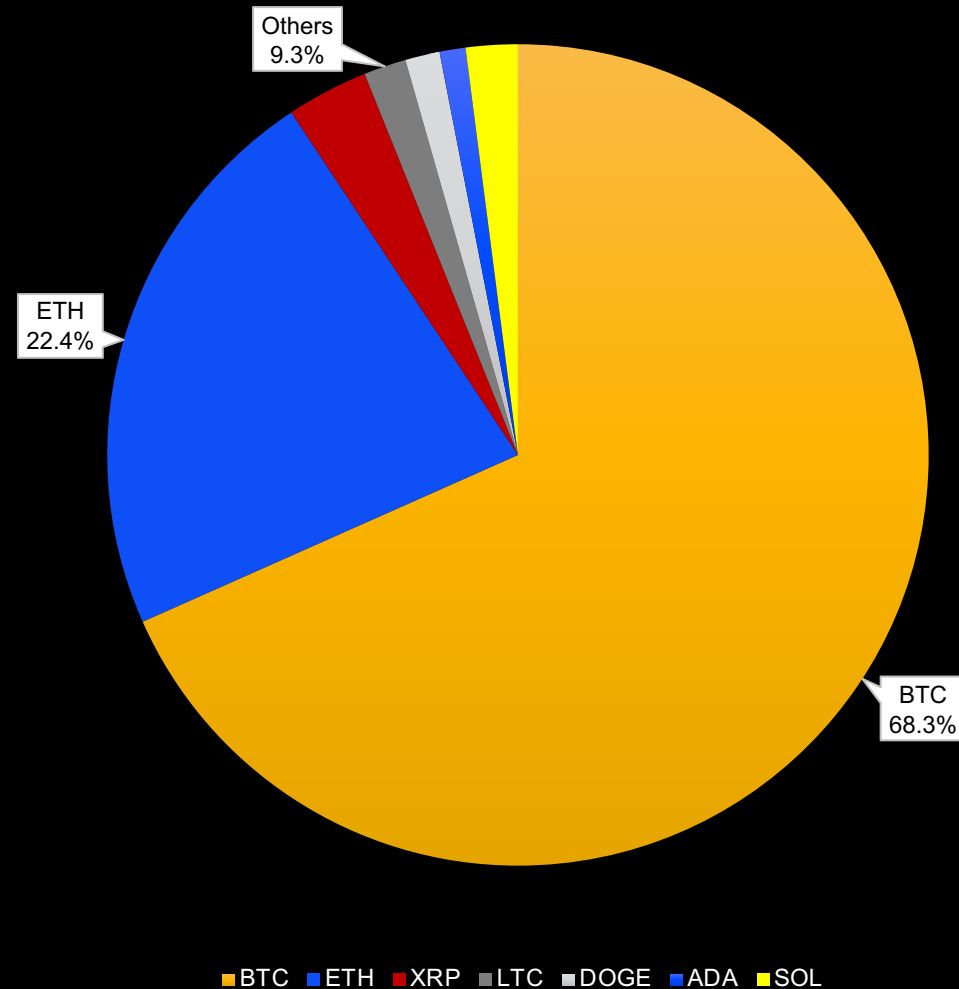
Trading Volume 2020 - 2023



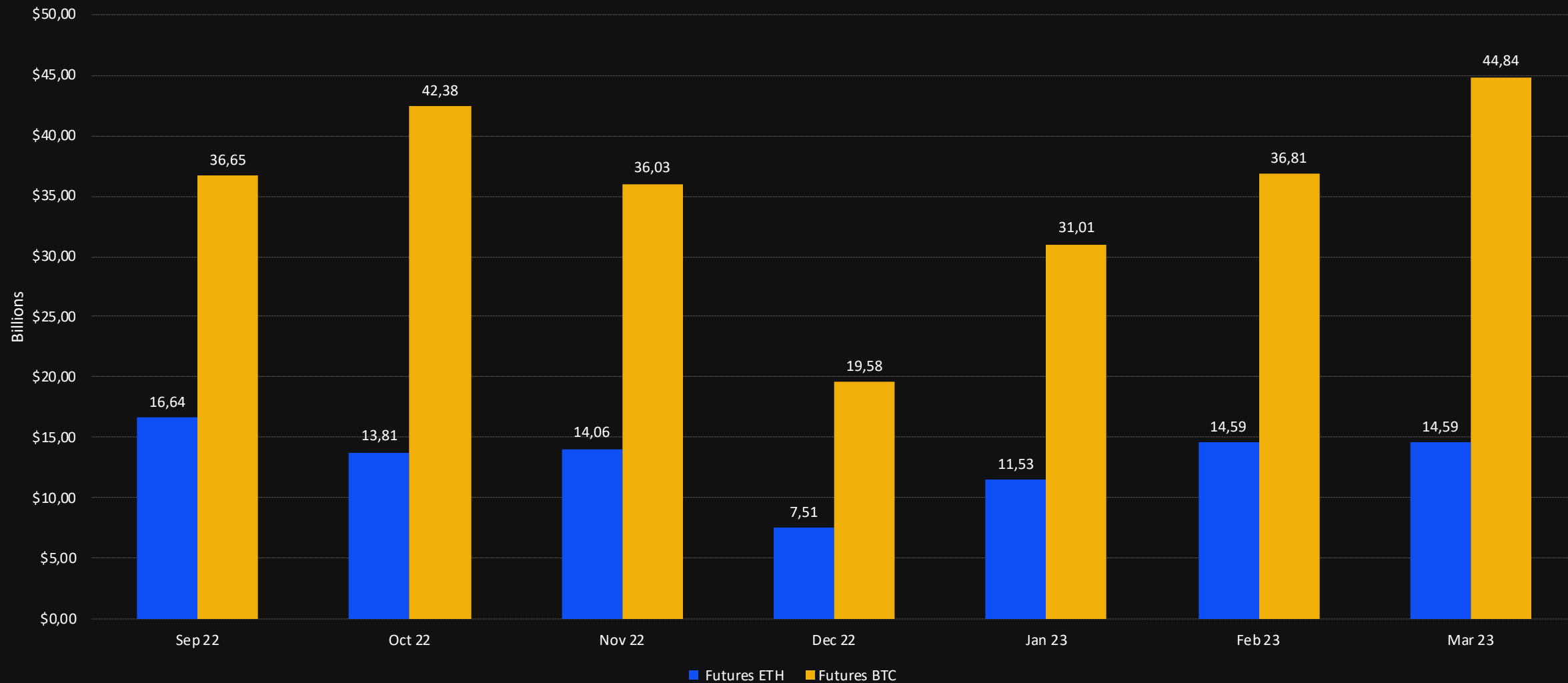
Trading Volume 2023Q1



Average Trading Volume 2023Q1

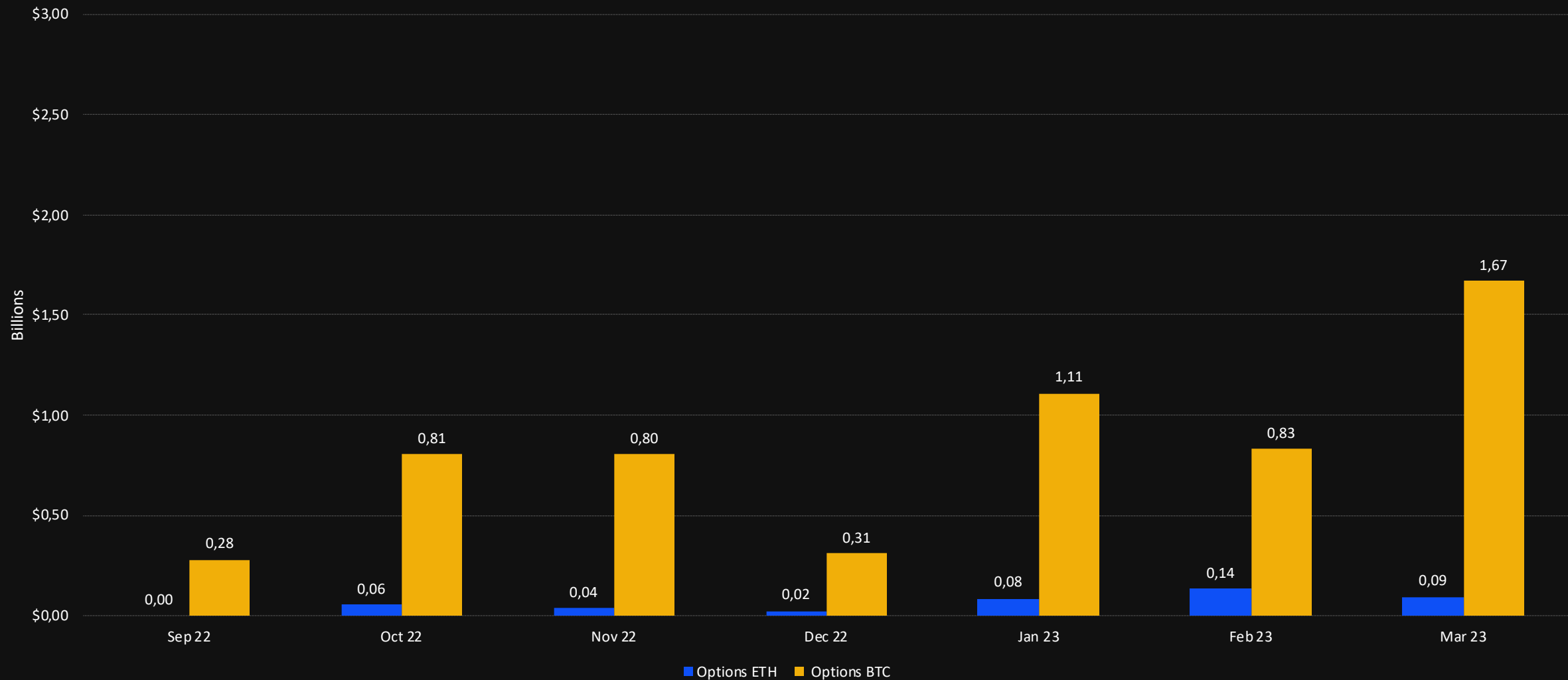


CME Listed Futures





CME Listed Options



The background is a solid mustard yellow color. Overlaid on this is a faint, large-scale graphic. It features a central padlock icon, which is slightly open. Radiating from this central point are numerous thin, light-yellow lines that connect to small circular nodes, creating a network or web-like structure. The overall aesthetic is modern and technological.

ECOSYSTEM

The Banking Crisis

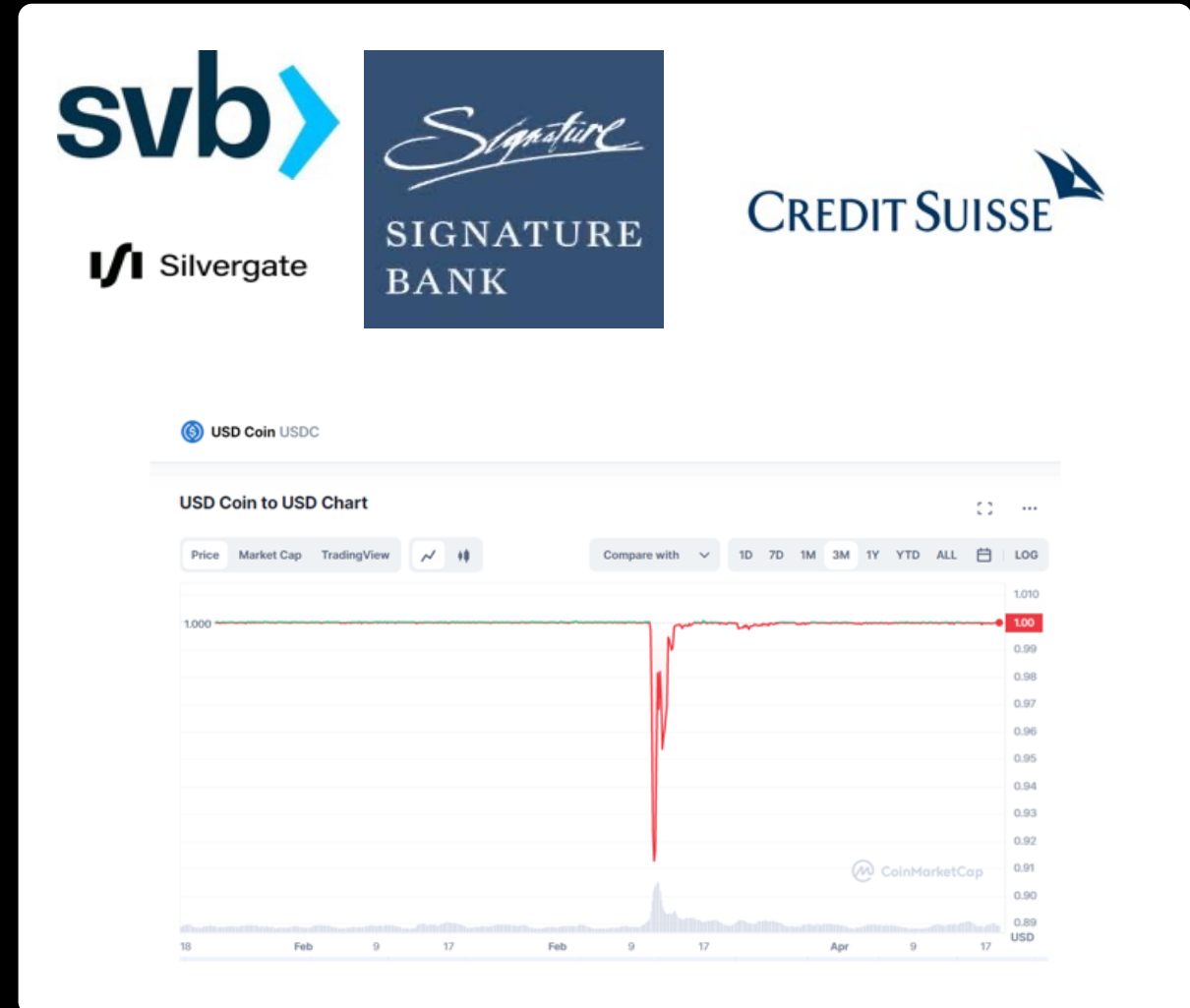
- The recent banking crisis, which broke out on Friday March 10th, has involved the traditional finance world and marginally, some players in the crypto world.
- Circle, the issuer of the USDC stablecoin, is a highly reliable and transparent company that had \$3 billion deposited with Silicon Valley Bank. This caused the price of USDC/USD to reach 0.88 cents, but it regained its "peg" once the US government reassured that all deposits were covered.
- As a result, Tether has regained control of the market and we will see what happens in the coming months.

<https://www.wsj.com/the-banking-crisis-a-timeline-of-key-events>

<https://www.federalreserve.gov/pressreleases/monetary20230312>

<https://www.bloomberg.com/articles/banking-crisis-still-far-from-over>

<https://cointelegraph.com/news/usdc-depegged-but-it-s-not-going-to-default>





Tether USDT / Circle USDC



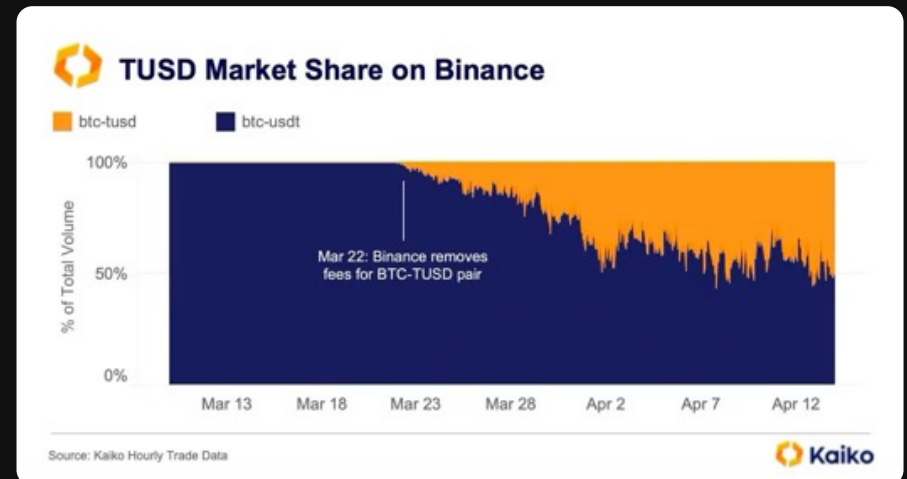
Binance USD to True USD

- Another player, Paxos, was ordered by the Security Exchange Commission to suspend the issuance of Binance USD. Despite its name, according to CZ, Binance CEO, it had nothing to do with the company.
- Meanwhile, Binance has switched from using Binance USD to True USD, as the SEC has sanctioned the former stablecoin.

<https://www.coindesk.com/how-cftc-binance-lawsuit-could-impact-bitcoin-binances-busd-stablecoin-suffers-dollar500m-in-outflows/>

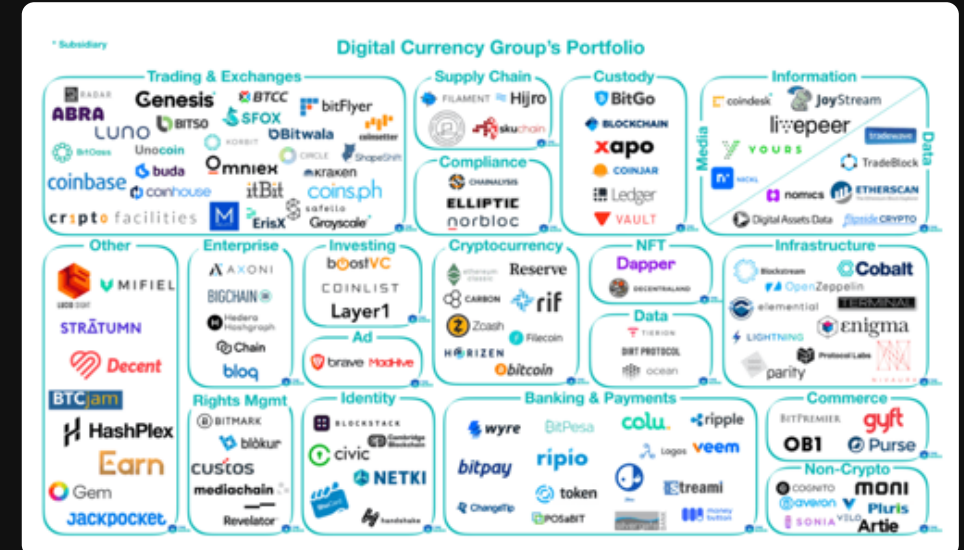
<https://www.coindesk.com/markets/2023/04/14/trueusds-bitcoin-trading-volume-nears-tethers-on-binance-but-traders-hesitate-to-use-the-token/>

<https://www.coindesk.com/business/paxos-to-stop-minting-stablecoin-busd-following-regulatory-action/>



DCG / GrayScale / Genesis / Gemini

Another major player under scrutiny is the conglomerate Digital Currency Group, with its subsidiaries Grayscale, the number one Bitcoin trust, and Genesis, a significant DeFi group. After a long dispute over Gemini's claim of \$700 million on Genesis, Gemini announced that it will contribute \$100 million to Genesis' recovery plan. Clearly, there is a perceived systemic risk.



<https://www.coindesk.com/business/2023/02/06/gemini-to-contribute-100-million-to-genesis-bankruptcy-recovery-plan.html>
<https://www.cnn.com/2023/02/07/dcg-is-selling-holdings-in-grayscale-financial-times/>

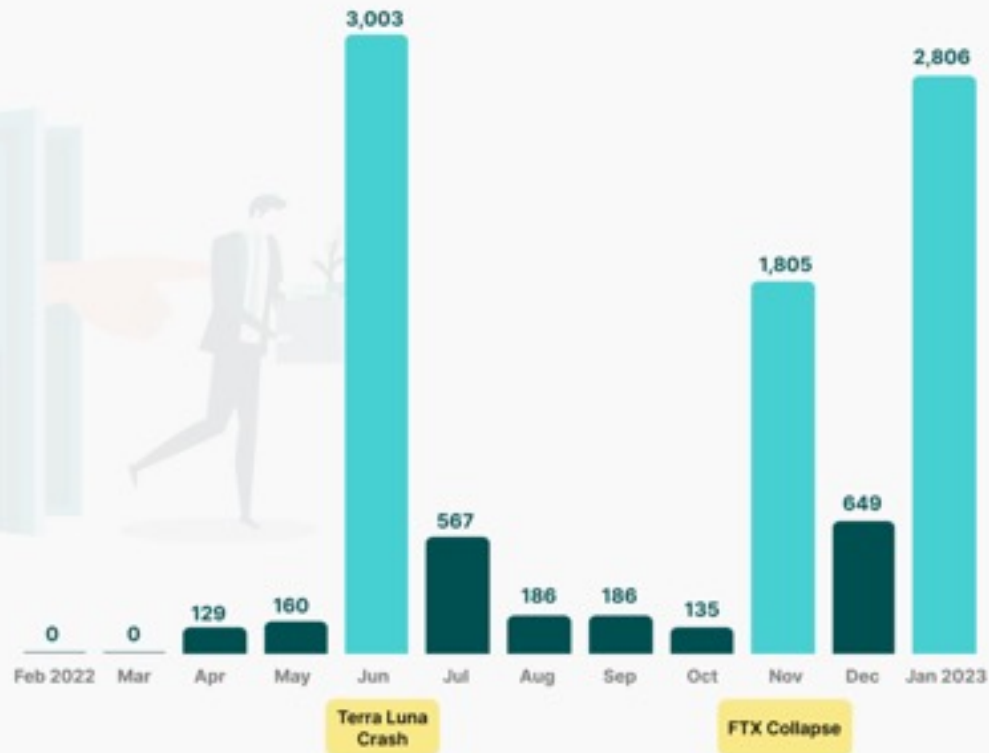
<https://www.sec.gov/news/press-release/2023-7>



Crypto Layoffs

Crypto layoffs jump over 8x above average, after major fallouts

Layoffs from Cryptocurrency Companies in the Past 12 Months



Source: Layoffs.fyi & public reports, Feb 2022 to Jan 2023



- Significant reduction of workforce in several platforms such as Coinbase (36%), Gemini (36%) and Crypto.com (50%).

<https://milkroad.com/jobs/layoffs>

<https://www.coindesk.com/business/2023/01/05/crypto-layoffs-heres-the-grim-count-since-april/>

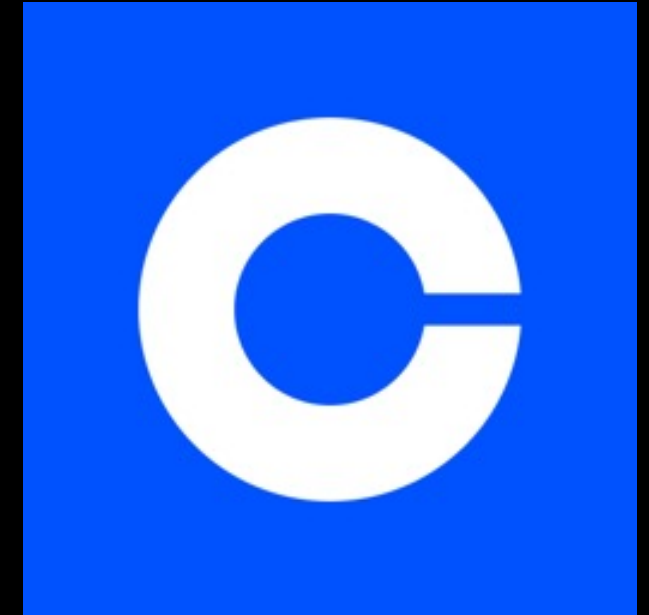


Coinbase

- Shares of Coinbase dropped nearly 13% to \$67.33 in extended trading after the company said on Wednesday that the regulator had issued it a Wells notice - a formal declaration that SEC staff intend to recommend an enforcement action.
- Coinbase has several issues related to the lawsuit with the SEC, which argues that crypto assets are securities, making Coinbase non-compliant with regulations.

<https://www.theverge.com/2023/1/4/23538731/coinbase-fine-crypto-money-laundering-laws-new-york>

<https://www.reuters.com/legal/coinbase-issued-wells-notice-by-sec-2023-03-22/>



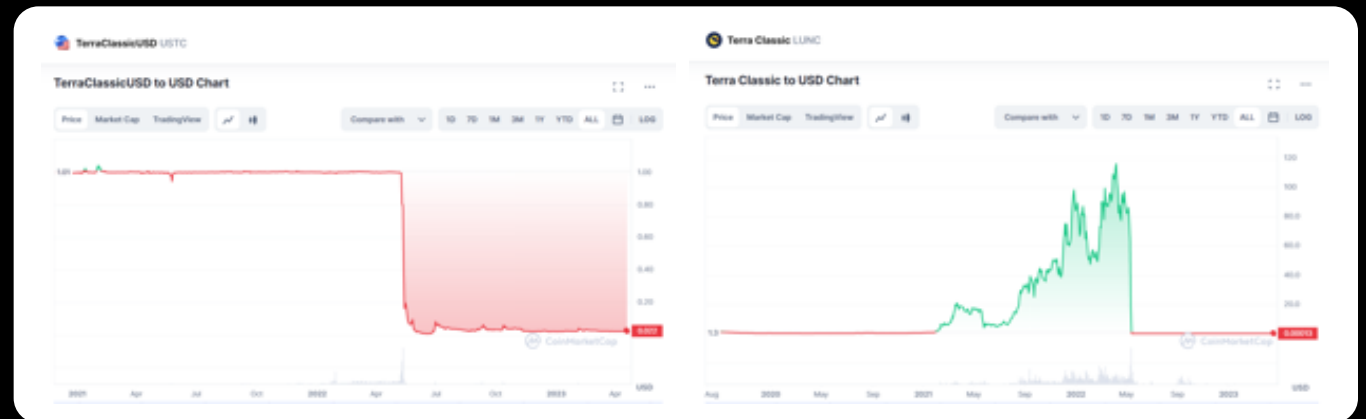
Do Kwon Arrested



- TerraLuna Ecosystem collapsed on May 12th, 2022.
 - 40 billion dollars were lost.
- On March 23rd:
 - Do Kwon was arrested in Montenegro.

<https://www.reuters.com/world/europe/montenegro-police-arrest-suspected-former-ceo-terraform-labs-interior-minister-2023-03-23>

<https://www.coindesk.com/learn/the-fall-of-terra-a-timeline-of-the-meteoric-rise-and-crash-of-ust-and-luna/>



The Rock Trading

The Rock Trading crack - which has left the Italian scene quite shocked, according to initial estimates, would have resulted in a shortfall of 15-20 million.

<https://www.coindesk.com/consensus-magazine/2023/02/24/italian-ftx-leaves-users-in-limbo-citing-difficulties-in-liquidity-management/>

<https://www.wired.it/article/the-rock-trading-fallimento-15-milioni/>

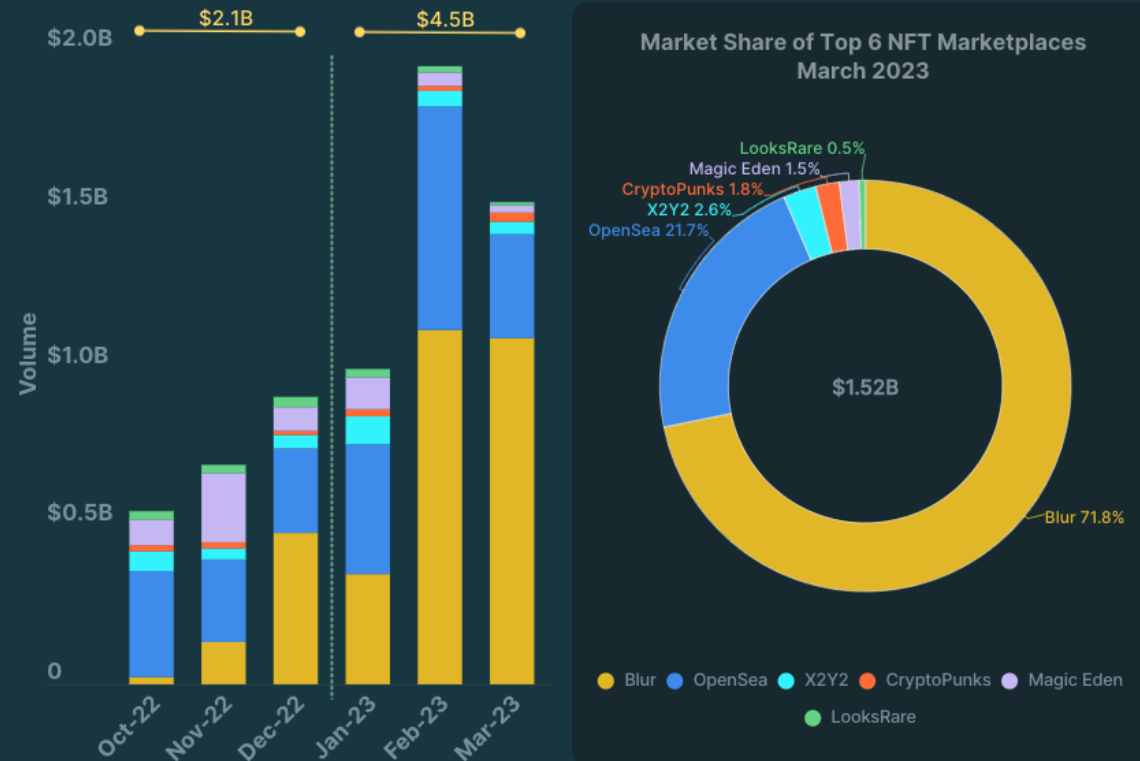


NFT and Web3

- Web 3 is in steep decline because now the new trend is that of artificial intelligence.
- As a result, on Web 3, Meta, Microsoft, and Disney have retreated.
- Blur was a shocking surprise because this unknown platform until a few months ago recorded significantly higher volumes than OpenSea.

Trading Volumes on NFT Platforms

NFT trading volume saw a resurgence to \$4.5B, with Blur flipping OpenSea as the top NFT marketplace



TradFi

- Global players such as Fidelity have officially enabled their clients to invest in Bitcoin and Ethereum. The same applies to Swiss post, which recently made it possible for anyone to purchase Bitcoin and Ethereum.



- Azimut invests in Alps Blockchain



<https://www.forbes.com/sites/digital-assets/2023/03/16/amid-crypto-bank-crisis-fidelity-opens-bitcoin-ether-trading-for-retail-accounts/?sh=1be6e1aa1670>

<https://cryptonomist.ch/2023/03/28/azimut-investe-alps-blockchain/>

<https://www.coindesk.com/business/2023/04/05/swiss-government-owne>



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. On the left side, there is a white rectangular box containing three stacked white squares and the word 'REGULATION' in white capital letters.

REGULATION

Ether: Commodity or Security?

- Gary Gesler has stated that everything except Bitcoin is a security. He has been saying this for a long time now and has also stated that Bitcoin could be considered digital gold, which is definitely a commodity. According to him, almost everything else is certainly a security.
- Recently, he has also clarified the SEC's position on Ether: since staking is now possible, it is considered a security as it offers a return.
- Therefore, a dispute has arisen as the CEO of the CFTC believes that Ethereum is, in fact, a commodity.



CFTC Chairman
Rostin Behnam



SEC Chairman Gary Gensler

<https://www.coindesk.com/layer2/2022/06/28/secs-gensler-reiterates-bitcoin-alone-is-a-commodity-is-he-right/>

<https://cryptoslate.com/sec-chair-gensler-confirms-everything-other-than-bitcoin-is-a-security-implications-and-analysis/>

<https://www.coindesk.com/policy/2023/03/28/us-cftc-chief-behnam-reinforces-view-of-ether-as-commodity>

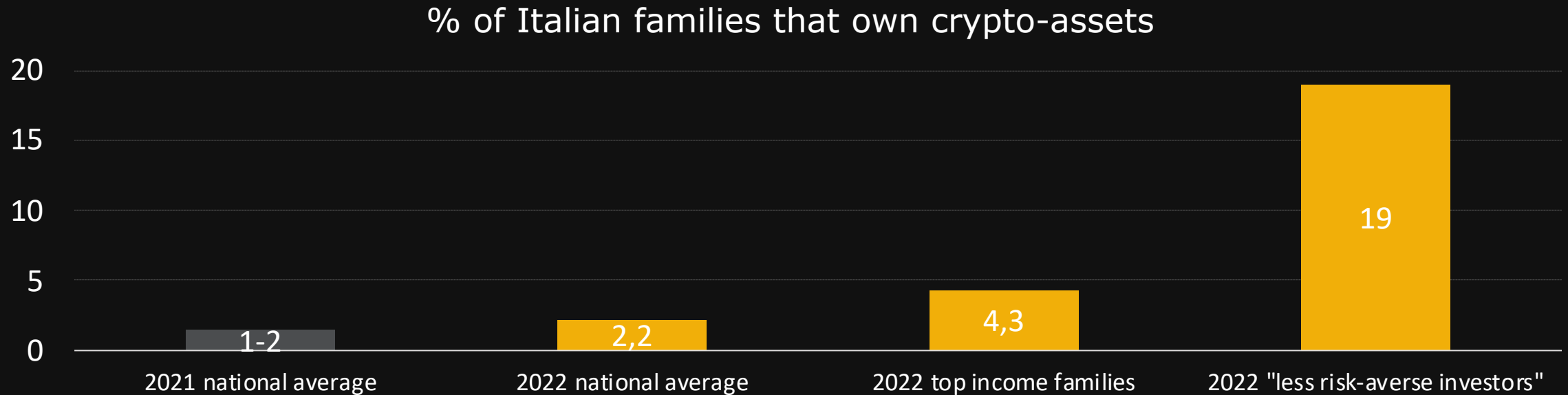
EU: MiCAr and DORA

With a one-year delay from the vote, this regulation will become operational if approved in April, 18 months later, thus towards the end of 2024.



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

Italian Crypto Wealth

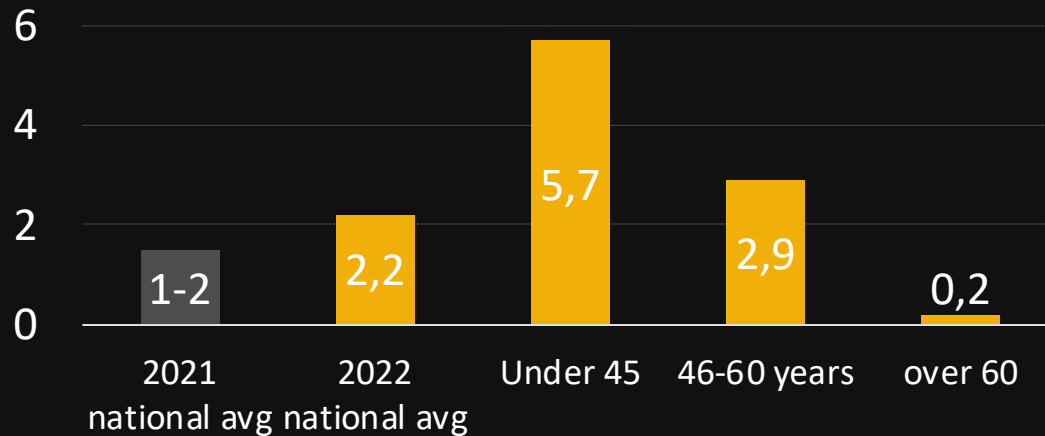


The January economic bulletin by the Bank of Italy shows that if in 2021 only roughly 1/2% of Italian households had an investment in crypto assets, in 2022 this threshold has doubled to 2.2%. Furthermore, drilling down, if we look at top-income households, i.e., those with the highest incomes, the percentage of households that have invested in crypto grows to 4.3%. And even if we focus on investors less averse to risk, therefore more inclined to take financial risks, the percentage rises to 19%.

Source: Bollettino Economico Banca d'Italia January 2023, based on June 2022 survey

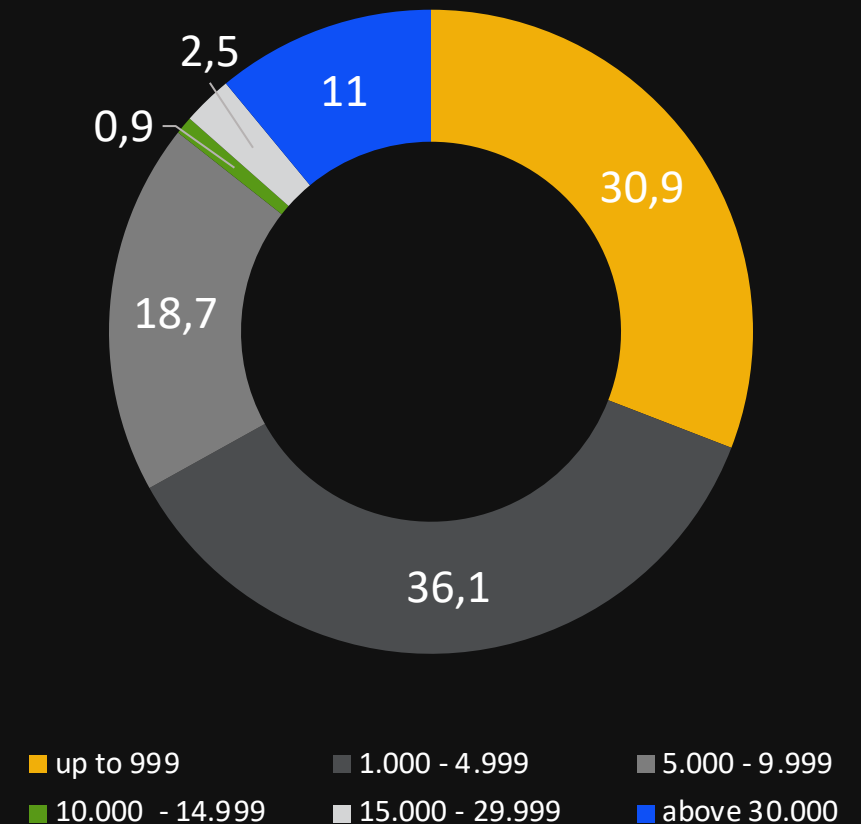
Italian Crypto Investors: a Profile

% of families that own crypto-assets



From a demographic perspective, it is noticeable that the highest numbers are recorded among very young people: 5.7% of those under 45 have invested in cryptocurrency, while 3% of those between 45 and 60 have invested in cryptocurrency. Even those over 60 have a component in cryptocurrency. Furthermore, the amounts invested, accounting for approximately 13-14-15% of the market, exceed 15,000 euros, so they are not exactly negligible.

% by € amount invested



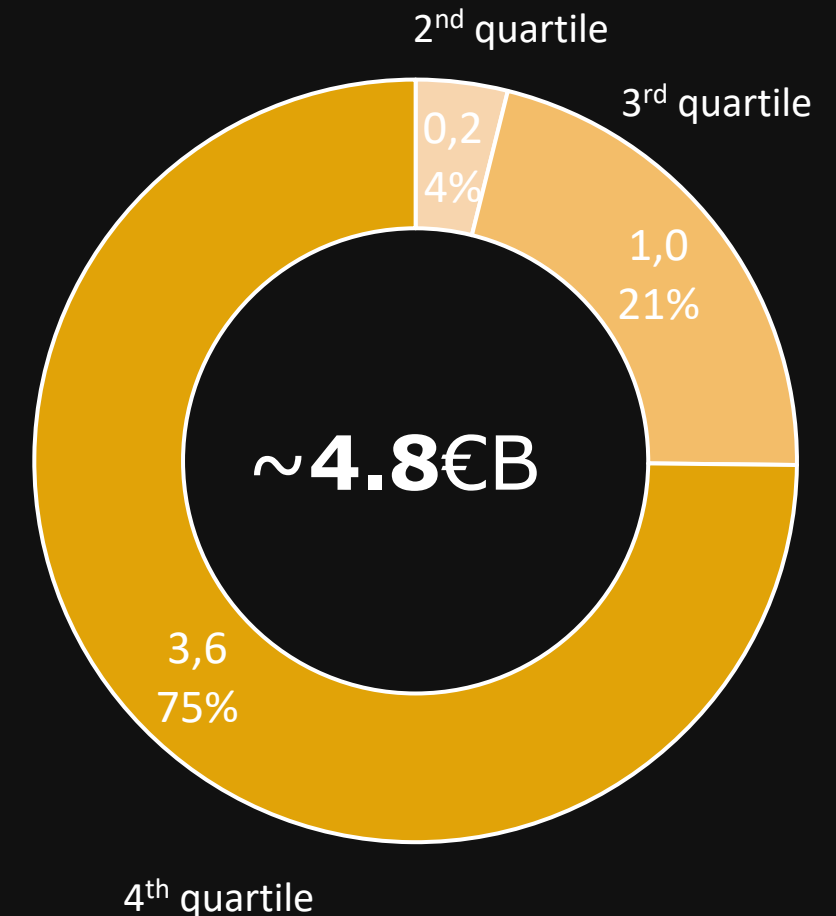
Source: Bollettino Economico Banca d'Italia January 2023, based on June 2022 survey

A Market Worth About €4.8B

A market size estimate

Income Quartile	N. families	% owners	Avg assets est. €
1 st quartile (low income)	6.4M	0%	0
2 nd quartile	6.4M	0.83%	~3,500
3 rd quartile	6.4M	2.65%	~6,000
4 th quartile (high income)	6.4M	4.30%	~13,000
Total	25.7M	2.20%	~8,500

These are not Bank of Italy numbers, but it can be inferred from the Bank of Italy numbers that the crypto assets of Italians are already almost 5 billion euros today. A significant share that would like to be served properly: for example, the private banking in Italy currently holds 1,000 billion euros in assets. Imagining that not even 1% of it enters crypto becomes really implausible.

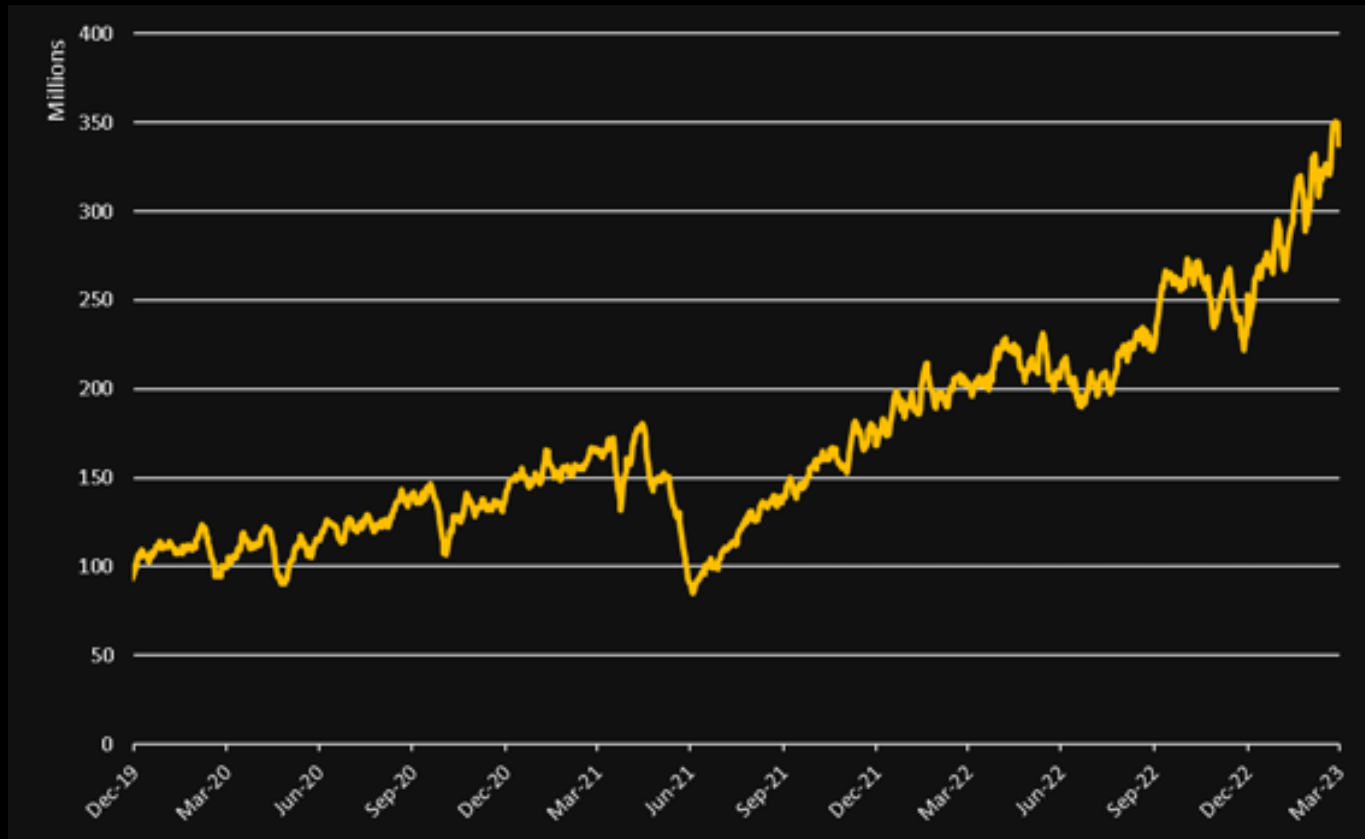


Source: DGI estimate on Bollettino Economico Banca d'Italia January 2023

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 entire graphic is rendered in a lighter shade of orange than the background.

TECHNOLOGY

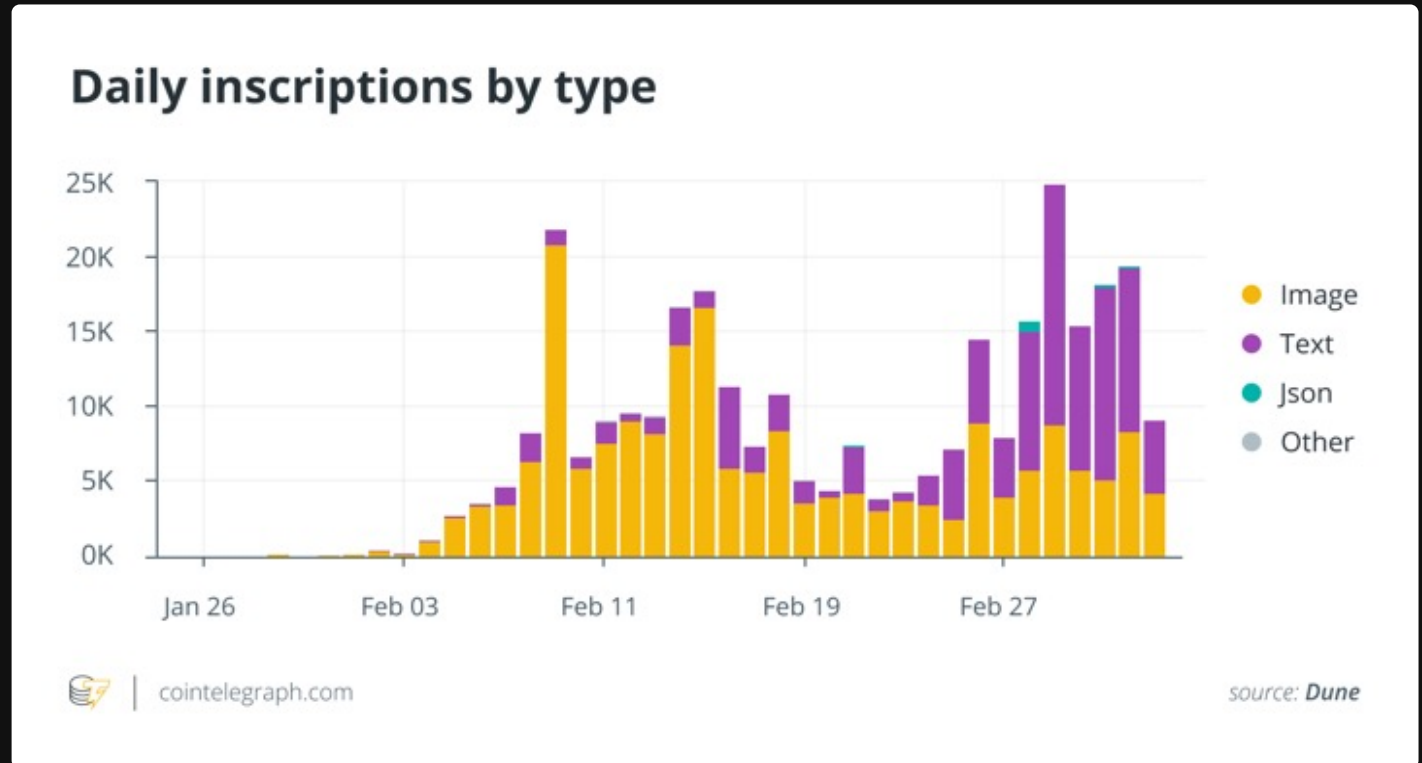
Mining: New Hash Rate All-Time High



There is a new hashrate on the Bitcoin network. So, whether the market rises or falls, the computational power that secures the Bitcoin network continues to grow. The only time a significant decrease was observed was when mining was prohibited in China. Another event, another apocalyptic event from which the end of the crypto world was expected. In reality, nothing happened. Miners moved abroad, and everything continues as before.

Ordinals: NFTs on Bitcoin?

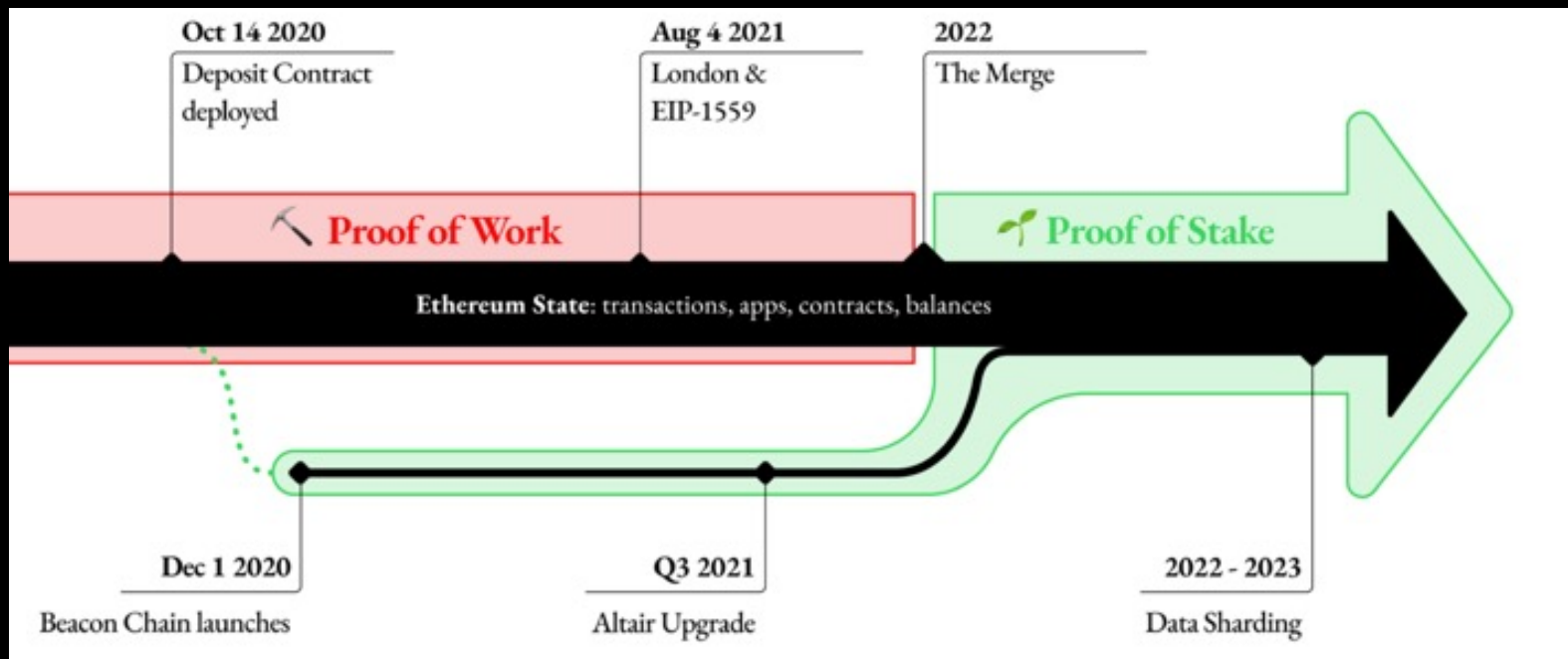
A way has been found to associate images, videos, and text by inserting a photo, a JPEG, or a music track directly into the blockchain. The problem is that in this case the data is truly stored on-chain on the Bitcoin blockchain, while Ethereum's NFTs typically point to digital artifacts that exist elsewhere.



<https://cointelegraph.com/explained/what-are-bitcoin-ordinals>

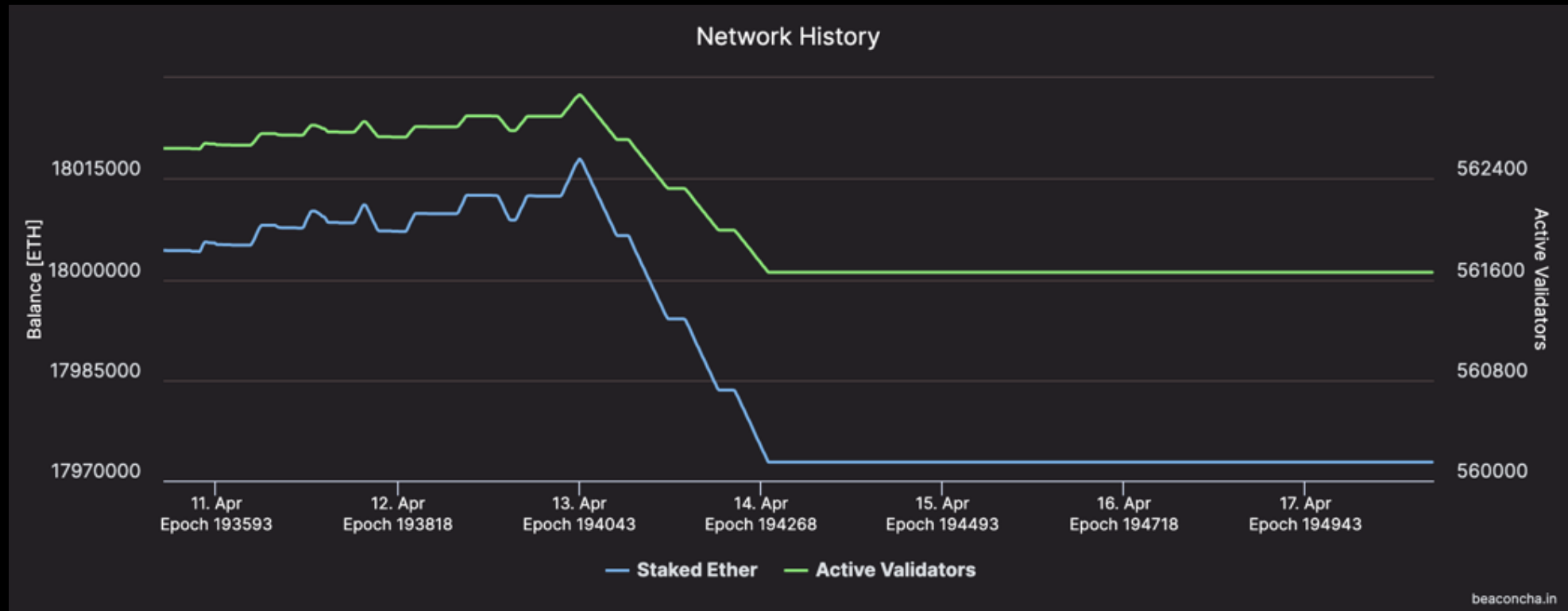
Shanghai: ETH Staking Withdrawals (1/2)

- On April 13th, the completion of the Ethereum network's transition to Proof of Stake was achieved with the upgrade called Shanghai
- It enables withdrawals for users who have “staked” their ETH to secure and validate transactions on the Beacon Blockchain



Shangai: ETH Staking Withdrawals (2/2)

- It was thought that there would be an avalanche of sales, but it didn't happen at all. There were certainly significant withdrawals, but essentially negligible in terms of the daily volumes



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.

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- **December 14-15**



dgi.io/workshop

Crypto Asset Lab Conference 2023

- Crypto Asset Lab is a joint initiative of DGI and University of Milano-Bicocca
- Connecting researchers, businesses, regulators and institutions to accelerate knowledge sharing and scientific research in the fields of crypto and digital assets

www.cryptoassetlab.org



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in live streaming

Con **Ferdinando M. Ametrano**
Amministratore delegato CheckSig
Direttore scientifico DGI

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 SPEAKER

Guest Speaker



Alberto Grisoni

Direttore di AziendaBanca

"Tifosi e cronisti: il mondo crypto sui media"



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