# HASHDEX Market Pulse Q1 2024

**Ecosystem developments impacting crypto's investment case** 







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# About Hashdex

Founded in 2018, Hashdex is a leading crypto-focused alternative asset manager. We provide innovative investors simple and secure access to the rapidly growing crypto asset class through regulated investment products.



We exist to bridge the gap between traditional financial markets and the crypto economy.

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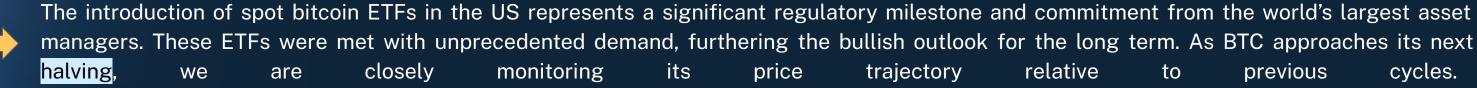


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# **Executive Summary**



The positive developments we observed in Q4'23 have escalated further in the first quarter of this year. At the conclusion of 2023, several indications emerged suggesting that 2024 could be promising, and some of these initial indicators have and continue to materialize.





Notable advancements are occurring in other areas of the crypto ecosystem. Emerging segments, including decentralized social media and blockchain-based applications to digitize access to physical infrastructure, are gaining traction alongside a growing trend of real-world asset tokenization.



The establishment of a tokenized US Treasury bond fund by the world's largest asset manager signals a potentially significant institutional trend, while Ethereum's successful Dencun upgrade is another sign of the maturation of the world's largest smart contracts platform.



We believe the crypto market is poised for a strong year, supported in part by bitcoin hitting its all-time high much earlier than expected. This report aims to set the foundation for this thesis, exploring our assessment of the crypto market in Q1'24 and our projections going forward.

relative previous to cycles.





# Market Overview and Global Metrics

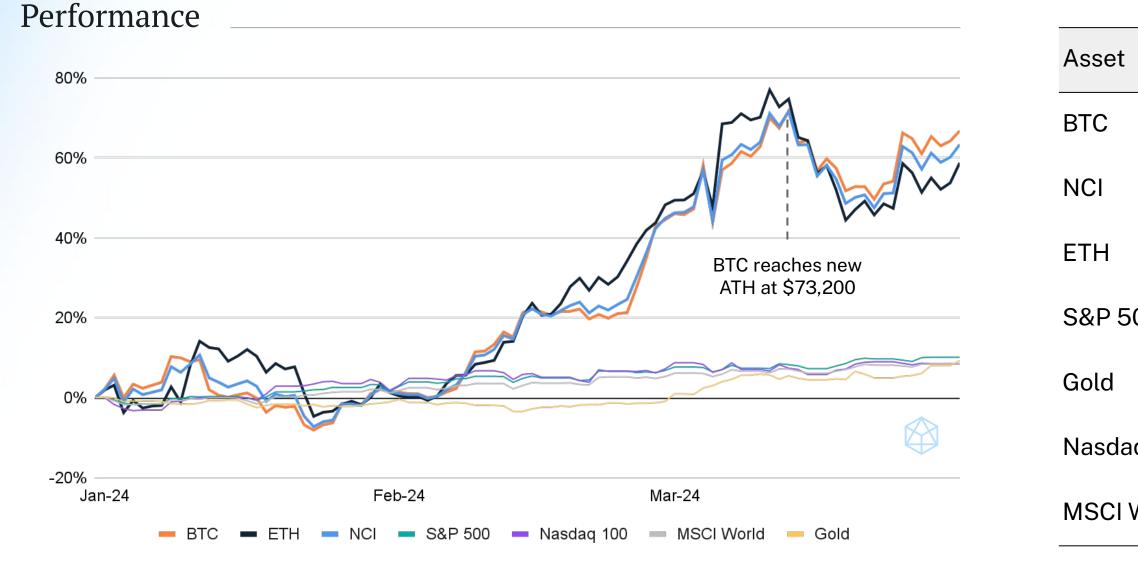
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## **Crypto Outperforms TradFi** as Spot ETFs Lead to New All-Time High for BTC

Similar to the last quarter of 2023, major TradFi assets experienced great performance but crypto once again outperformed under favorable conditions in Q1'24. Notably, the introduction of spot BTC ETFs in the US exerted considerable influence in BTC's price, leading the flagship crypto asset to a new all-time high of \$73,200 on March 13 and pushing the Nasdaq Crypto Index (NCI) to an impressive 63.4% upswing for the quarter.



Source: Hashdex Research with data from Bloomberg and CF Benchmarks (from December 31, 2023 to March 31, 2024).

2024).

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	QoQ	YTD	YoY
	66.8%	66.8%	150.5%
	63.4%	63.4%	132.0%
	58.8%	58.8%	100.7%
500	10.2%	10.2%	27.9%
	9.3%	9.3%	14.5%
aq 100	8.5%	8.5%	38.5%
World	8.5%	8.5%	23.2%

Source: Hashdex Research with data from Bloomberg and CF Benchmarks (from December 31, 2023 to March 31,



## **BTC** Surges Beyond **Expectations:** Is It **Overheated?**

Bitcoin's performance is progressing at a pace exceeding earlier expectations, driven by the robust price movements both preceding and following the listing of spot ETFs in the US.

This phenomenon may indicate convergence of retail and institutional investors, or alternatively, suggest potential overheating preceding a requisite correction.

With the halving expected for April 19-20, it is important to keep monitoring BTC's price action and whether a consolidation will follow the 7-month streak of positive performance.

Nonetheless, historically, BTC's performance has accelerated further after several months following each halving, suggesting a still optimistic outlook for 2024.

#### Bitcoin price performance 500 days before/after the halving



Source: Hashdex Research with data from Messari (from July 7, 2011 to March 31, 2024). Past performance is not a guarantee of future results.

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### **BTC** and ETH Approach 'Fair Value': When In Doubt, Zoom Out

Following two quarters of significant appreciation, the long-term trend of value accrual for the combined market value of BTC and ETH provides valuable insights.

We have observed that price levels have not only exceeded the lower band regression but have also significantly approached, according to our model's estimates, "fair value" of the combined market capitalization BTC and ETH.

It will be essential to carefully observe how the positive outlooks for the Bitcoin and Ethereum ecosystems unfold. It would not be unexpected if, during this quarter, their combined market value reaches or surpasses fair valuation, implying a significant acceleration into the bull phase of this cycle.

#### Long-term logarithmic growth of BTC + ETH market capitalization



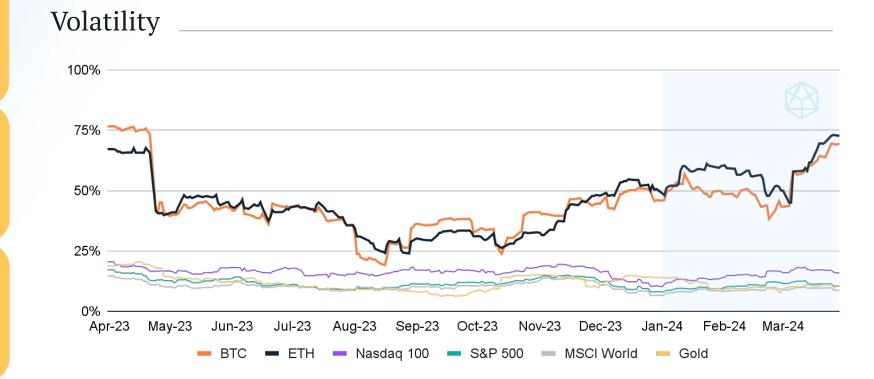
from July 17, 2010 to March 31, 2024. Past performance is not a guarantee of future results.

We describe the long term growth of the combined market capitalization of bitcoin and ether through a logarithmic regression channel, which models exponential growth including diminishing returns. Trend lines are obtained through an ordinary least squares fit to the combined market capitalization of bitcoin and ether, alongside prior all-time low and all-time high dates. Model uses Glassnode data from July 17, 2010 to December 31, 2022. Everything since the beginning of 2023 is a prediction. Market capitalization retrieved from Messari



### Price Swings Provoke Volatility but Enhance Crypto's Appeal in Diversified Portfolios

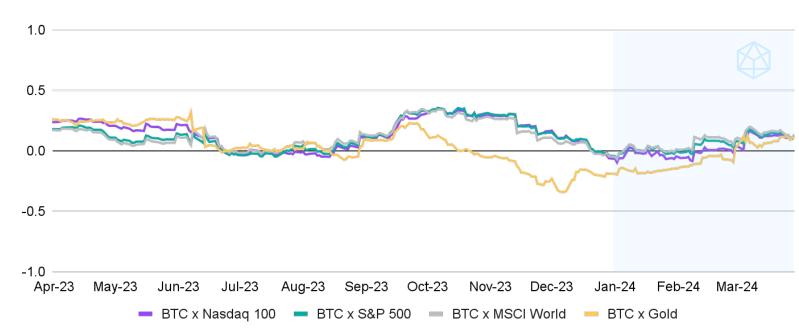
During the initial half of Q1'24, the volatility of BTC and ETH remained notably subdued in comparison to their historical 80%+ levels. Nonetheless, there was a substantial escalation in volatility commencing from the second week of January, with it persistently exceeding the 60-70% threshold for the period. Despite volatility being a concern for some investors, it is imperative to acknowledge that the potential for these assets to appreciate significantly in value over a brief timeframe contributes to their attractiveness for inclusion in a diversified portfolio in modest allocations.



### Correlations Remain Flat, Even With TradFi and BTC at All-Time High Territory

BTC's correlations with traditional assets have remained relatively tame but flipped to positive territory at the quarter's close. This lower correlation trend persists even though BTC, major TradFi indices like the Nasdaq 100 and the S&P 500, and even gold finished the first quarter of 2024 at all-time high territory. This reinforces the role of BTC as a long-term portfolio diversifier, benefiting investors from its historical outsized performance while being only mildly correlated, and sometimes uncorrelated, to traditional asset classes like equities and precious metals.





Source: Hashdex Research with data from CF Benchmarks and Bloomberg (from January 4, 2023 to March 31, 2024). Correlations computed in 3 month rolling windows (working days).

Source: Hashdex Research with data from CF Benchmarks and Bloomberg (from March 1, 2023 to March 31, 2024). Annualized volatility computed in 30 day windows (working days).

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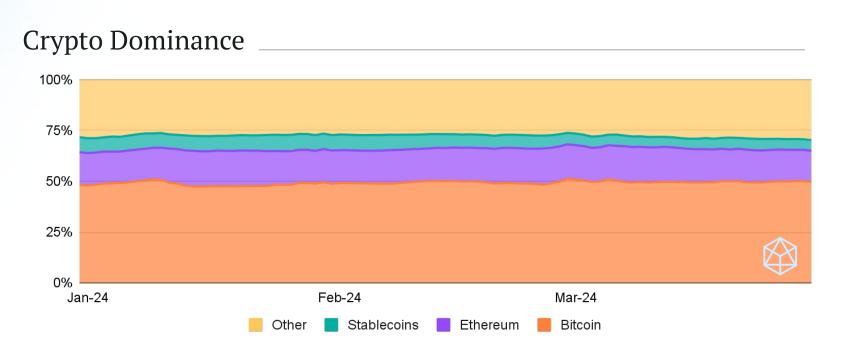
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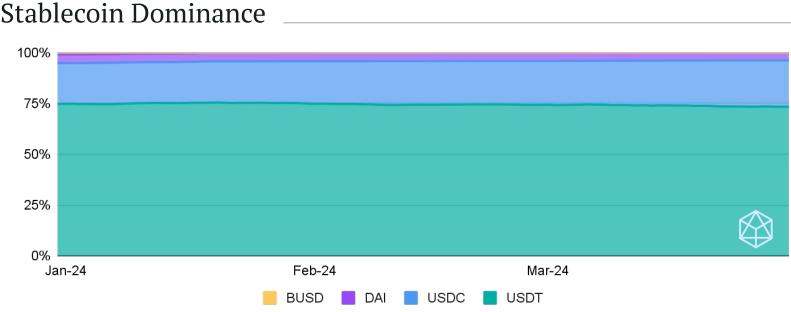
### Bitcoin Maintains 50% Dominance Mark Amid **Broad Crypto Market Growth**

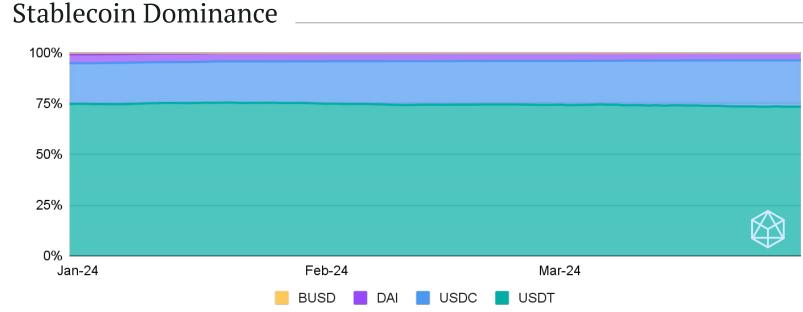
Bitcoin's current market dominance has been established since the fourth quarter of 2023, maintaining a relatively constant position at approximately 50%. Analogous to the preceding quarter, despite notable price escalations during this interval, the remainder of the crypto market has adeptly matched BTC's upward trajectory, making overall dominance distribution roughly unchanged.



#### USDT's Dominance Endures in the Stablecoin Market with No Signs of Change

In the preceding quarter, the dominance of Tether USD (USDT) persisted as a formidable presence within the stablecoin sector. Currently, there are no indications suggesting a forthcoming change in this dynamic in the short term. This prevailing trend underscores a considerable concentration in the stablecoins ecosystem, meriting diligent observation as the domain continues to mature.





Source: Hashdex Research with data from Messari (from December 31, 2022 to December 31, 2023).

Source: Hashdex Research with data from Messari (from December 31, 2022 to December 31, 2023).





# Institutional Adoption

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#### **Arizona Senate Moves Forward** with Proposal to Include **Crypto Retirement Funds**



Your future. Secure for your lifetime





concurrent resolution aims to The "urge" pension fund managers to contemplate incorporating crypto into their investment allocations.

The Arizona State Senate has advanced a resolution urging state retirement funds to evaluate the inclusion of spot bitcoin ETFs in their investment portfolios. This move came shortly after the SEC approved the trading of bitcoin ETFs in January. The resolution tasks the Arizona State Retirement System and the Public Safety Personnel Retirement System with exploring these new investment opportunities. This concurrent resolution, if approved by the House Ways and Means Committee, will mandate a comprehensive analysis on the feasibility, risks, and benefits of investing in bitcoin ETFs, without needing approval from Governor Katie Hobbs.

#### World's Largest Pension Fund Considers Bitcoin for **Investment Portfolio**





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Government Pension Investment Fund

#### **Japan's Government Pension Fund Seeks** Information "Illiquid on Assets" Bitcoin for Including Potential **Investment Opportunities**

Japan's Government Pension Investment Fund (GPIF), the world's largest by assets under management, disclosed last March that its initiative to explore investments in "illiquid assets" including bitcoin. This inquiry is part of its ongoing research to identify potential additions to its current investment portfolio that includes domestic and international bonds and stocks, real estate, infrastructure, and private equity. The GPIF is currently gathering information on various other assets such as forests, farmland, gold, and bitcoin to evaluate their integration into the pension fund's portfolio. This follows a February proposal by the Japanese government to legislate the inclusion of digital assets like crypto in investment funds.



Institutional Adoption

#### ENS and GoDaddy Partner Up to Link Wallets with Domains





ethereum

ENS serves as the blockchain equivalent of the Domain Name System (DNS), which is commonly used in Web2.

Ethereum Name Service (ENS), operating a domain system on the Ethereum blockchain, has partnered with GoDaddy to link users' blockchain wallets to web domains. enhancing Web2 and Web3 integration. This collaboration allows users to connect ENS's user-friendly .eth addresses with traditional DNS domains, offering improved accessibility and maintaining DNS domain ownership with the registrar. ENS founder Nick Johnson highlighted that .eth domains are censorship-resistant and be cannot controlled or revoked by any authority, including the ENS DAO, thus ensuring secure and autonomous use of blockchain technology within the existing internet infrastructure.





Institutional Adoption

#### Avalanche Collaborates with Alipay+ on Wallet Program



#### Avalanche is enhancing digital shopping with its Alipay+ D-store integration and a Web3 voucher program.

In collaboration with top e-wallet partners, Avalanche's new program allows users to enjoy up to 50% off at over 500 milk tea shops through a mini-game experience, utilizing its Subnet technology. This initiative, which marks the first phase of a proof-of-concept to boost merchant growth and user engagement, integrates seamlessly with popular e-wallets via AvaCloud, facilitating online store setups in just 10 minutes with no initial costs. Future phases will explore the use of blockchain and digital collectibles for expanded possibilities, supported by AvaCloud's advancement into hybrid cloud models with AlibabaCloud and AWS for enhanced scalability and Web3 capabilities.





# Ecosystem Developments

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#### Bitcoin

### **BTC** Surges Post-Spot ETFs **Amid Institutional Interest**

Following the introduction of spot ETFs in the US, BTC reached a new multiyear high at \$49,000, but then rapidly saw its first 20% correction in months. It rebounded by the end of January and saw substantial gains in February (+42.2%) and March (+15.4%).

It's worth pointing out that BTC reached a new all-time high at \$73,200 on March 13, marking the first time in which the asset has regained its prior multiyear top before a halving. This uptrend was potentially driven by enhanced interest from institutional investors within the United States, which also contributed to a slight escalation in market volatility during the aforementioned timeframe.

The next months will be key to assess whether the current cycle will continue diverging from past trends, especially given the fact that BTC finished Q1'24 with a 7-month green streak, the longest in its history.



Source: Hashdex Research with data from CF Benchmarks (from December 31, 2023 to March 31, 2024).

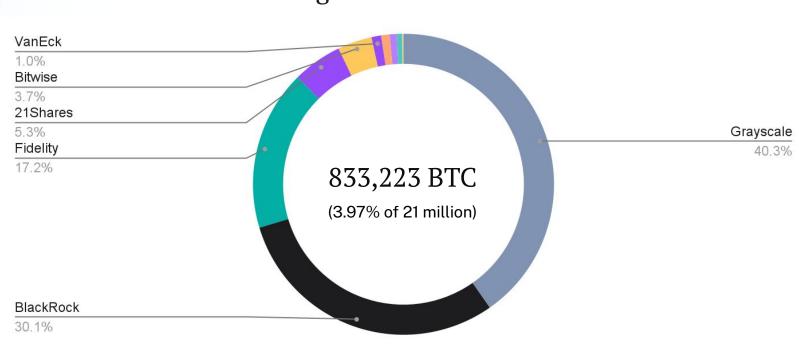






#### **US Spot BTC ETFs Gather 4% of BTC Supply in Under 3 Months**

A remarkable volume of BTC has been acquired by US spot ETFs, totalling a net inflow of 212,000 BTC at the end of Q1'24. Grayscale's GBTC was the only product experiencing outflows in all the trading days, but this did not deter investor demand for the other ETFs. It warrants close observation how the allocation among different ETF managers will evolve, particularly as investors in BlackRock initiate their positions and those in Grayscale consider redeeming their pre-conversion trust investments.

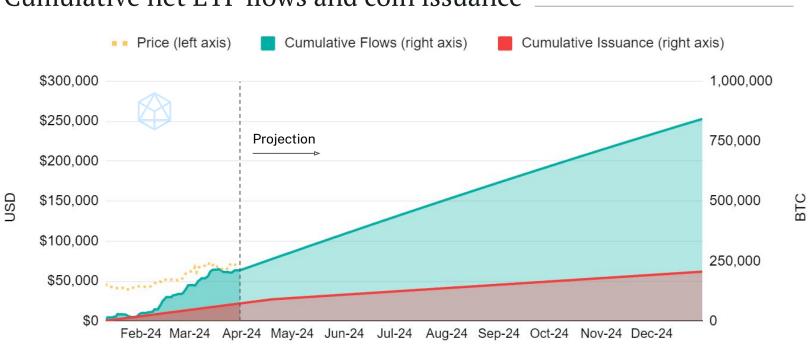


#### Distribution of AUM among all 10 issuers

Source: Hashdex Research with data from Dune Analytics (as of March 31, 2024)

## Demand Shock Meets Supply Constraint: ETF BTC Acquisitions vs. New Bitcoin Issuance

An essential indicator to observe throughout the year is the comparative analysis between the volume of BTC acquired by ETF providers and the quantity of new newly issued BTC being introduced into the circulating supply by miners. In light of the forthcoming halving event and the possibility of improved market conditions for risk-oriented assets, it is anticipated that the discrepancy between the BTC procured by ETFs and those newly minted could expand significantly.



Source: Hashdex Research with data from Dune Analytics (from January 11, 2024 to March 31, 2024). Projected cumulative flows based on average daily flows since the beginning of trading. Projected cumulative issuance based on theoretical average daily bitcoin issuance and 4th halving date on April 20, 2024.

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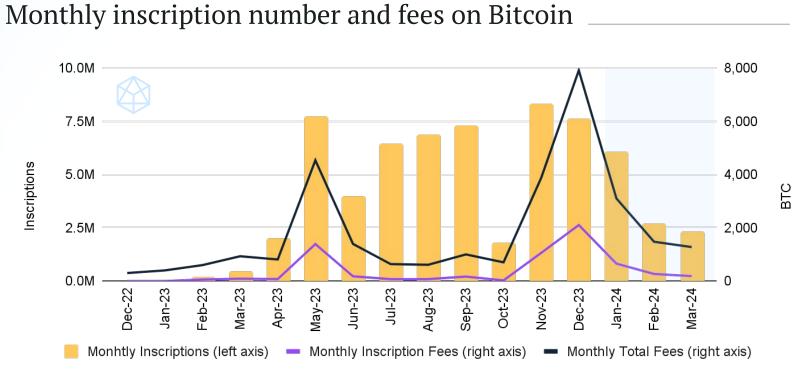
Cumulative net ETF flows and coin issuance



#### **Bitcoin**

### **Demand for Ordinals Remains Strong, but Inscriptions** Decelerate After a Strong Q4'23

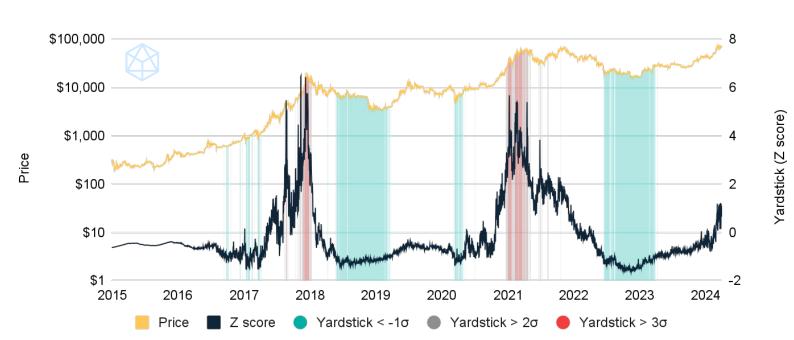
The innovative use of Bitcoin for fungible tokens and NFTs remained in January, but finished the first quarter of 2024 significantly down from its levels at the end of 2023. The creation of inscriptions and BRC-20 tokens has continued at a slower pace and hasn't driven major spikes in onchain fees on Bitcoin in Q1'24. Nonetheless, onchain fees at the end of March were still up 320% in comparison to December 2022, signalling that the a new baseline for additional miner revenue is likely here to stay as Ordinals bring new utility to the network. This development signifies an advanced utilization of the functionalities enabled by Bitcoin's Taproot upgrade.



## BTC Yardstick Suggests There's Still Plenty of Room for Price Growth Before a Major Peak

Bitcoin Yardstick is a metric that helps in assessing whether bitcoin is under/overvalued. It's defined as the ratio between market capitalization and hash rate, standardized using a 2-year rolling Z score. In the past, the yardstick correctly signaled periods of overvaluation (gray,  $Z > 2\sigma$ , to red, Z >  $3\sigma$ , areas) with prices peaking at Z between 5 and 7 in the past two cycles. While bitcoin is currently out of the undervaluation (green, Z < -1 $\sigma$ ) area, Z was only 0.65 at the quarter close, suggesting enough room for upside before a multiyear peak is reached.

#### Bitcoin Yardstick since 2015



Source: Hashdex Research with data from Dune Analytics (from December 14, 2022 to March 31, 2024).

Source: Hashdex Research with data from mempool.space and Messari (from January 1, 2013 to December 31, 2023). Z scores are computed in rolling 2-year windows.

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## Hash Rate and Prices Rise, But Slower Onchain Activity Brings Fees and Active Addresses Down

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Metric	Q1'24	Q4'23	2023	1Y ago	QoQ	YTD	12M
Price (USD)	\$71,080	\$42,608	\$42,608	\$28,372	66.8%	66.8%	150.5%
Market Cap (USD)	\$1,369.5B	\$825.4B	\$825.4B	\$550.4B	65.9%	65.9%	148.8%
Dominance	49.8%	48.2%	48.2%	44.7%	3.2%	3.2%	11.3%
24h Exchange Volume (USD)	\$18.0B	\$8.0B	\$8.0B	\$4.1B	124.1%	124.1%	334.8%
Hash Rate (EH/s)	642.9	516.9	516.9	325.9	24.4%	24.4%	97.3%
Daily Active Addresses	691.1k	791.6k	791.6k	1.1M	-12.7%	-12.7%	-35.1%
Daily On-chain Fees (USD)	\$1.9M	\$15.0M	\$15.0M	\$897.1k	-87.0%	-87.0%	117.3%
Lightning Capacity (BTC)	4,624.4	5,035.6	5,035.6	5,437.7	-8.2%	-8.2%	-15.0%

Source: Hashdex Research with data from CF Benchmarks, Messari and mempool.space (from March 31, 2023 to March 31, 2024).



#### Ethereum

#### **Ethereum's Significant Growth: Dencun** Update and Emerging **Trends Bolster ETH**

The Ethereum network witnessed a quarter of substantial developments. Foremost among these was the successful implementation of the Dencun update, a pivotal enhancement for the network's scalability solution adoption. This advancement is part of a broader trend of significant progress in Layer-2 (L2) solutions, which has been observable since late 2023, marked by an expanding user base and an increase in liquidity within this sector.

Furthermore, the quarter saw the emergence of two significant trends poised to considerably augment Ethereum's user base and elevate ETH demand. These include the development of Decentralized Social (DeSo) initiatives, such as Farcaster, and efforts towards the tokenization of Real-World Assets (RWAs), notably through BlackRock's BUIDL project. The effective development of practical blockchain applications, in tandem with the infrastructure improvements delineated in Ethereum's strategic roadmap, underpins a promising outlook for the future of ether.

While the prevailing market narratives currently appear to favor BTC, the prospect of ETH outperforming BTC by year's end aligns with patterns observed in previous halving years, rendering such an outcome within the realm of possibility.

#### Ether price action in Q1'24



Source: Hashdex Research with data from CF Benchmarks (from December 31, 2023 to March 31, 2024).

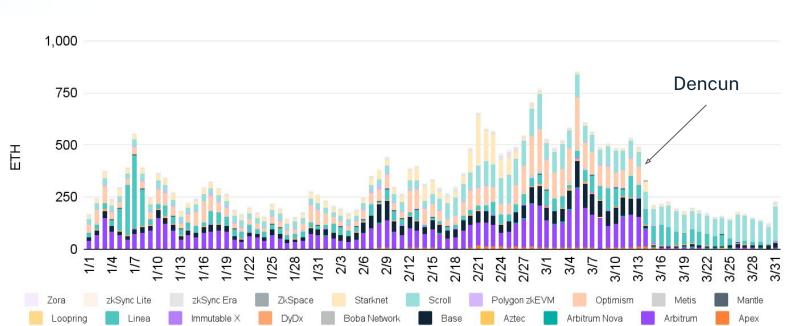






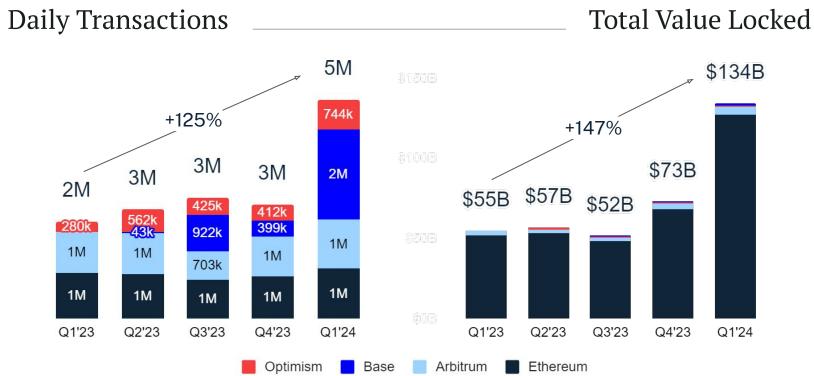
### **Dencun** Upgrade: A Milestone in Ethereum's **Evolution Boosting Investment Appeal**

The implementation of the Dencun upgrade constitutes a pivotal moment in the ongoing evolution of Ethereum, initiated by the Merge, especially from the perspective of investors focused on its long-term prospects. By reducing the expenses associated with Layer-2 (L2) networks consolidating transactions onto the Ethereum main chain, this development augments the usability and accessibility of Ethereum. Furthermore, it solidifies Ethereum's status as a premier blockchain platform for innovation, thereby bolstering the investment rationale for ETH.



### Ethereum Layers 2s Demand Spurs Growth in TVL and transactions, particularly on Base

Pursuant to our analysis on the escalating demand for scalability enhancements within the Ethereum network, a significant increase in network activity and Total Value Locked (TVL) has been documented in recent months. The implementation of the Dencun update sustains lower operational expenses for Ethereum's scaling solutions, thereby serving as a significant impetus for the continuation of this upward trajectory in network activity and TVL as Ethereum's broadband phase comes into fruition.



### L2 gas fees paid on Ethereum's base layer

Source: Hashdex Research with data from Dune Analytics (from January 1, 2024 to March 31, 2024).

Source: Hashdex Research with data from Defillama, Etherscan, Arbscan, Basescan and Optimismscan (from March 31, 2023 to March 31, 2024). TVL on Ethereum includes liquid staking and double counting. Base was launched on June 15, 2023.



#### Blockchain Meets Social Media: Farcaster's Rise and Optimism Adoption

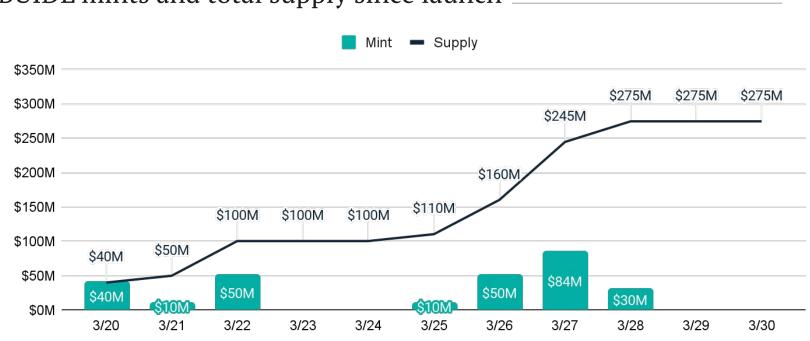
The integration of blockchain technology with social media platforms, which rank among the most impactful and lucrative platforms globally, represents a notably promising application. Within this context, the Farcaster project emerges as a noteworthy example, following the recent release of their Frames update and its increasing adoption of Optimism, a key scalability solution for the Ethereum network. The continual advancements and expansion of the user community associated with such platforms demand vigilant observation.



## BlackRock's BUIDL Fund Spearheads Billion-Dollar US Treasury Tokenization

The BlackRock USD Institutional Digital Liquidity (BUIDL) fund, launched on March 20, has played a pivotal role in the tokenization of over \$1 billion in US Treasuries, spreading this activity across several blockchains (with Ethereum leading the pack). This strategic move by BlackRock highlights the emerging trend of leveraging blockchain technology and marks a significant milestone in the tokenization of real-world assets. It not only underscores the potential of blockchain as a transformative tool for financial instruments but also signals a "killer-case" for the broader application of tokenization technology.

#### BUIDL mints and total supply since launch



Source: Hashdex Research with data from optimistic.etherscan.io (from March 31, 2023 to March 31, 2024).

Source: Hashdex Research with data from Dune Analytics (from March 20, 2024 to March 31, 2024).



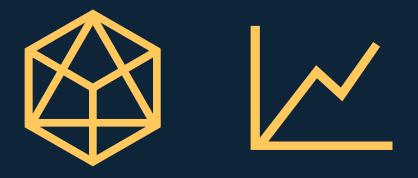
**3. Ecosystem Developments** 

## **Ethereum Shows Robust Price and Network Metrics Amid Reduced Market Dominance**

Metric	Q1'24	Q4'23	2023	1Y ago	QoQ	YTD	12M
Price (USD)	\$3,643	\$2,294	\$2,294	\$1,815	58.8% 5	58.8%	100.7%
Market Cap (USD)	\$421.1B	\$275.4B	\$275.4B	\$219.4B	52.9% 5	52.9%	91.9%
Dominance	15.3%	16.1%	16.1%	17.8%	-5.1% -	-5.1%	-14.4%
24h Exchange Volume (USD)	\$7.7B	\$3.6B	\$3.6B	\$2.2B	116.2% 1	16.2%	248.3%
Total Stake (ETH)	31.3M	28.8M	28.8M	18.0M	8.6%	8.6%	74.3%
Daily Active Addresses	653,977	503,086	503,086	425,144	30.0% 3	30.0%	53.8%
Daily On-chain Fees (USD)	\$10.0M	\$4.1M	\$4.1M	\$4.7M	145.5% 14	45.5%	109.8%
Total Value Locked (USD)	\$127.0B	\$68.7B	\$68.7B	\$52.9B	84.7% 8	84.7%	139.9%







# Performance of Hashdex's Indices

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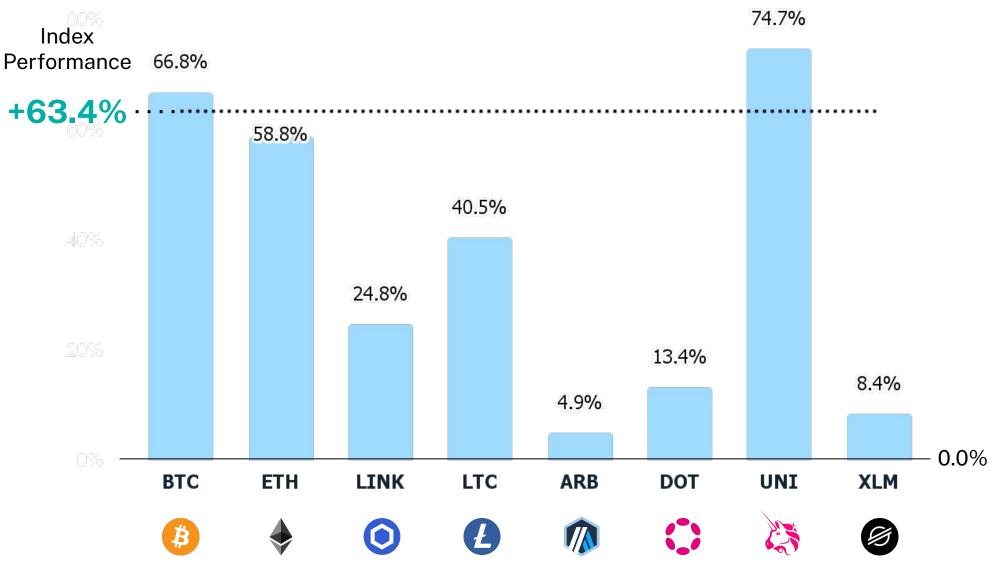


# The Nasdaq Crypto Index<sup>TM</sup> (NCI<sup>TM</sup>)

The Nasdaq Crypto Index (NCI) closed the first quarter of 2024 with an outstanding 63.4% performance. This impressive result was largely driven by the index largest holdings, BTC (+66.8%) and ETH (+58.8%), alongside Uniswap's UNI (+74.7%), which had the best performance of the full basket in Q1'24.

Contrary to previous quarterly snapshots, the NCI hasn't had any asset joining or leaving its basket in the first quarter of 2024, with all the allocations originally made in the December 1, 2023 rebalance remaining in the index composition, and weights naturally changed by the different performances among the constituents.

A notable underperformance was held by ARB (+4.9%), which can be explained by the asset's lack of major drivers for the quarter and its high annual inflation rate in comparison to the rest of the NCI basket. As 2024 continues, the NCI is in good shape to capture the potential upside in the major theses in the digital asset space, particularly BTC and ETH.



4. Performance of Hashdex's Indices



4. Performance of Hashdex's Indices

# Performances of indices tracked by Hashdex products



Nasdaq Cfb





Index	Jan-24	Feb-24	Mar-24	Q1'24	Q4'23	YTD	12M
Nasdaq Crypto Index	1.4%	43.0%	12.7%	63.4%	51.3%	63.4%	131.9%
Nasdaq Bitcoin Reference Price	1.6%	42.2%	15.4%	66.8%	57.8%	66.8%	150.7%
Nasdaq Ether Reference Price	1.3%	46.4%	7.1%	58.8%	36.8%	58.8%	99.8%
CF Web 3.0 Smart Contract Platforms Index	-7.3%	28.8%	17.8%	40.7%	152.2%	40.7%	163.2%
CF DeFi Composite Index	-8.3%	41.7%	15.1%	49.6%	54.5%	49.6%	100.7%
CF Digital Culture Composite Index	-11.4%	44.7%	37.7%	76.5%	57.6%	76.5%	65.2%
Nasdaq Crypto Index Europe	0.3%	44.4%	11.6%	61.6%	56.9%	61.6%	132.2%
Vinter Hashdex Risk Parity Momentum Crypto Index	-8.1%	33.2%	5.2%	28.7%	86.9%	28.7%	111.5%

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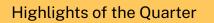




# Highlights of the Quarter & Hashdex Reports

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Hashdex Reports



SEC Approves Launch of Bitcoin Spot ETFs in the US



Ethereum Activates Dencun Upgrade, Ushering New Era For Layer 2's



Solana Launch Their Token Extensions



**DeFi Saver Integrates Safe to Bring Account** Abstraction to DeFi



**Brazil Stock Exchange to Open After Hours** Trading



ENS partners with GoDaddy



Arizona Senate considering crypto for retirement funds



Curious about Bitcoin's future? Look to 1998



<u>A strong finish to a year of transition</u>



Bitcoin is still running: A note of gratitude



Bitcoin: The rise of exponential gold



**Bitcoin's investment case** post-ETF approvals



Bitcoin ETFs set the stage



What we've learned from the launch of bitcoin ETFs in the US



A month of momentum

🕸 Hashdex

**Extraordinary Letter to Investors and Partners** 



Bitcoin is booming – but what's next?



The Dencun upgrade is live: Ethereum's evolution continues at full throttle



Bitcoin returns to an "old normal": Understanding recent correlation trends



Bitcoin ETF (DEFI) Investment Case



Bitcoin's back on top





**BRC-20** - BRC-20 is a token standard on the Bitcoin blockchain that utilizes inscriptions to enable the creation and transfer of fungible tokens, providing functionalities for minting and transferring digital assets using Bitcoin.

**Dominance** - The ratio between a crypto asset market capitalization and the total market capitalization of the asset class, which measures the relevance of a project in the industry.

**Dencun** - Dencun is an upgrade to the Ethereum blockchain designed to enhance its performance by making execution more efficient and improving data availability across the network.

**Gas Fee** - The fees associated with transacting and executing smart contracts or decentralized applications on the Ethereum blockchain and other smart contract platforms.

**Halving** - The event where the Bitcoin mining subsidy per block is halved, which takes place in multiples of 210,000 blocks since the network's inception (or roughly every 4 years).

**Hash Rate** - The conventional unit measure for the computational power on a Proof-of-Work network, a proxy for the security of a blockchain and how costly it is to attack it.

**Inscription** - Inscriptions refer to the metadata that is added or "inscribed" into Bitcoin satoshis (sats), which are the smallest units of the bitcoin currency. That allows unique data to be registered on the Bitcoin blockchain, in such way that it differs from how NFTs are registered in other smart contracts platforms.

**Layer-2 (L2)** - A parallel network that serves as a secondary set of off-chain solutions built on top of an existing Layer-1 to reduce bottlenecks and offer greater scalability and privacy.

**Lightning Network** - A scaling solution built atop Bitcoin that allows off-chain transactions with increased speed and lower transaction costs, without giving up security.

**Liquid Staking** - The form of staking where depositors are rewarded with a token that can redeem the original deposited asset, while providing a liquid asset for other use cases such as DeFi.

**NFTs** - Non-fungible tokens (NFTs) are a special type of token that represents a unique digital asset, such as a picture, a song or a video.

**Stablecoin** - A stablecoin is a digital currency created with the intent of holding a stable value with respect to another asset, such as fiat currencies, precious metals and other digital assets.

**Staking** - Staking involves pledging your cryptocurrency to support transaction validation on the blockchain. While you don't personally validate transactions, network computers handle this task, and major exchanges offer programs that make staking easy. The main motivation for staking is to earn rewards.

**TradFi** - Traditional finance (TradFi) refers to the financial system that exists apart from blockchain, cryptocurrency, and decentralized finance (DeFi), typically characterized by legacy financial institutions such as banks and large corporate financial enterprises that operate using a centralized model.

**Tokenization** - Tokenization is the act of converting the value of a tangible or intangible asset into a token. The token itself is a piece of code made up of a distinctive asset reference, unique properties, and/or specific legal rights in accordance with the smart contract through which the token was generated.

**Total Stake** - The total amount of native tokens locked in a Proof-of-Stake blockchain (such as Ethereum, Solana or Polkadot) as a collateral for individuals to activate and operate the network consensus. The higher the dollar value of the total stake in a network, the more capital would be necessary to subdue the network maliciously.

**Total Value Locked (TVL)** - The total value of all assets locked into a DeFi protocol or ecosystem. It is a metric often used to measure a protocol's growth and adoption.

**Web2** - Describes the current state of the internet, which has more user-generated content and usability for end-users compared to its earlier iteration.

**Web3** - A decentralized internet infrastructure that enables global users to connect and interact with digital assets, websites and apps without any centralized control.



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