



DIGITAL GOLD INSTITUTE

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

UNIVERSITÀ DEGLI STUDI
DI MILANO
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





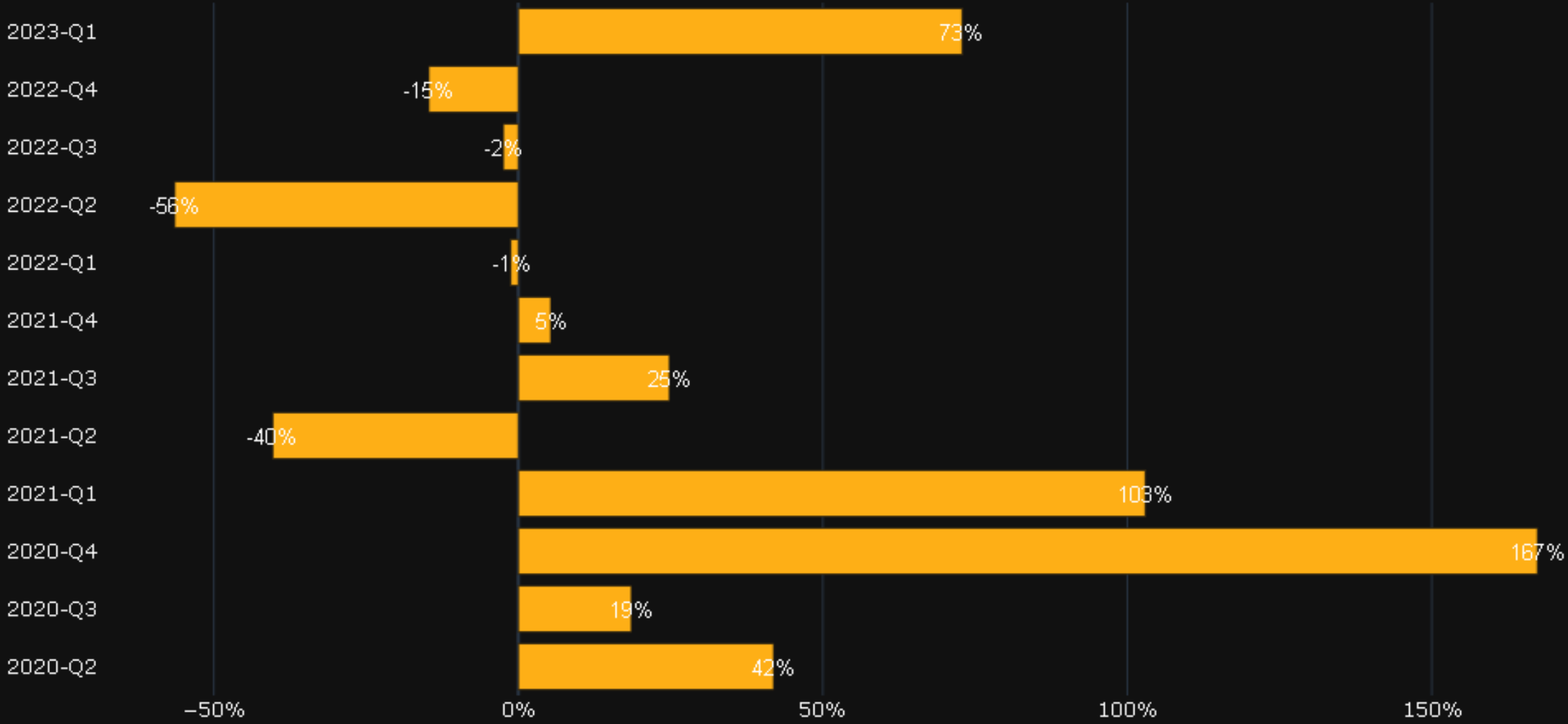
Bitcoin Performance 2023Q1 +73%



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



Bitcoin Quarterly Performances





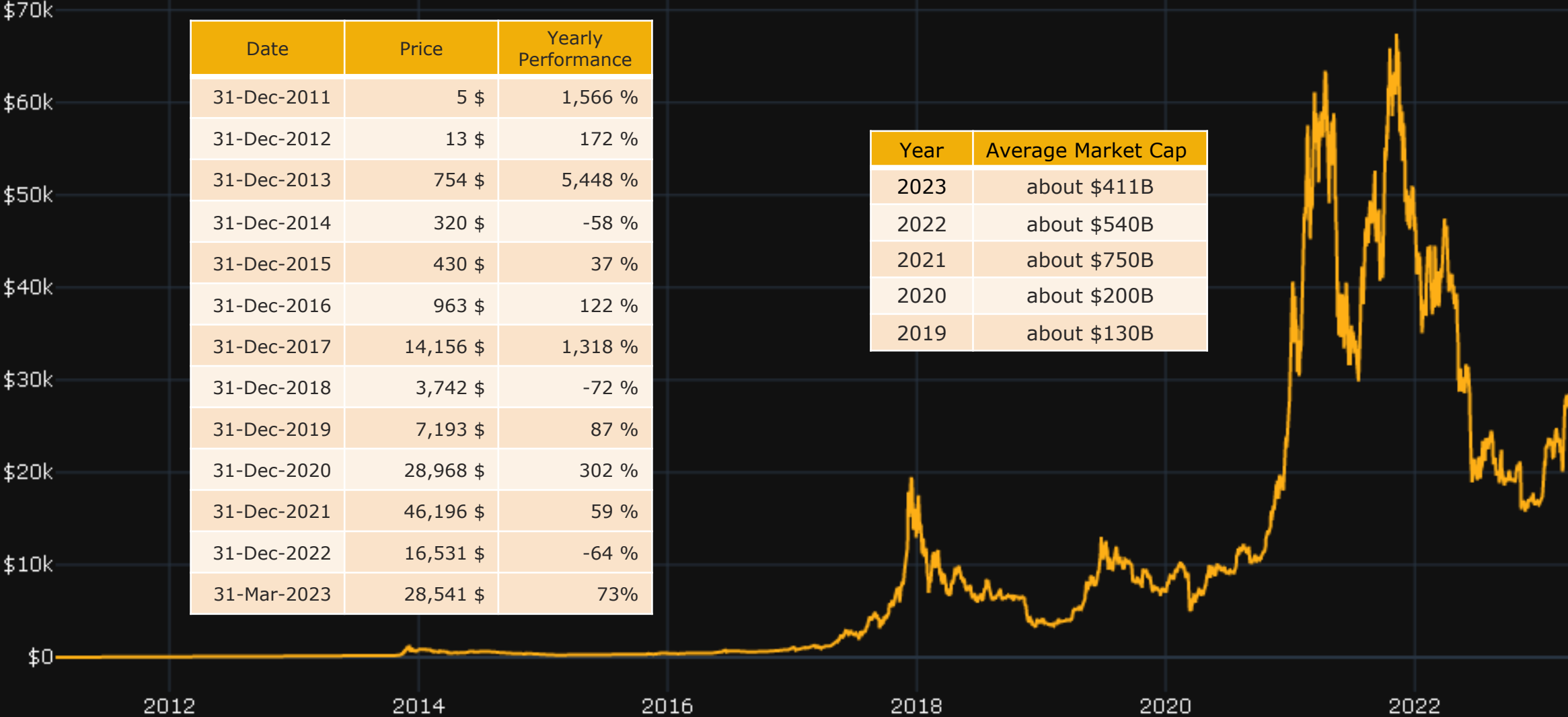
Bitcoin Performance Last 12M -37%



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



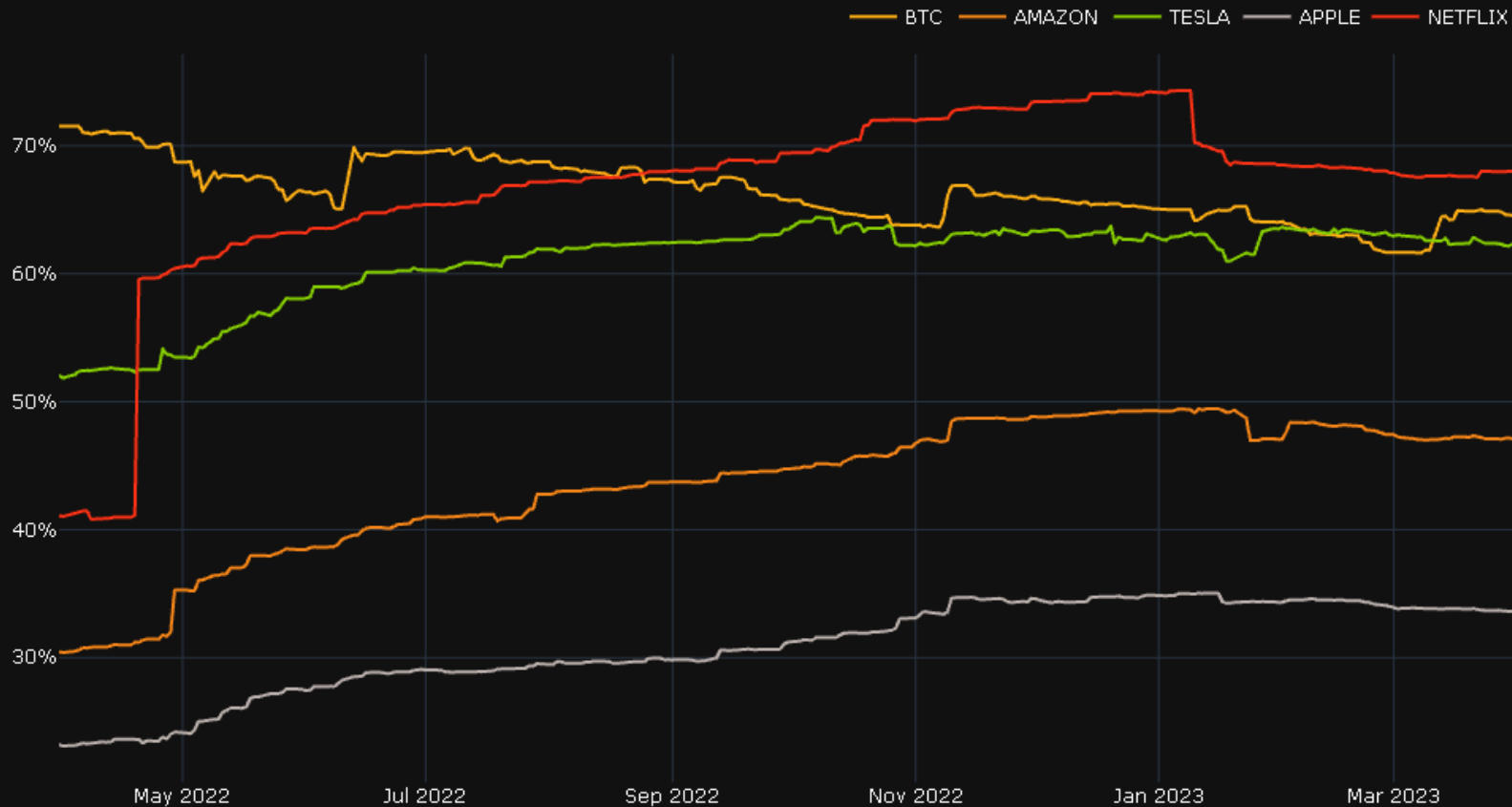
Bitcoin Yearly Performances





Volatility of Best Performing Assets

252 Days Rolling Window



Bitcoin volatility 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 Bitcoin volatility has decreased compared to the volatility of Netflix and has also been below the volatility of Tesla for a certain period

Asset Class 1Y Correlation Matrix

1Y

Corr = 100%

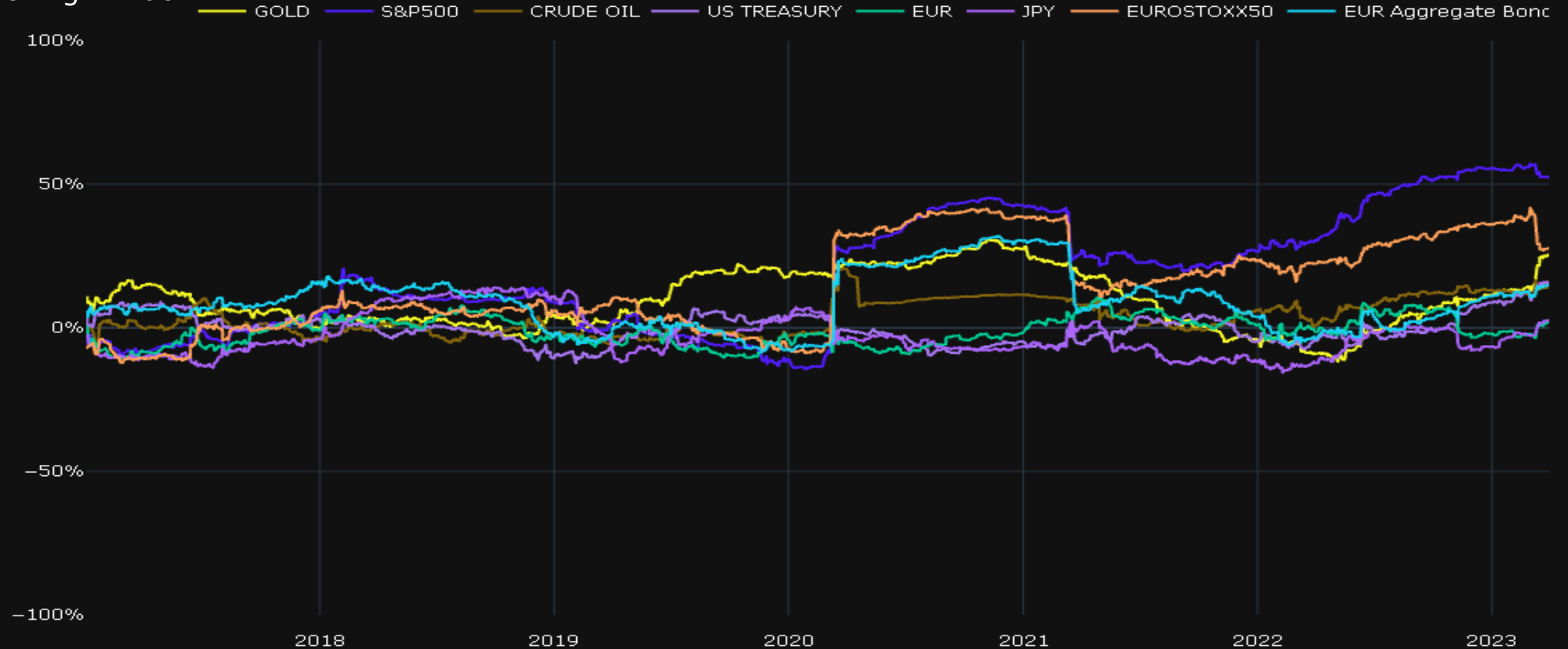
Corr = -100%

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 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 3Y Correlation Matrix

3Y

Corr = 100%

Corr = -100%

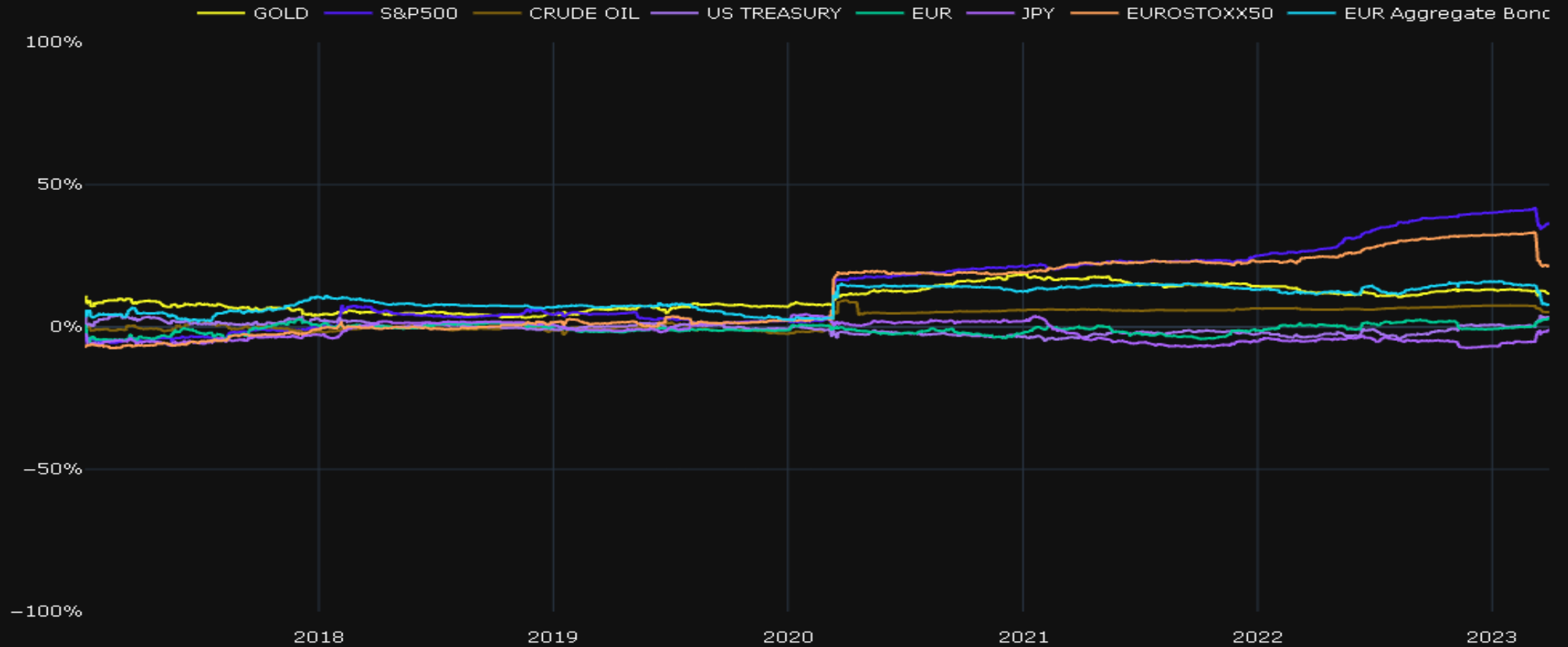
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CORN	6.56%	12.61%	16.04%	11.48%	100.00%										
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GBP	-1.27%	4.49%	6.26%	0.72%	0.24%	70.86%	100.00%								
JPY	-1.10%	2.48%	6.63%	-1.03%	-2.08%	42.31%	41.88%	100.00%							
CHF	1.41%	11.40%	6.24%	-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%	
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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

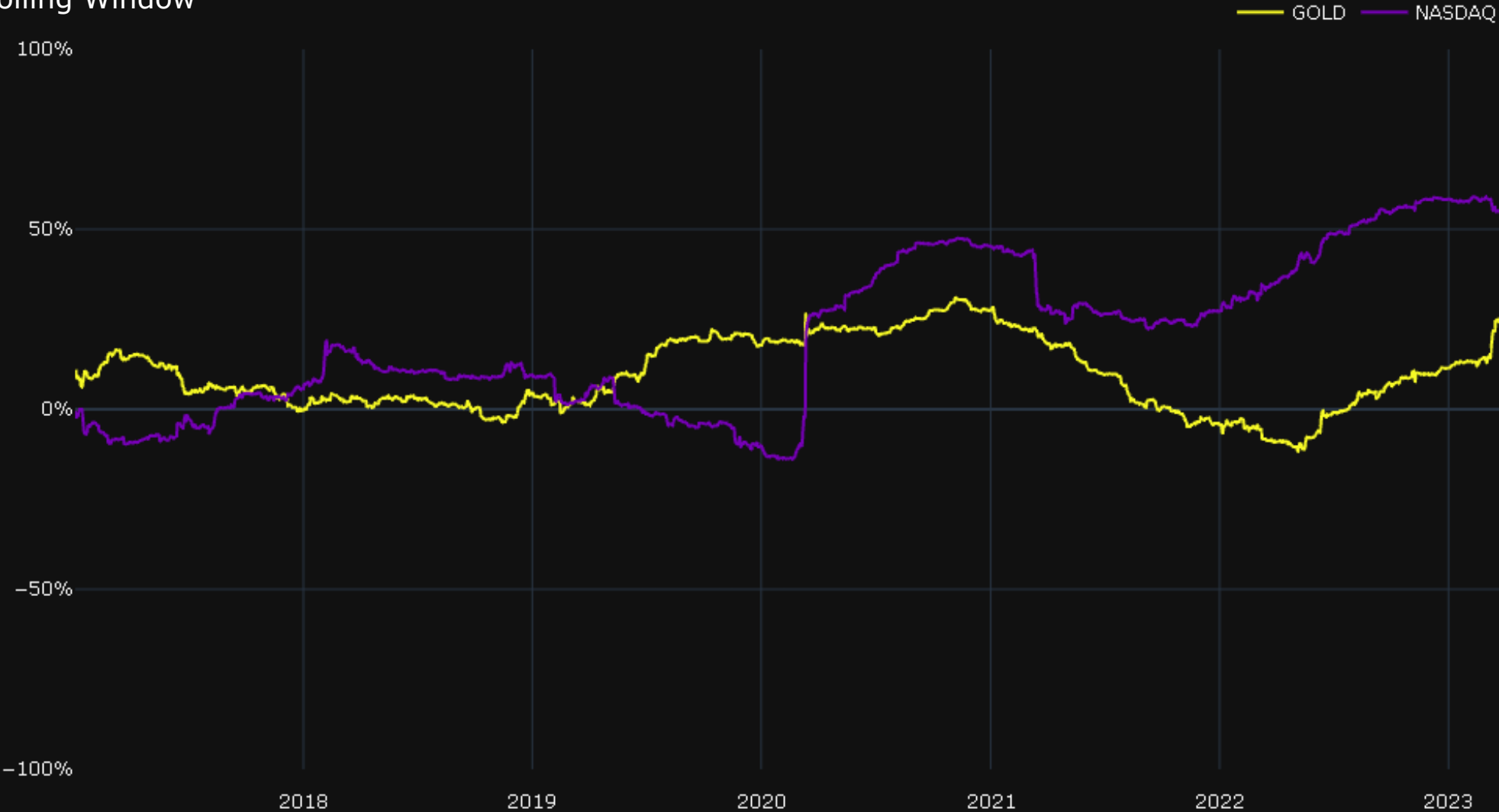
1Q Rolling Window





Gold/Nasdaq 1Y Correlation With Bitcoin

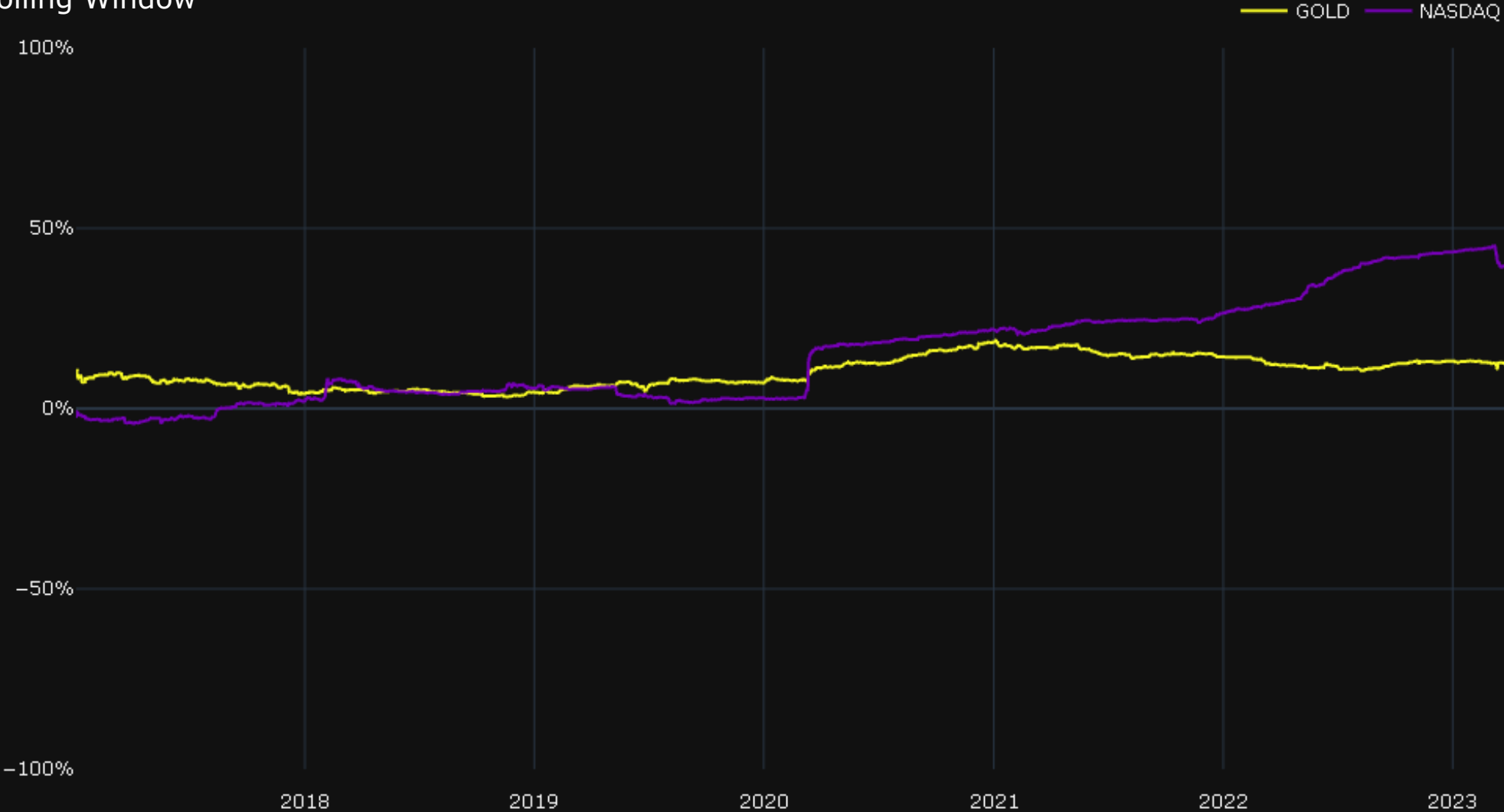
1Y Rolling Window





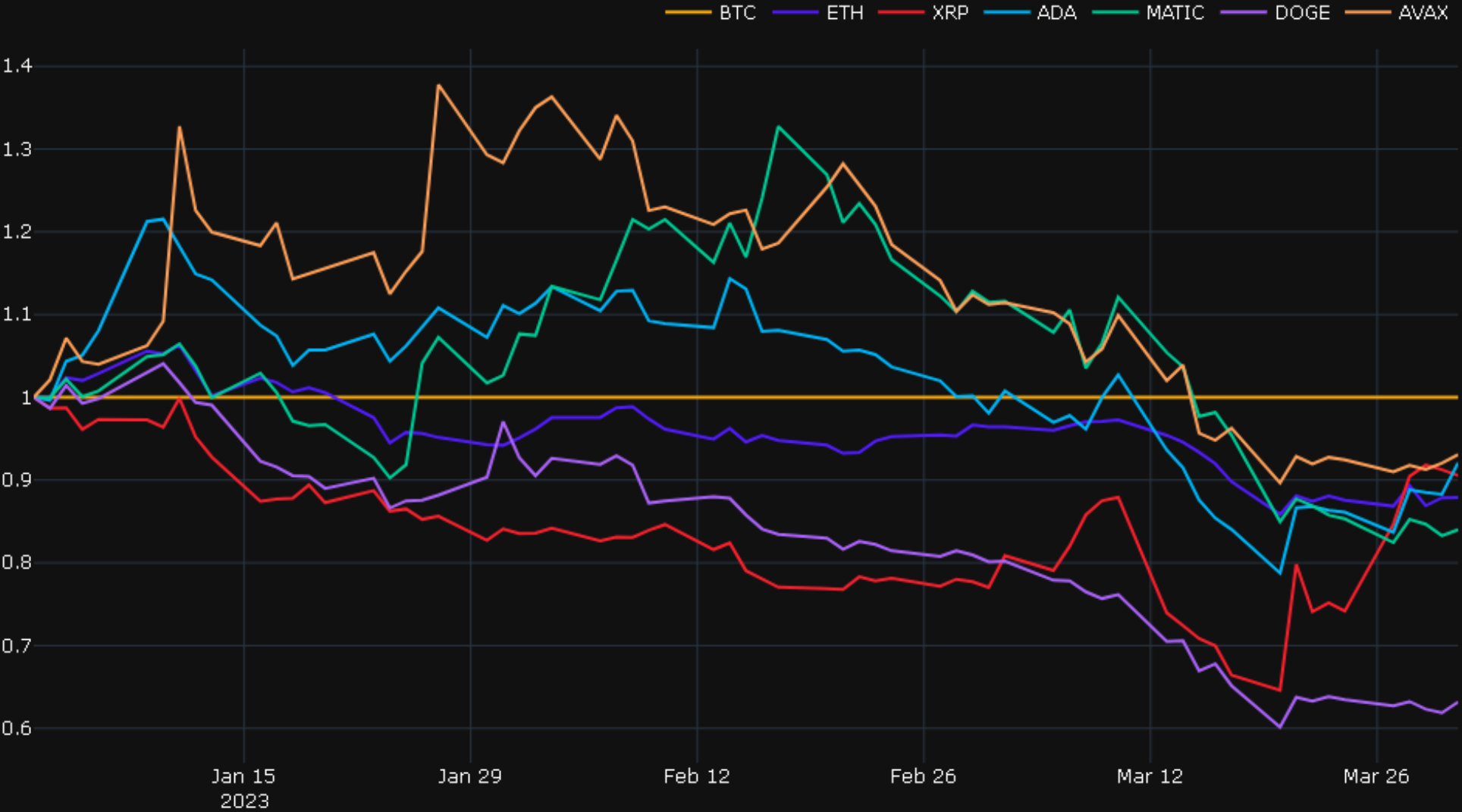
Gold/Nasdaq 3Y Correlation With Bitcoin

3Y Rolling Window





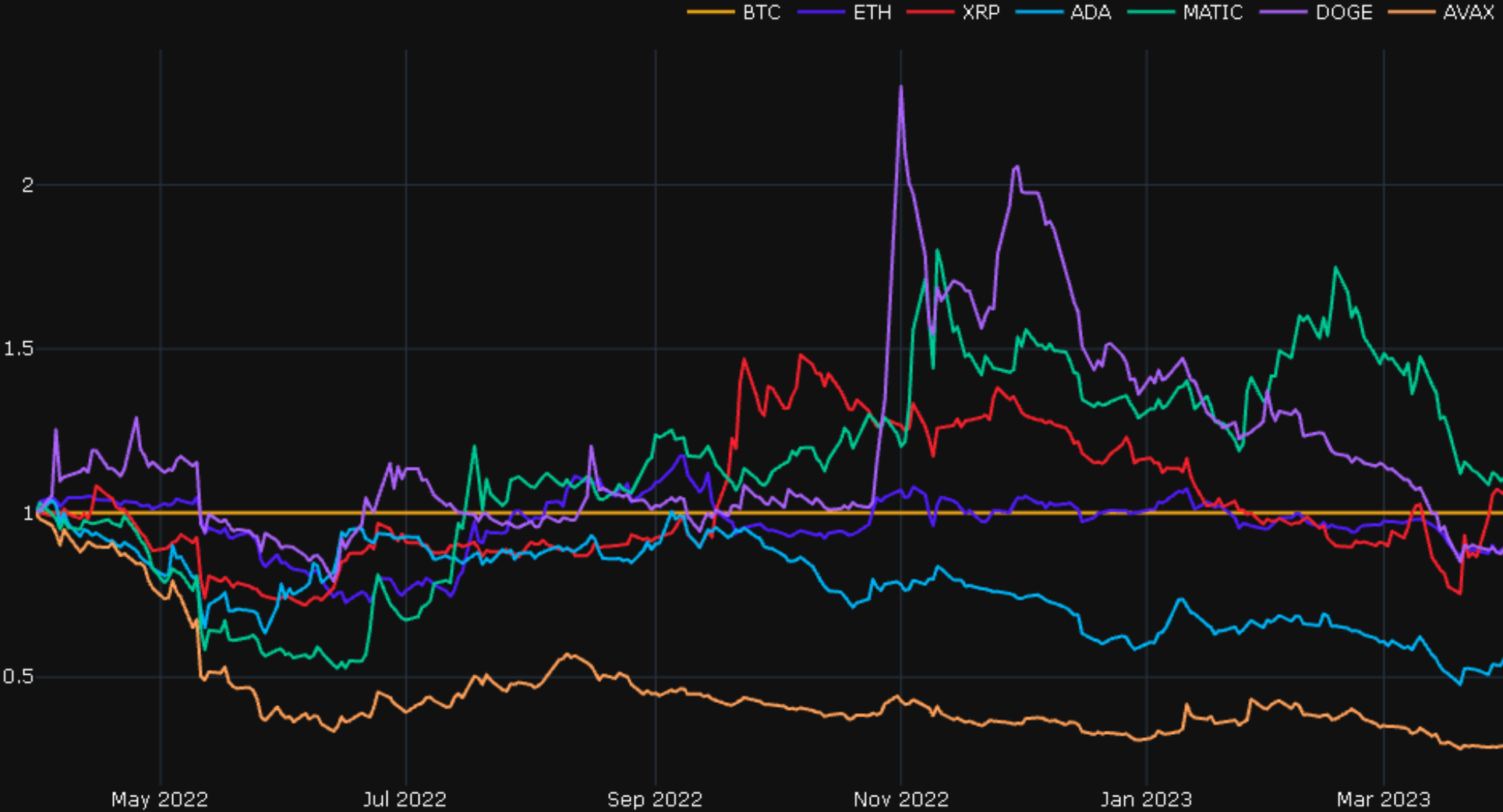
Performance Altcoins vs Bitcoin (2023 Q1)



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



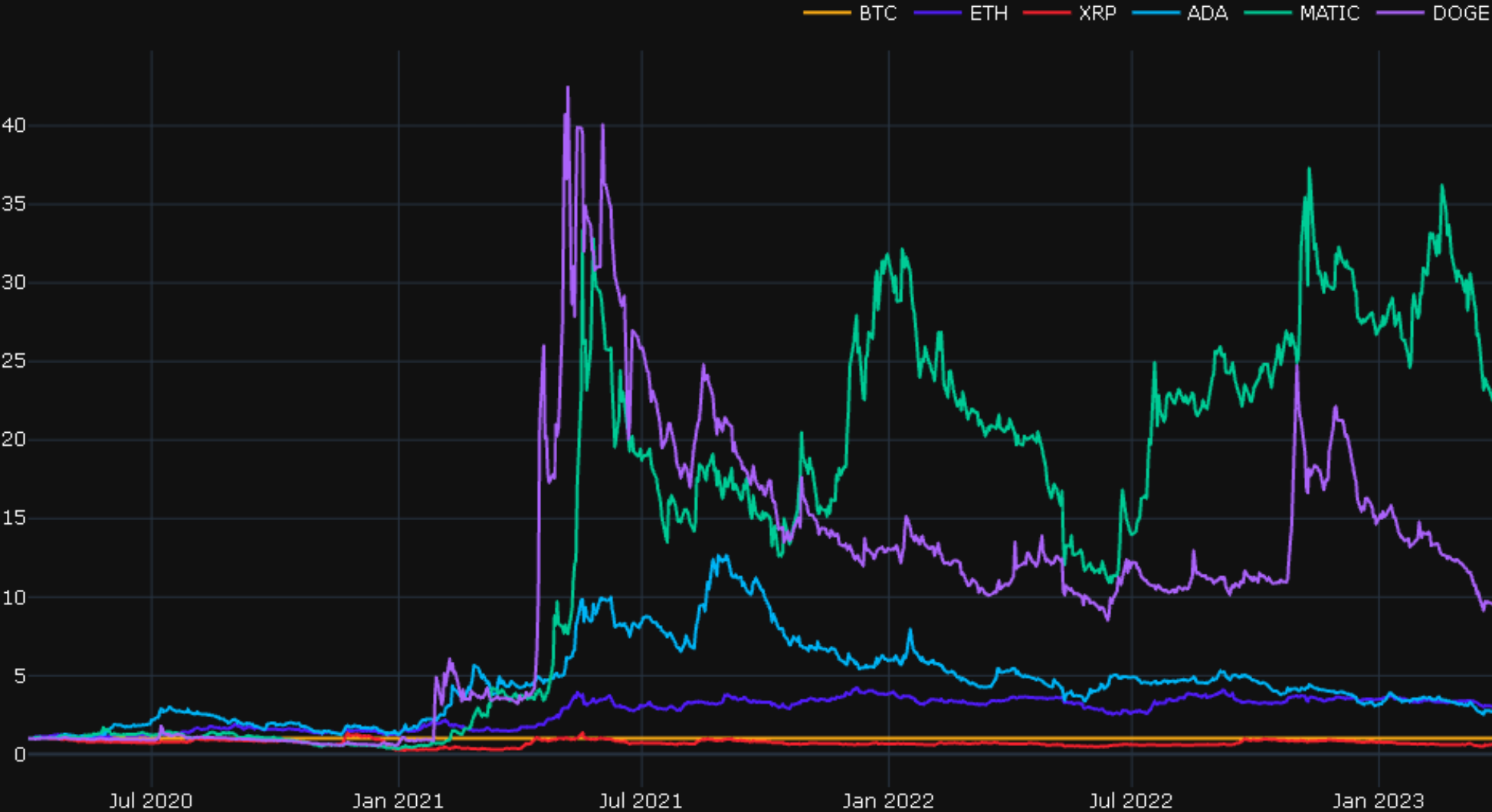
Performance Altcoins vs Bitcoin (Last 12M)



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



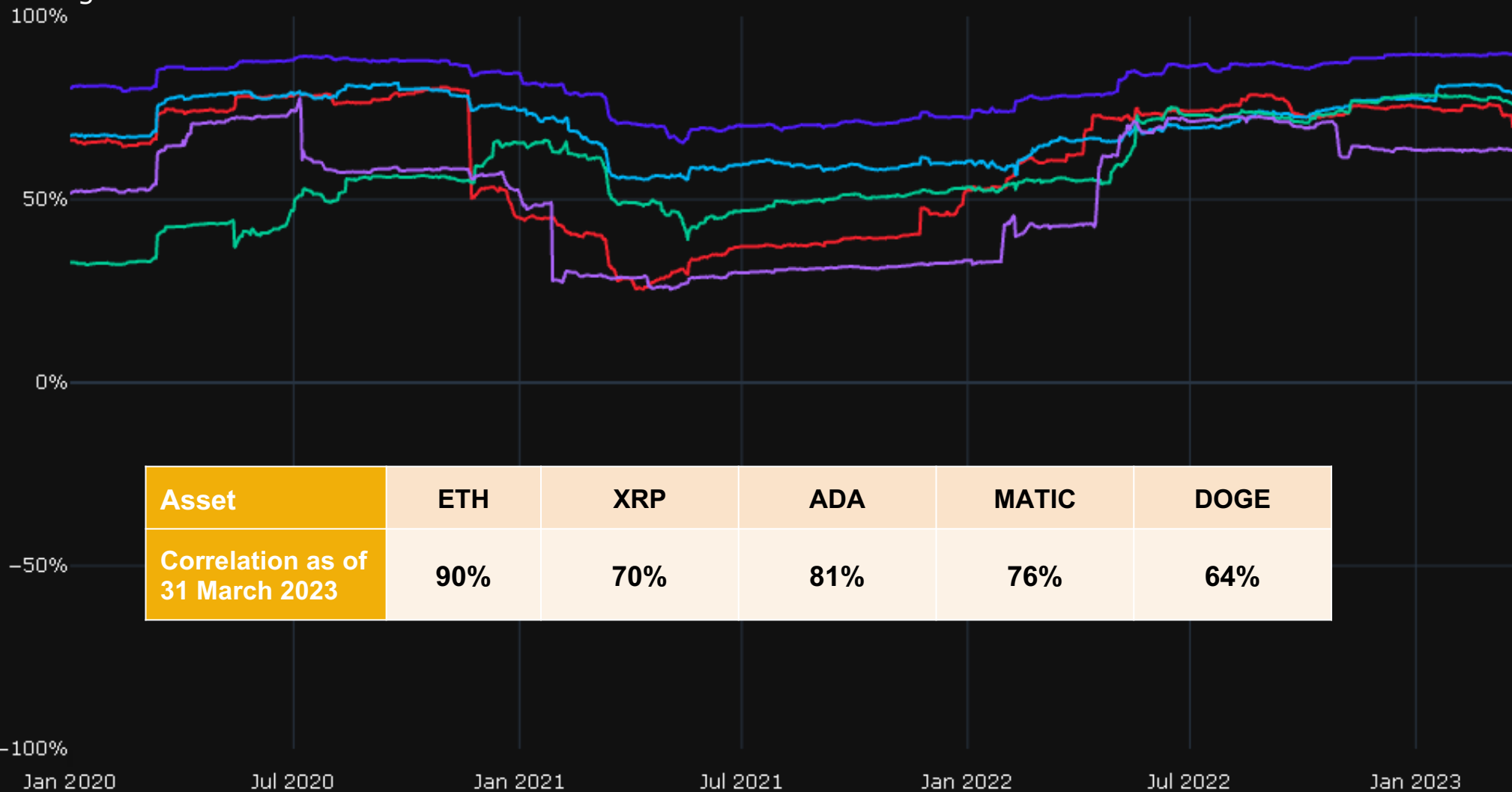
Performance Altcoins vs Bitcoin (Last 3Y)



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

Altcoin 1Y Correlation With Bitcoin

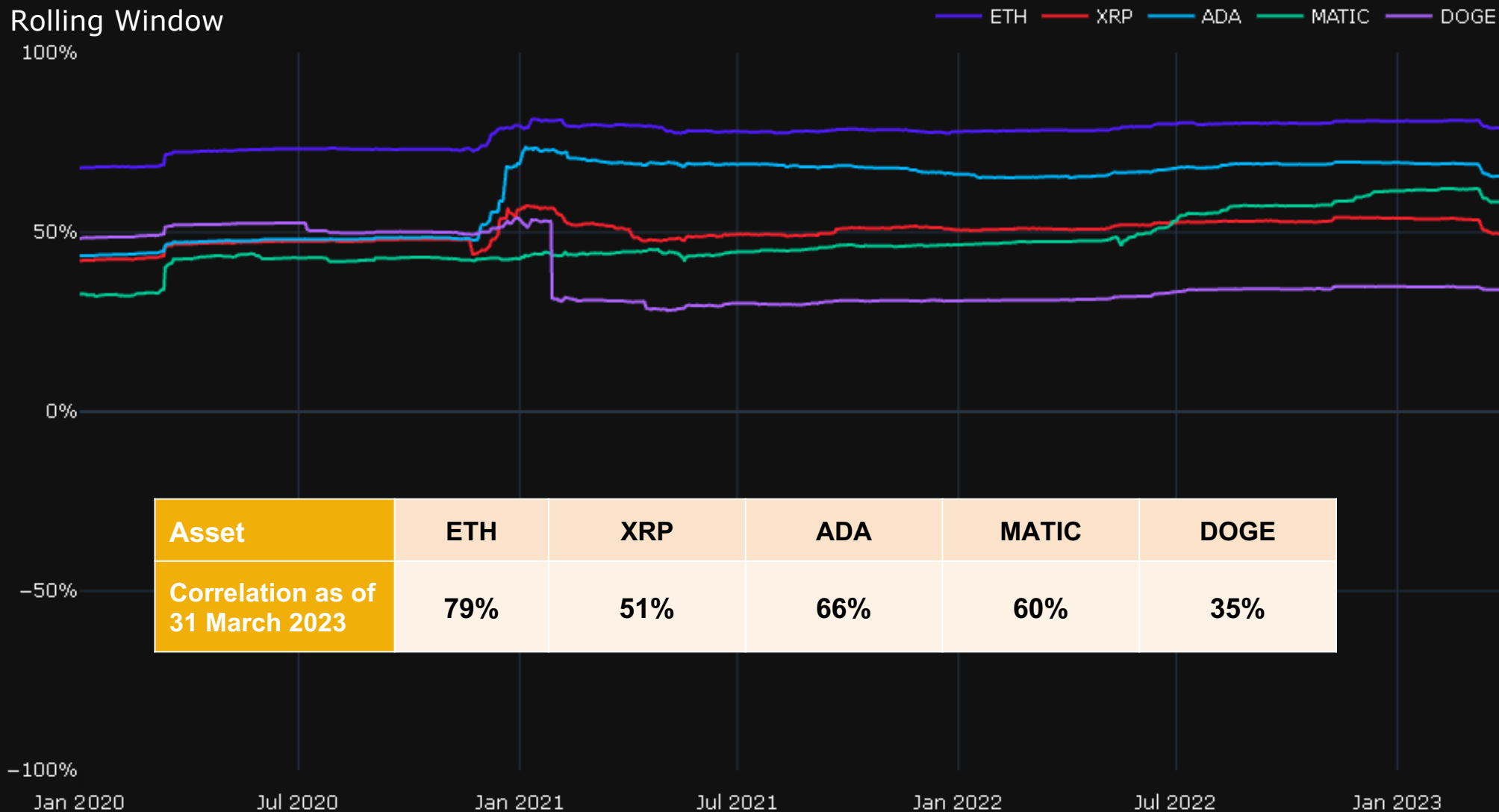
1Y Rolling Window





Altcoin 3Y Correlation With Bitcoin

3Y Rolling Window

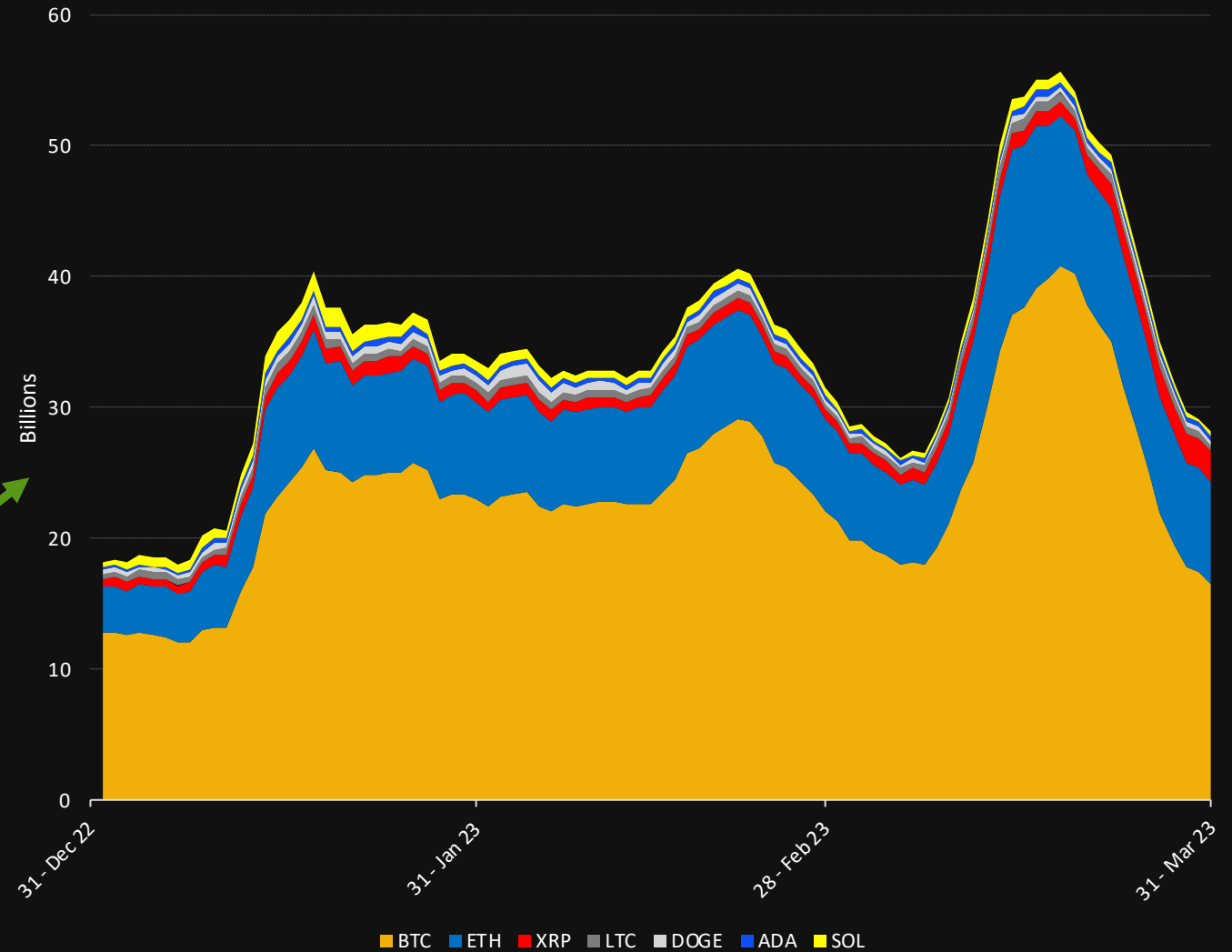
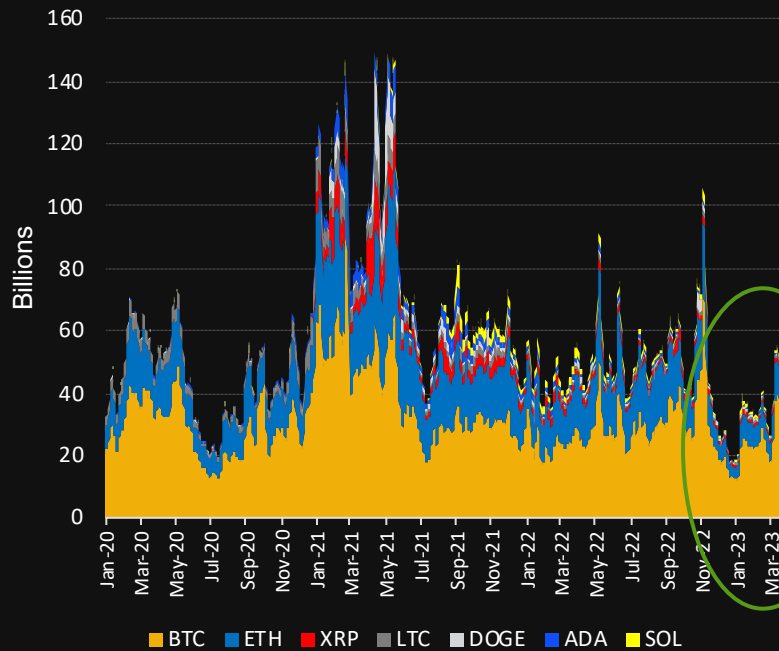




Trading Volume

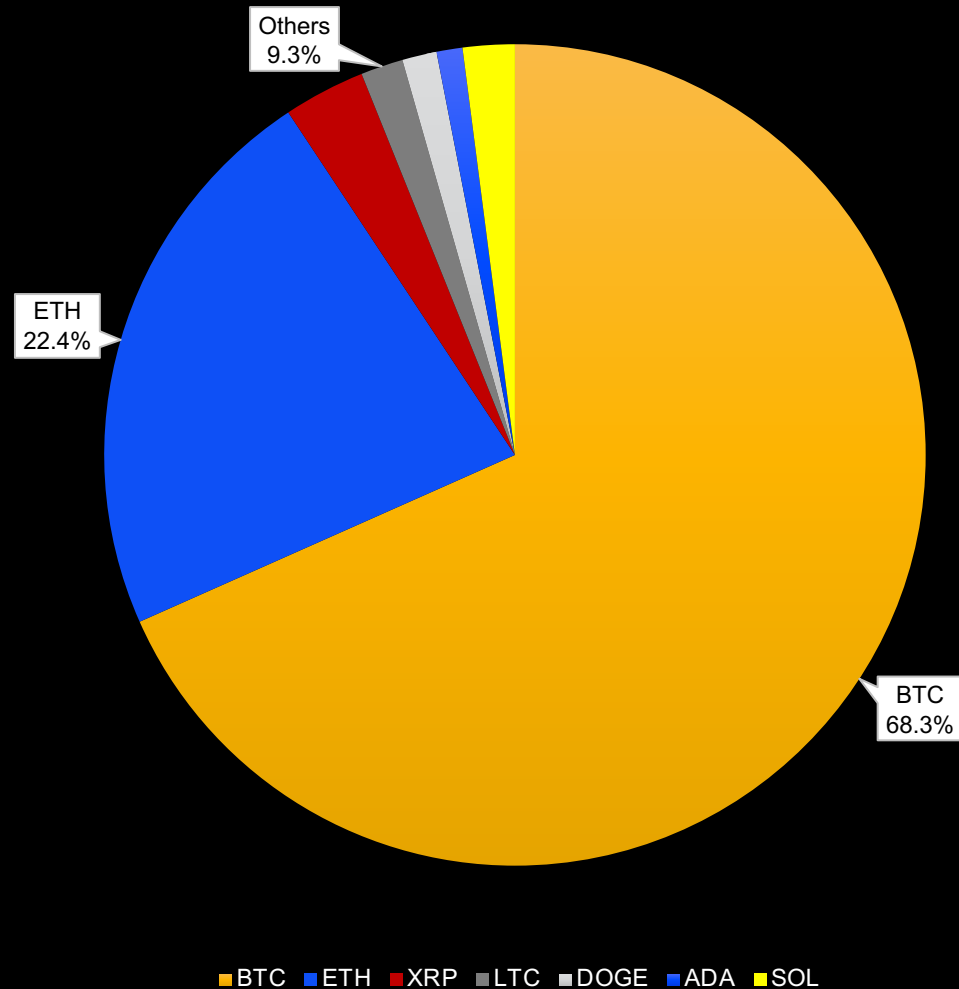
Trading Volume 2023Q1

Trading Volume 2020 - 2023



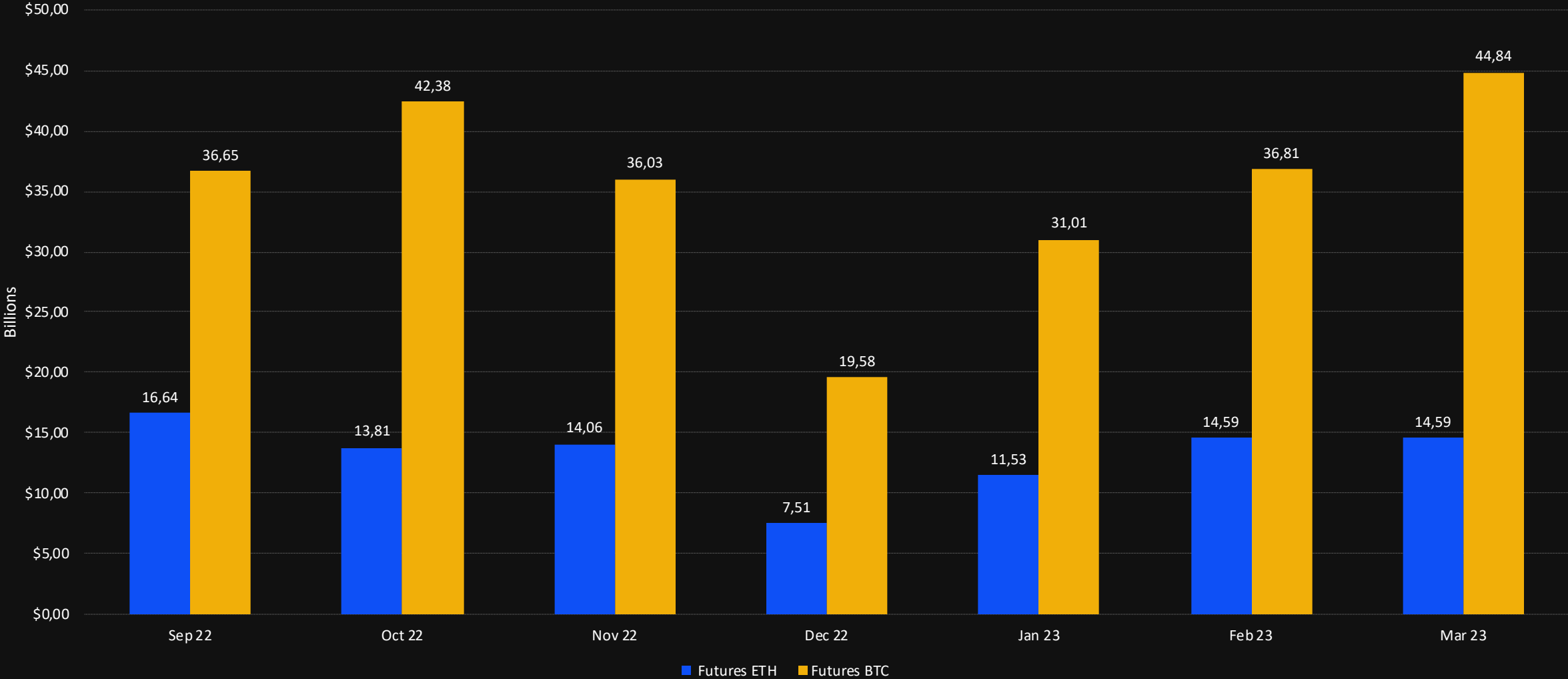


Average Trading Volume 2023Q1



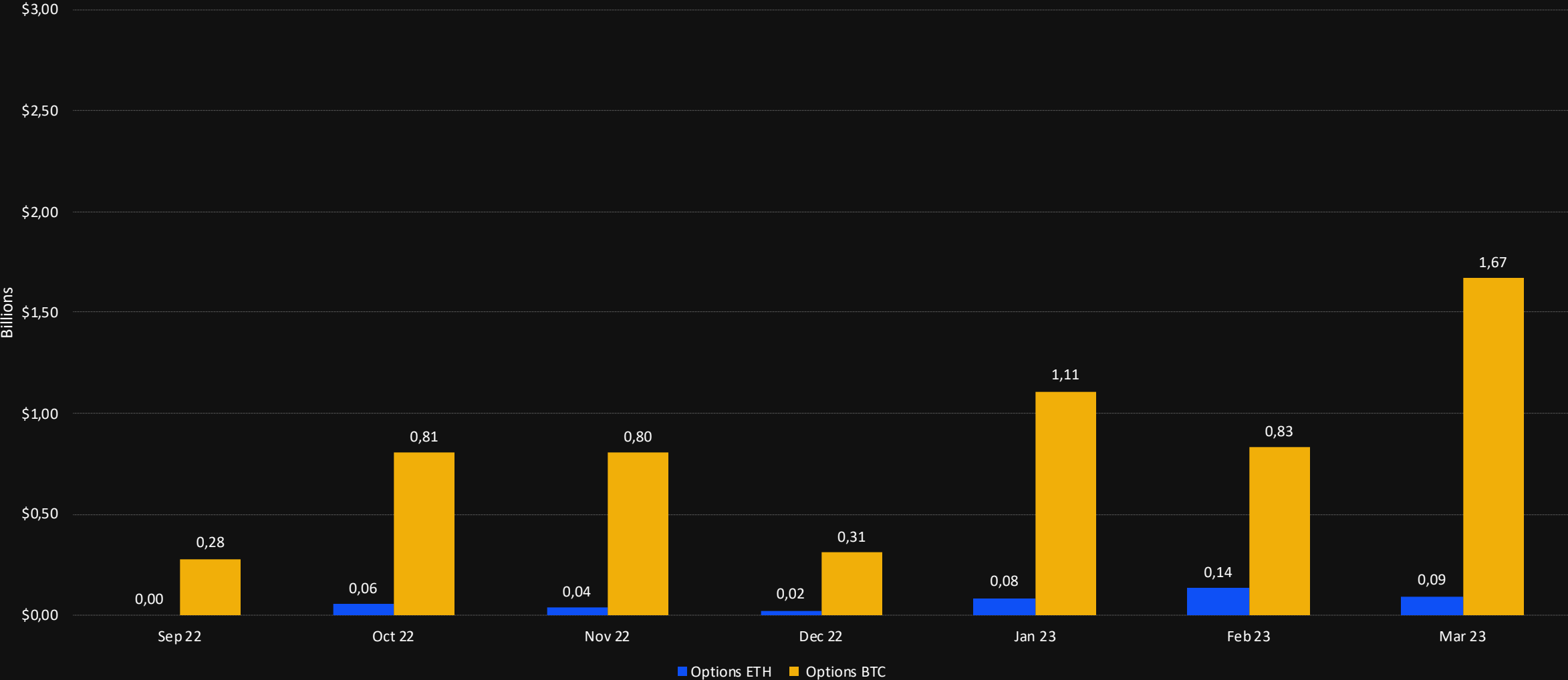


CME Listed Futures





CME Listed Options





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 reliable and transparent company. It had \$3 billion with SVB, this caused the price of USDC to reach 0.88 cents. It regained the 1.0 "peg" once the US government reassured that all deposits were covered.
- Anyway, as a result, Tether has regained stablecoin market leadership. Lack of transparency is apparently winning.

<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



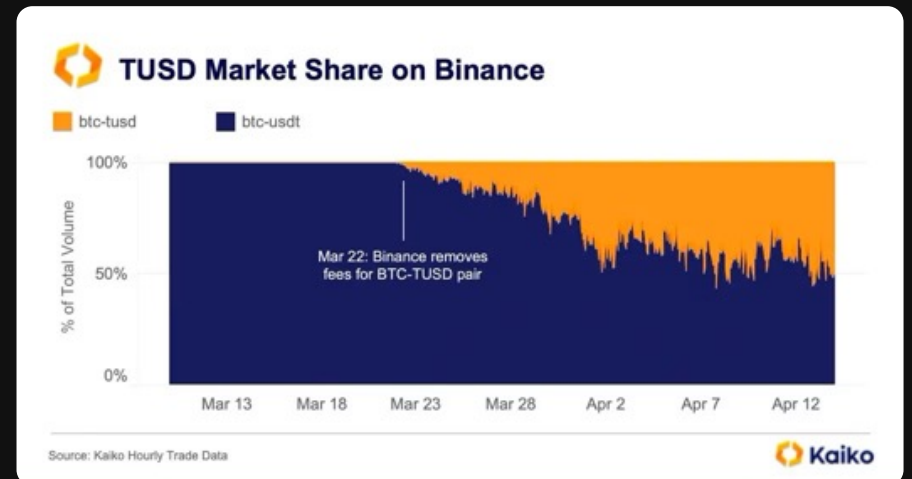
Binance USD to True USD

- 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/>

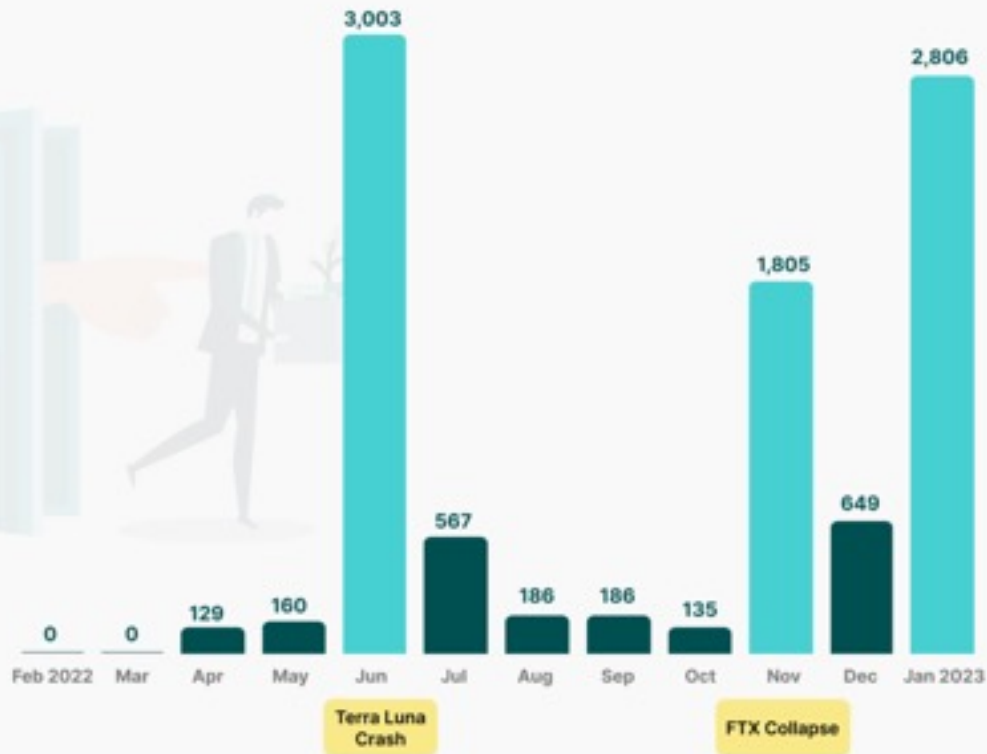
<https://www.coindesk.com/business/paxos-to-stop-minting-stablecoin-busd-following-regulatory-action/>



Crypto Layoffs

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

Layoffs from Cryptocurrency Companies in the Past 12 Months



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/>

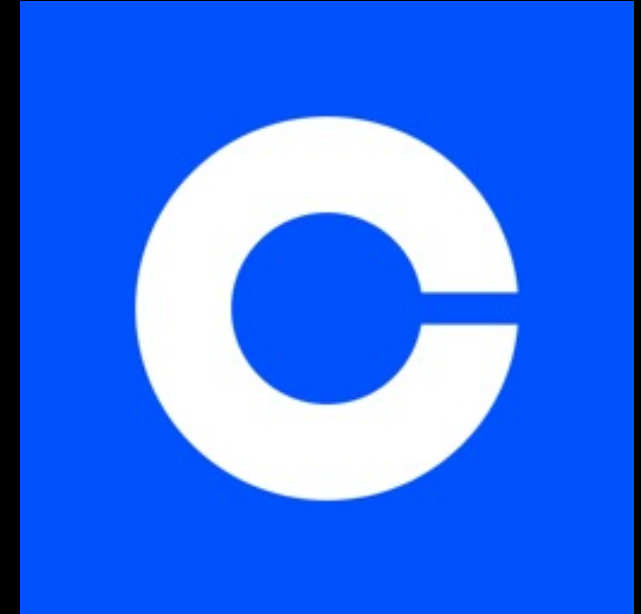


Coinbase

- 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/>



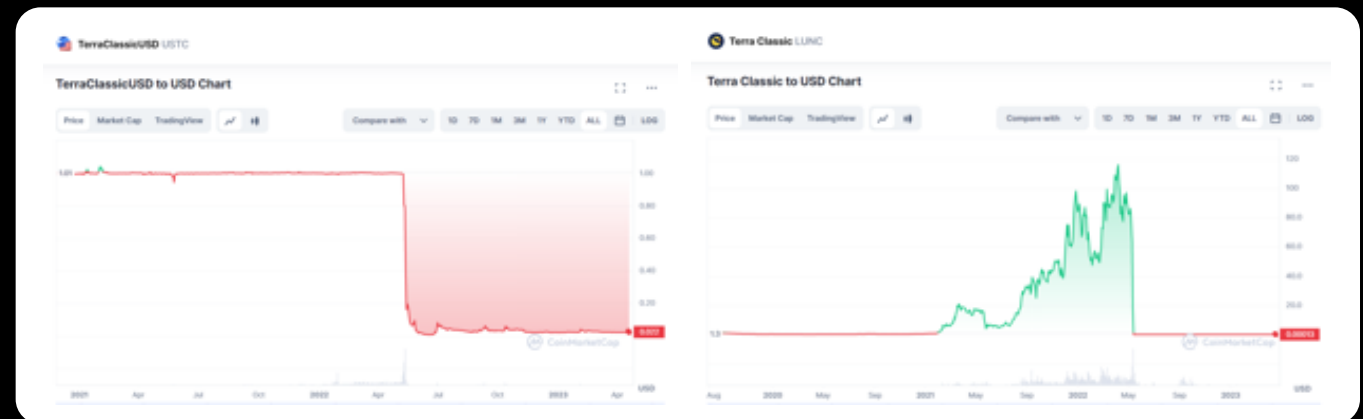
Do Kwon Arrested



- 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/>

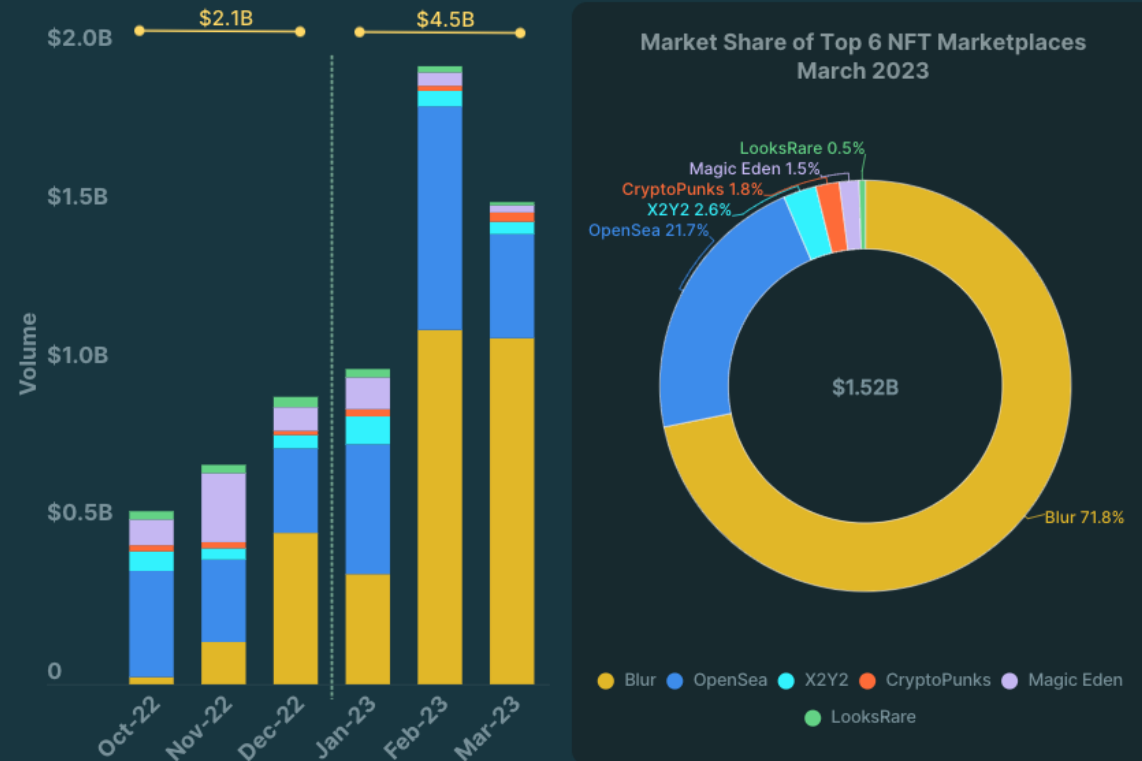


NFT and Web3

- 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>





REGULATION





Ether: Commodity or Security?

- Gary Gensler 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.



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>



CFTC Chairman
Rostin Behnam

EU: MiCAr and DORA

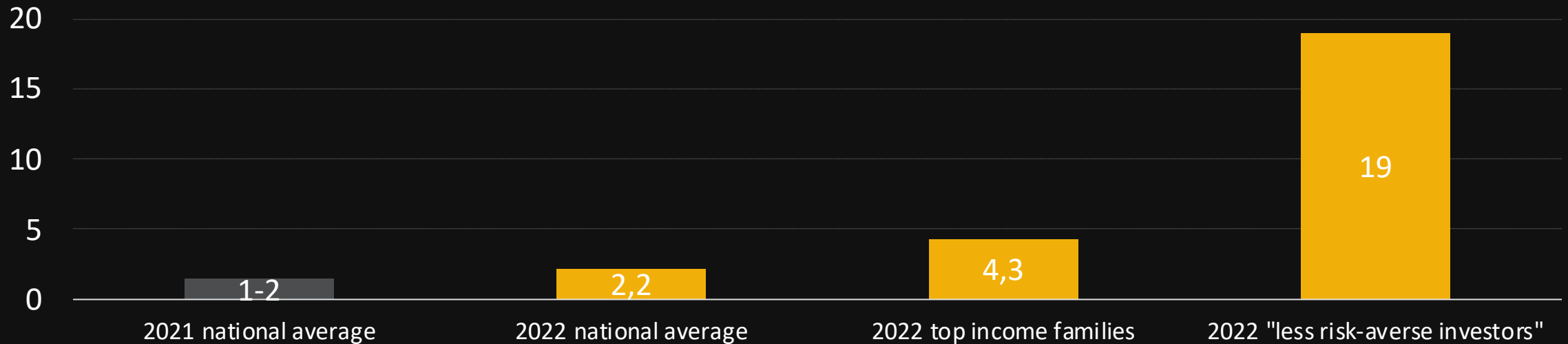
With a one-year delay from the vote, this regulation will become operational if approved in April, 18 months later, thus towards the end of 2024.



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

Italian Crypto Wealth

% of Italian families that own crypto-assets



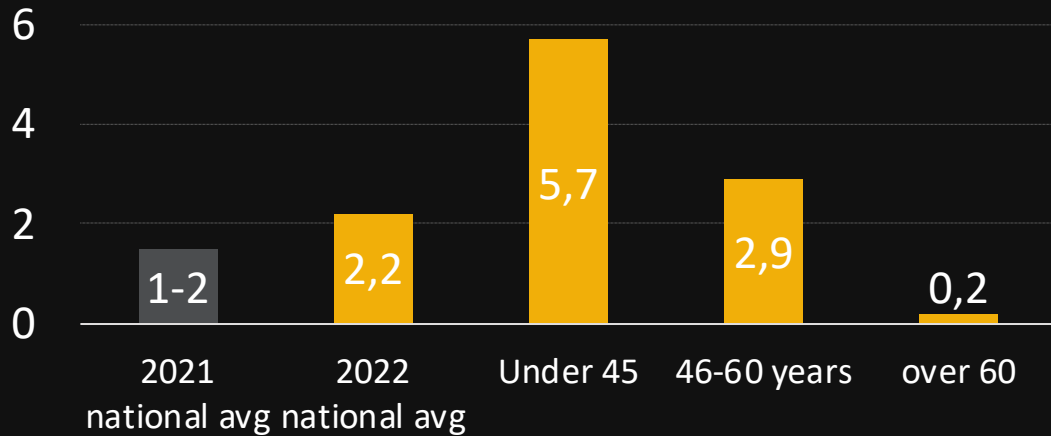
The January economic bulletin by the Bank of Italy shows that if in 2021 only roughly 1/2% of Italian households had an investment in crypto assets, in 2022 this threshold has doubled to 2.2%. Furthermore, drilling down, if we look at top-income households, i.e., those with the highest incomes, the percentage 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



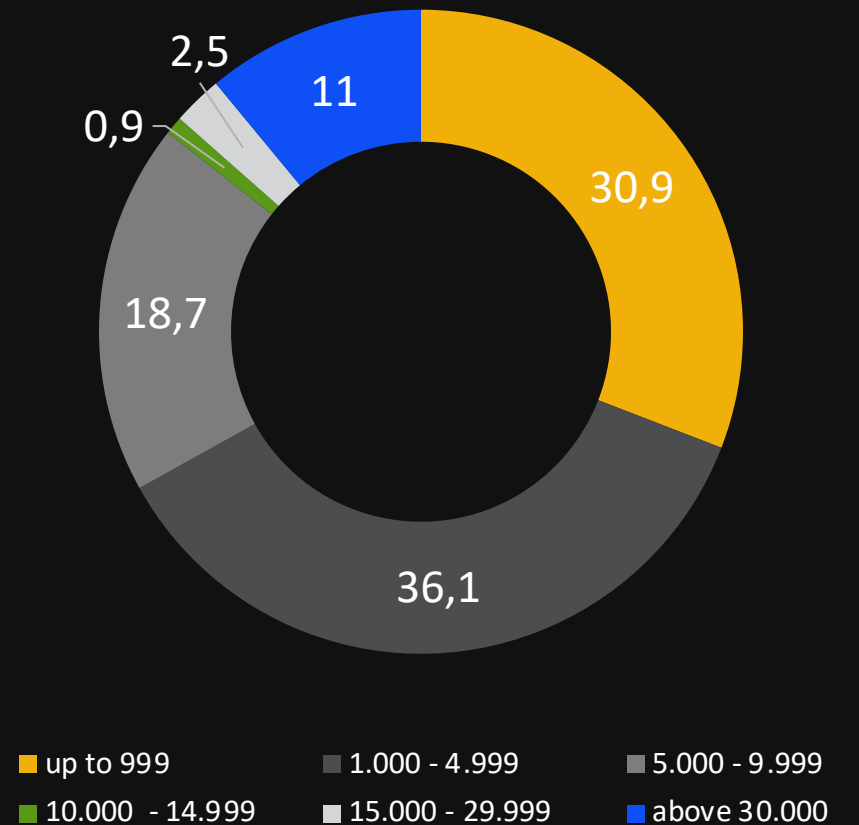
Italian Crypto Investors: a Profile

% of families that own crypto-assets



From a demographic perspective, it is noticeable that even not-so-young people have invested in cryptocurrency. Furthermore, about 15% of the investors have exceeded 15,000 euros.

% by € amount invested



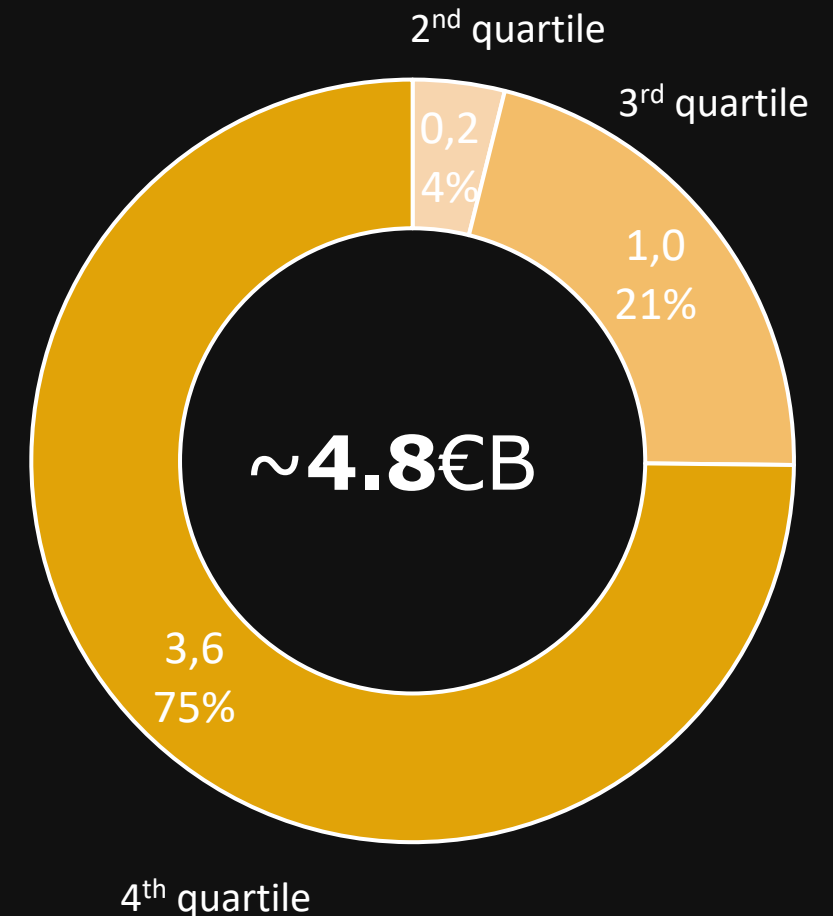
Source: Bollettino Economico Banca d'Italia January 2023, based on June 2022 survey



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



It can be inferred from the Bank of Italy numbers that crypto assets hold by Italians investors is almost 5 billion euros. A significant share that would like to be served properly. Furthermore, considering that the Italian private banking accounts for 1,000 billion euros in assets, the crypto investments could easily grow if/when just 1% diversify in crypto.

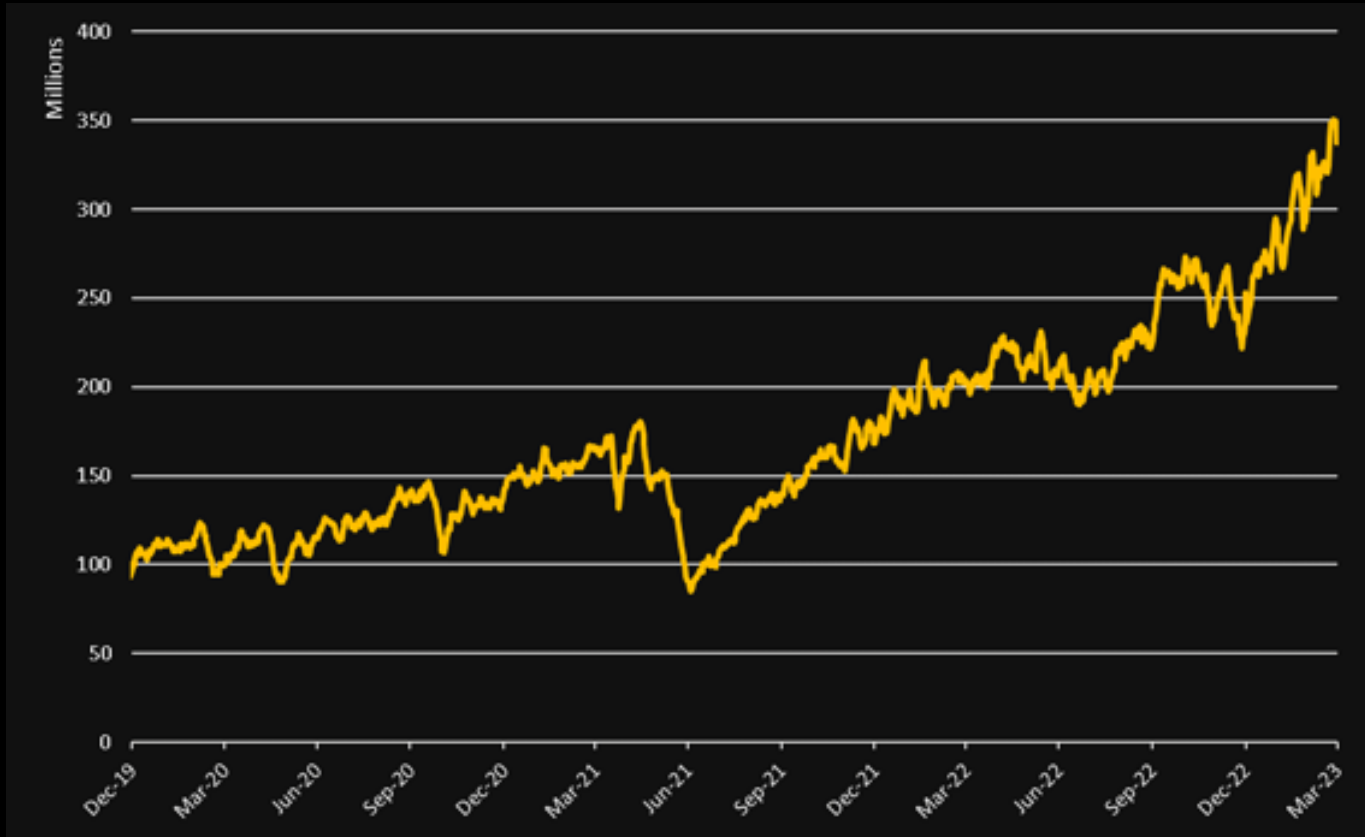
Source: DGI estimate on Bollettino Economico Banca d'Italia January 2023



TECHNOLOGY



Mining: New Hash Rate All-Time High

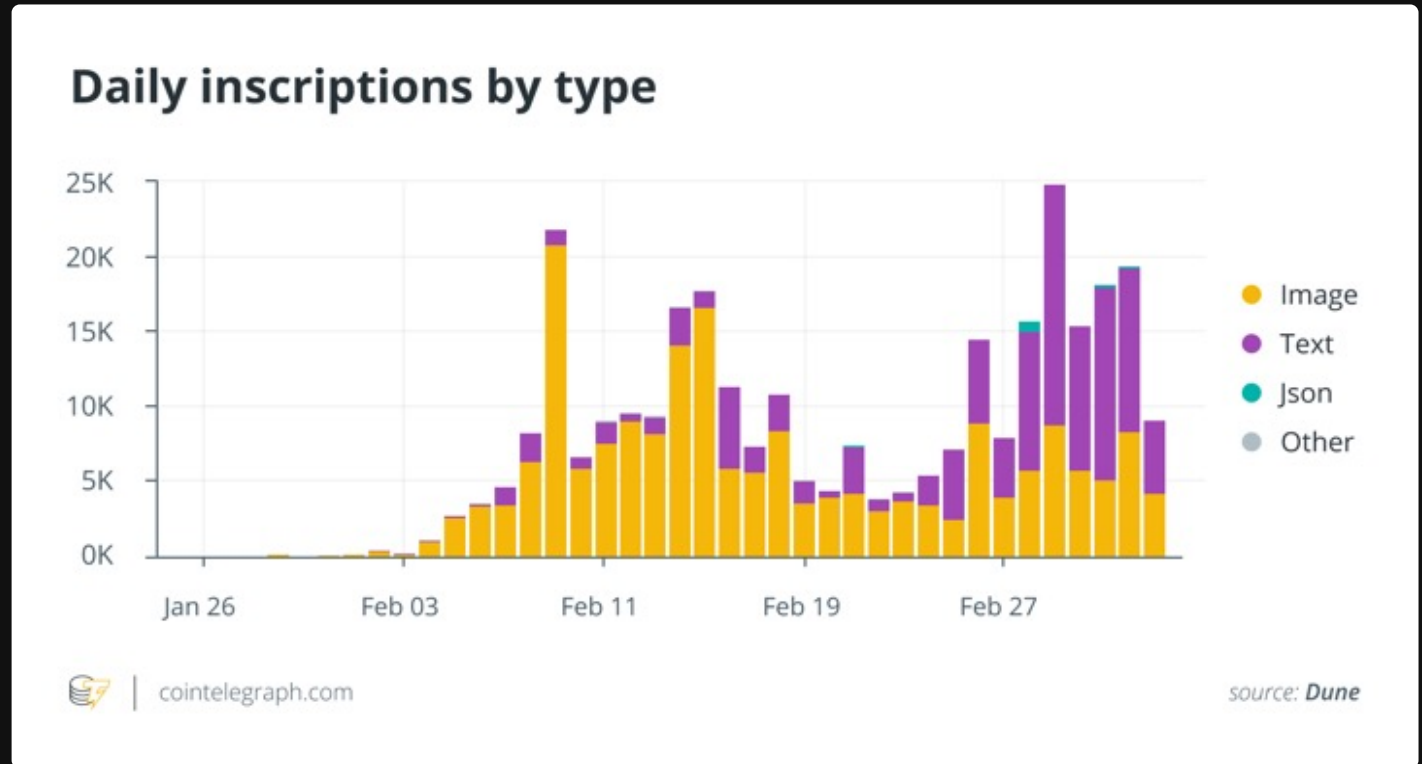


There is new hash-rate in the Bitcoin network. Whether the bitcoin price rises or falls, the computational power that secures the Bitcoin network continues to grow.

When mining was prohibited in China has been the only time a significant decrease has been observed. Miners moved abroad, and everything continues as before.

Ordinals: NFTs on Bitcoin?

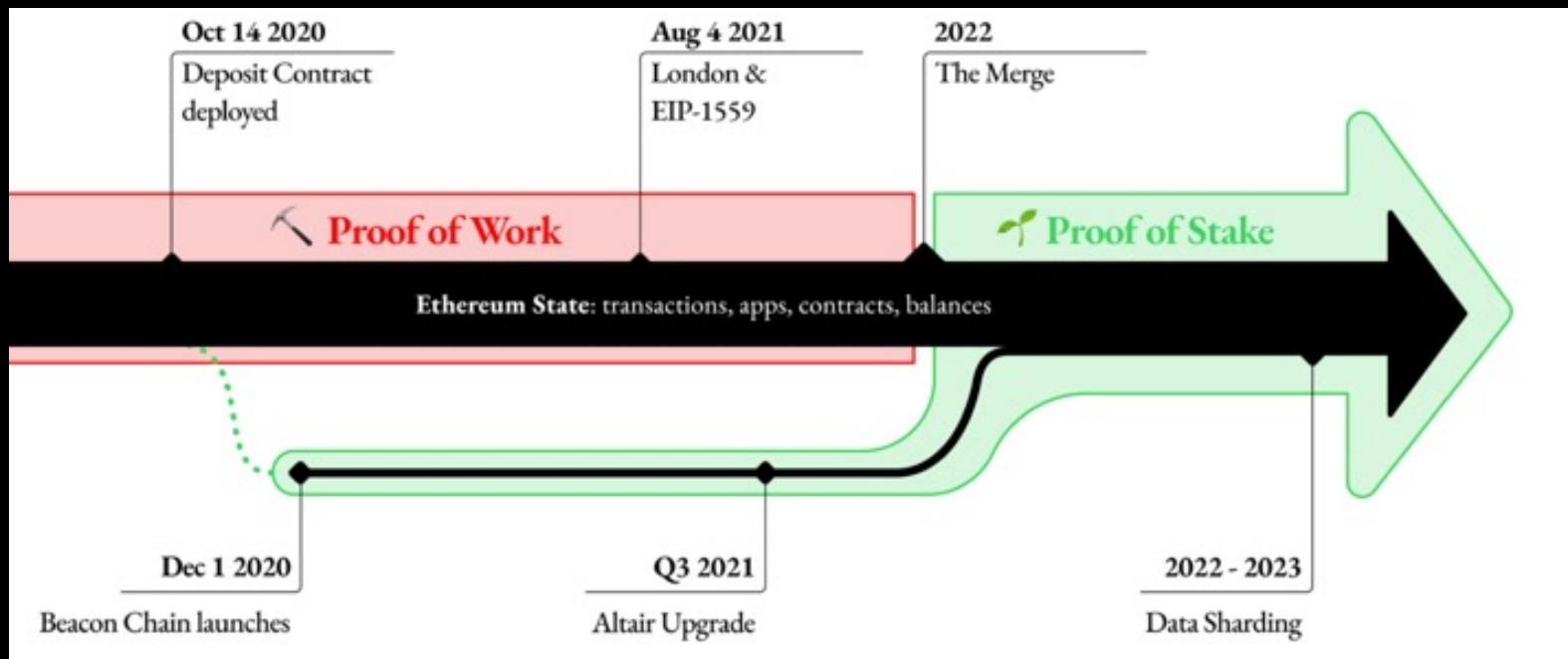
A way has been found to associate images, videos, and text by inserting a photo, a JPEG, or a music track directly into the blockchain. The problem is that in this case the data is truly stored on-chain on the Bitcoin blockchain, while Ethereum's NFTs typically point to digital artifacts that exist elsewhere.



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

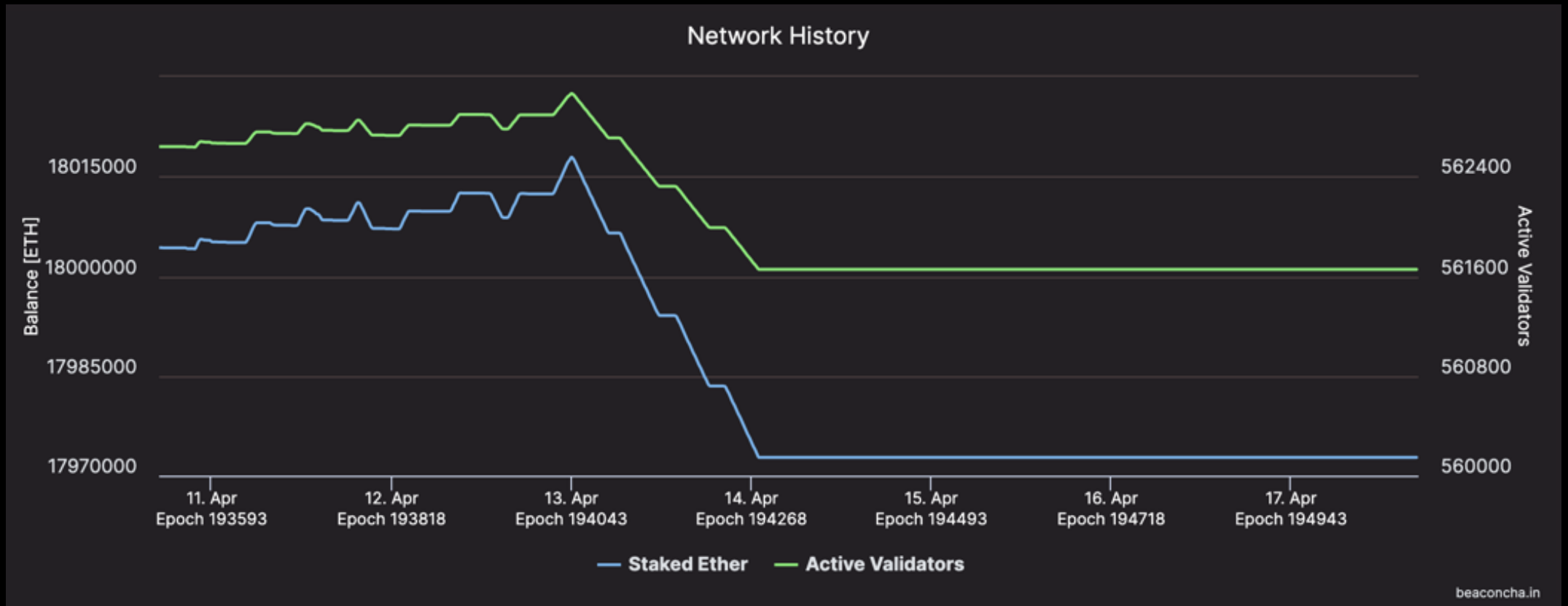
Shanghai: ETH Staking Withdrawals (1/2)

- 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



Shanghai: 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





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Alberto Grisoni

Direttore di AziendaBanca

"Tifosi e cronisti: il mondo cripto sui media"



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