Cointelegraph Research

Navigating 2025's Crypto Landscape:

DeFi Trends and Crypto Outlook



bitcoin ethereum Ethena

EigenLayer MicroStrategy SOLANA Sui

Cointelegraph Research Report

Content

Key Forecasts Across Bitcoin, Altcoins, Tokenization, Stocks, AI, DePIN, Desci, Regulation, and DeFi 3

1. Bitcoin: The Year Bitcoin Entered Mainstream Finance with Spot ETFs 5

2. Altcoins: Market Shifts, Strategic Insights, and Key Performers 8

3. RWA Tokenization Surges 85% in 2024, Bridging TradFi and Blockchain 11

4. DePIN and AI Agents See Explosive Growth, DeSci Lags in 2024 14

5. Crypto Stocks in 2024: Mixed Performance and Key Indicators to Watch 18

6. Crypto Regulation: MiCA Reshapes EU, US Becomes Business-Friendly 21

7. DeFi Rebounds in 2024: TVL Surges 118% Amid Market Recovery 24

Conclusion 27

Disclaimer 28

Key Forecasts Across Bitcoin, Altcoins, Tokenization, Stocks, AI, DePIN, Desci, Regulation, and DeFi

As we look ahead to 2025, four main sectors are poised to affect both short- and long-term market shifts. Here, we detail our baseline forecasts for these developments, as well as which subsectors and geographies are most likely to be impacted and why.

BTC:
For the first time in its history, BTC reached the $100k milestone, aided by a record buying spree from MicroStrategy, which accumulated 257,250 BTC for its corporate treasury in 2024, according to BiTBO. We expect BTC's price to hit $150k in 2025.

Altcoins:
The altcoin season is expected to continue in Q1, with altcoin market capitalization projected to hit $3 trillion due to an anticipated inflow of funds into the crypto industry.

RWA Tokenization:
The tokenized RWA market grew by 85% year-over-year, reaching over $19 billion in total value (excluding stablecoins). By 2030, the tokenized RWA market could reach $1.3 trillion if it sustains its current CAGR.

AI Agents/ DePIN/ DeSci:
The market cap of AI agents is projected to surpass $47 billion by 2030, while DePIN adoption is expected to exceed 20 million connected devices by the end of 2025. DeSci growth will remain stunted as long as incentive and funding challenges remain.

Crypto Stocks:
If Bitcoin sustains its bullish trajectory and achieves a 50% price increase in 2025, MicroStrategy's stock could see an additional 100–150% gain due to its leveraged exposure to BTC's performance.

Crypto Regulation:
The adoption of MiCA will likely push smaller cryptocurrency businesses outside of Europe due to heightened compliance costs. The US can become an attractive destination for them, given the potential decrease in SEC's outreach and the pro-crypto stance of the new administration.

DeFi:
Derivative DEXs recorded a 328% year-over-year increase in trading volumes from January to November 2024. This reflects a resurgence in speculative activity amid improving market conditions. In 2025, DEXs will also likely see a substantial increase in trading volumes, over $4 trillion, and capture about 20% of the overall cryptocurrency trading market.

Key Milestones Shaping the Cryptocurrency and Blockchain Landscape in 2024



JANUARY 10, 2024
Approval of Spot Bitcoin ETFs

The SEC approved spot Bitcoin ETFs, including BlackRock's iShares Bitcoin Trust.



APRIL 10, 2024
Bitcoin Halving Event

Bitcoin underwent its fourth halving, reducing block rewards from 6.25 BTC to 3.125 BTC.



MARCH 15, 2024
Approval of Ethereum ETFs

The SEC approved the first spot Ethereum ETFs from major institutions like Fidelity and BlackRock.



APRIL 30, 2024
CZ's Sentencing

Binance's CEO Changpeng Zhao was sentenced to four months in prison for compliance failures. Binance agreed to pay a $4.4 billion settlement and exit the U.S. market.



NOVEMBER 27, 2024
U.S. Regulatory Shifts Post-Elections

Pro-crypto regulatory changes began under the newly elected administration, with Paul Atkins leading the SEC.

JULY 31, 2024
Proposal for U.S. Strategic Bitcoin Reserve

Senator Cynthia Lummis introduced a proposal to create a U.S. Strategic Bitcoin Reserve.





AUGUST 24, 2024
Pavel Durov's Arrest in France

Pavel Durov, founder of Telegram and TON, was arrested in France at Le Bourget Airport near Paris.



APRIL 9, 2024
Launch of EigenLayer Protocol on Ethereum Mainnet

EigenLayer officially launched on the Etheruem mainnet, allowing Ethereum validators to 'restake' their assets for additional yield opportunities.



DECEMBER 9, 2024
Advancements in Quantum Computing

Google unveiled its new quantum chip, Willow, raising security concerns about blockchain encryption.



DECEMBER 5, 2024
Bitcoin Surpasses $100,000

Bitcoin reached an all-time high above $100,000.



DECEMBER 30, 2024
MiCA Regulation Goes Live in Europe

The EU's Markets in Crypto-Assets (MICA) regulation took effect.

1. Bitcoin: The Year Bitcoin Entered Mainstream Finance with Spot ETFs

Overview:

2024 will be considered one of the most important years in the history of Bitcoin. The launch of US-traded spot Bitcoin ETF products was the most significant step in the integration of Bitcoin with the traditional financial system since the introduction of stablecoins a decade ago. It signaled the maturation of the asset and has moved discussions around Bitcoin as a global reserve asset from the niche maximalist community into the mainstream.

Highlights:

- For the first time in its history, BTC reached the $100k milestone, aided by a record buying spree from MicroStrategy, which accumulated 257,250 BTC for its corporate treasury in 2024, according to BiTBO.
- The newly approved US-listed spot Bitcoin ETFs accumulated more than 500,000 BTC in 2024. In addition to the 619,000 BTC previously held by the Grayscale Bitcoin Trust, ETF products now hold over 1M BTC.
- Discussions about national Bitcoin strategies have inflamed globally since President-elect Donald Trump spoke at the BTC Nashville conference in July.

Forecast

BTC is known to behave highly cyclically. Most cycle analysts are expecting a continuation of the current Bull market with a top in Q3 of 2025. However, uncertainties about the state of the world economy remain.

If a globally synchronized downturn occurs, BTC may already be close to its cycle top. Warning signs for such a downturn would include a rising dollar, falling bond yields and deteriorating US job numbers.

Rating: POSITIVE

Sentiment:

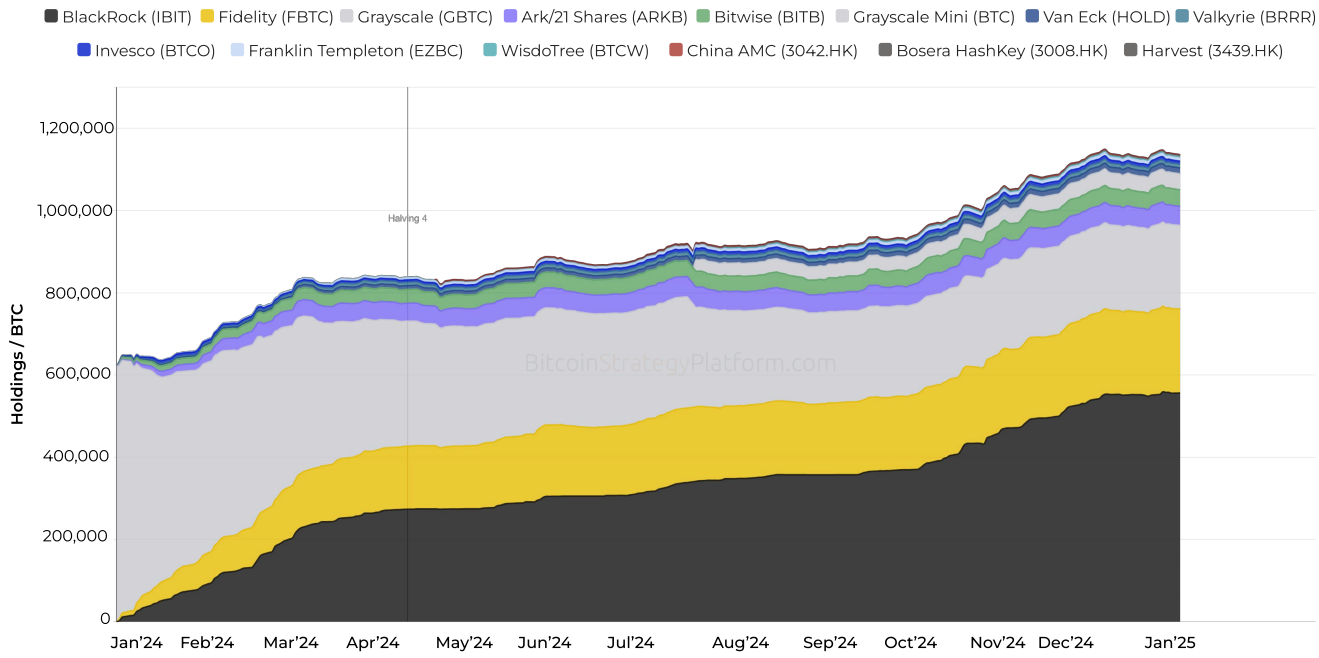
Euphoria took hold when BTC reached the $100k milestone, but sentiment cooled off around the turn of the year. The BTC rally sparked a small rotation of capital into altcoins. This has somewhat loosened the financial situation of many projects in the industry.

Analysis:

For years, Bitcoin has been widely seen as inert and uninteresting compared to more recent altcoin projects. However, in 2024, it once again monopolized the industry, evidenced by three new trends that dominated the news cycle. Firstly, interest in Bitcoin ecosystem development saw a renaissance.

New sidechains launched, Bitcoin staking technology became available, and for the first time, a ZK-proof was verified on the Bitcoin mainnet. Secondly, Bitcoin now also has the attention of traditional capital markets after US spot Bitcoin ETFs and their associated options started trading and reached an AUM of over 1.1M BTC or $100 Bn. USD (Figure 1).

Figure 1: BTC Holdings by ETF Products since Launch in January 2024

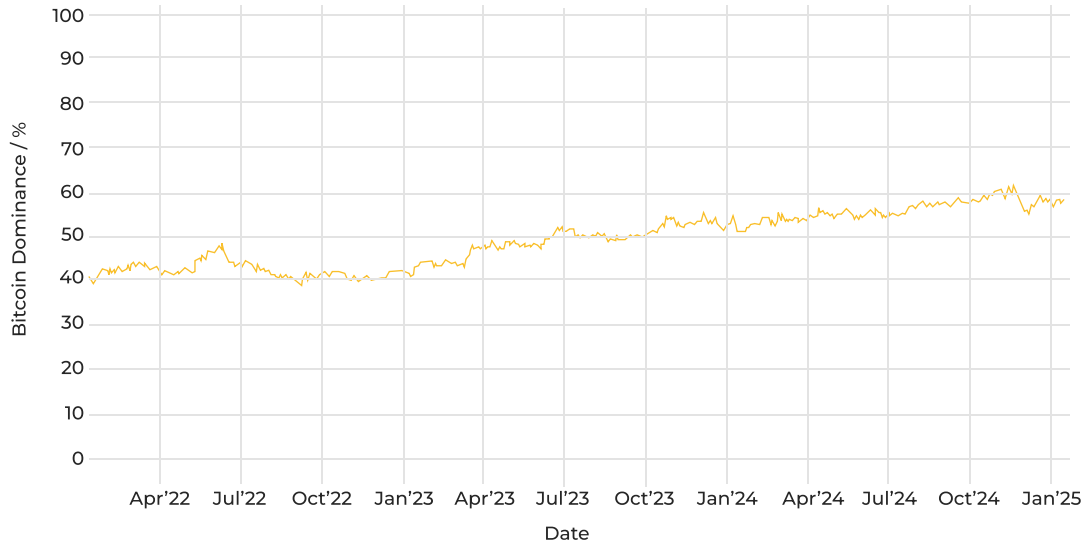


Source: *Bitcoin Strategy Substack*

This has fully integrated BTC with the most liquid pool of capital globally. Finally, with discussions of a US strategic Bitcoin reserve, the maximalist narrative has entered mainstream politics. Bitcoin is increasingly taken seriously as a sound base-layer for a new monetary system.

Throughout these developments in the news cycle, Bitcoin's dominance continued its long-term uptrend, which commenced in late 2022 (Figure 2). Besides the resurging interest in Bitcoin, this is widely attributed to the global tightening cycle that started in January 2022 and took the policy rate in the US to 5.5%.

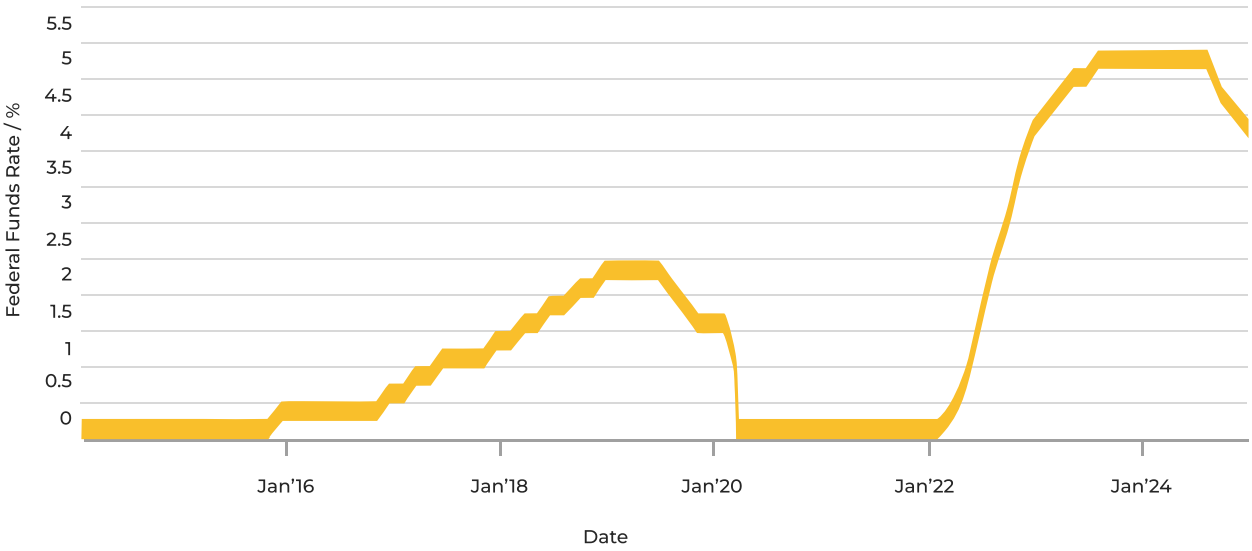
Figure 2: Bitcoin Dominance from 2022 to 2025



Source: *Tradingview*

At the time of writing, Bitcoin dominance does not seem to have much further runway because stablecoins alone make up 17.5% of the total crypto market capitalization, and dominance is already around 60%. However, if interest rates remain high due to sticky inflation or the global economy experiences a hard landing dominance will simply remain high, and the much-anticipated rotation into altcoins will not occur (Figure 3). The strong calls for a full-blown altseason from the first half of December have already faded as dominance rebounded from 55% to 58%.

Figure 3: Target Range for the Federal Funds Rate between 2014 and 2025



Source: *Federalreserve.gov*

2. Altcoins: Market Shifts, Strategic Insights, and Key Performers

Overview:

2024 was a challenging year for altcoins. Bitcoin absorbed most of the institutional inflows, and memecoins took up the attention of retail throughout the year. Nevertheless, after a prolonged Bitcoin Season, we may be on the verge of seeing an Altcoin season. The Blockchain Center's Altseason Index entered the altseason zone for the first half of December before retracing into neutral territory.

Highlights:

- The total altcoin market cap (excluding stablecoins) increased by 76% in 2024 and broke the all-time high of 2021. This growth was primarily driven by the strong performance of large-cap coins.
- Memecoins posted the highest gains among all altcoin categories in 2024. The weighted average return of the 900 largest memecoins tracked by DefiLlama reached over 1600%.
- The market entered altcoin season territory in early December after seven months of Bitcoin season. Bitcoin dominance slightly declined after reaching 61% in mid-November, the highest value since spring of 2021.

Forecast

In bull cycles, Q1 tends to be a strong quarter for ETH, so we expect the altcoin season to continue in the short term. With Trump's inauguration and the new SEC chair set to assume office in January, there is potential for an influx of funds into the crypto industry.

Rating: POSITIVE

Sentiment:

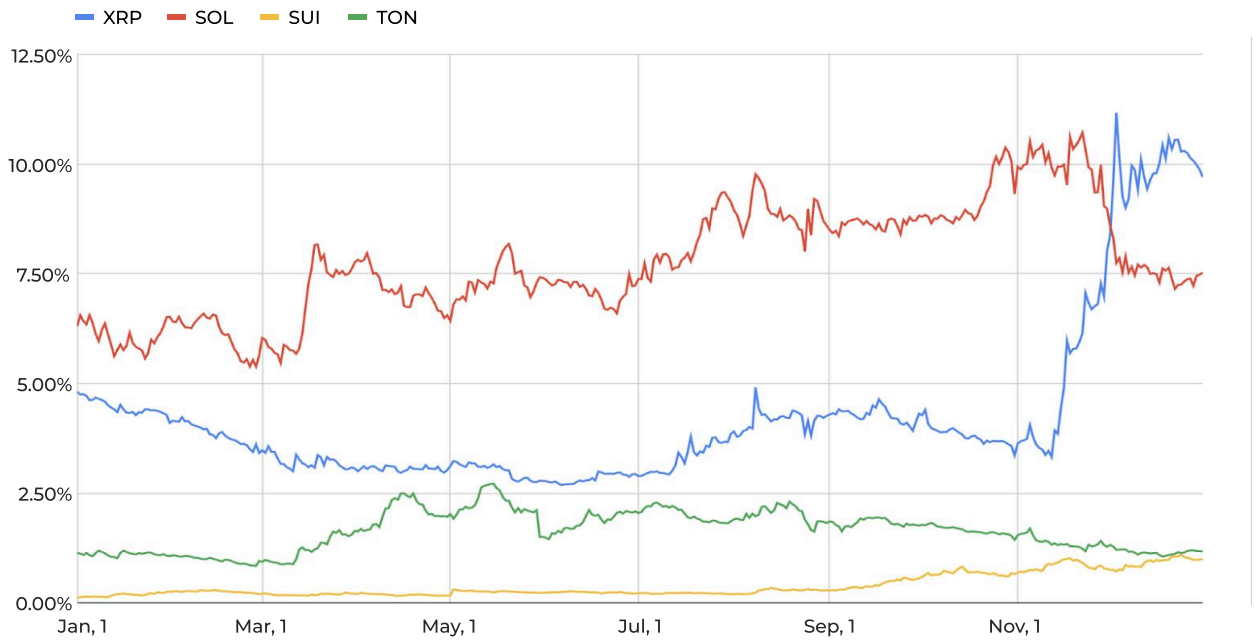
Altcoin sentiment rebounded in Q4 as Bitcoin dominance declined and the total market capitalization of the crypto market rose. Traders have long anticipated an altcoin-heavy phase of the cycle with a more risk-on attitude by market participants. This phase of the cycle may have now arrived.

Analysis:

The recent shift toward a small altseason was primarily fueled by the strong performance of large-cap coins, particularly SOL, XRP, SUI, and TON. Solana, Sui, and TON attracted new audiences of memecoin traders and retail users, which resulted in a significant rise in onchain activity. Meanwhile, XRP experienced a 300% increase following Trump's election.

Amid this strong performance, these coins achieved notable price growth and increased their dominance relative to the broader altcoin market (Figure 4). Some new coins with multibillion-dollar valuations also emerged and contributed to the slight drop in Bitcoin dominance toward the end of 2024 (e.g., HYPE, ENA).

Figure 4: XRP, SOL, SUI and TON's Share of Total Altcoin Market Cap (Dominance) in 2024

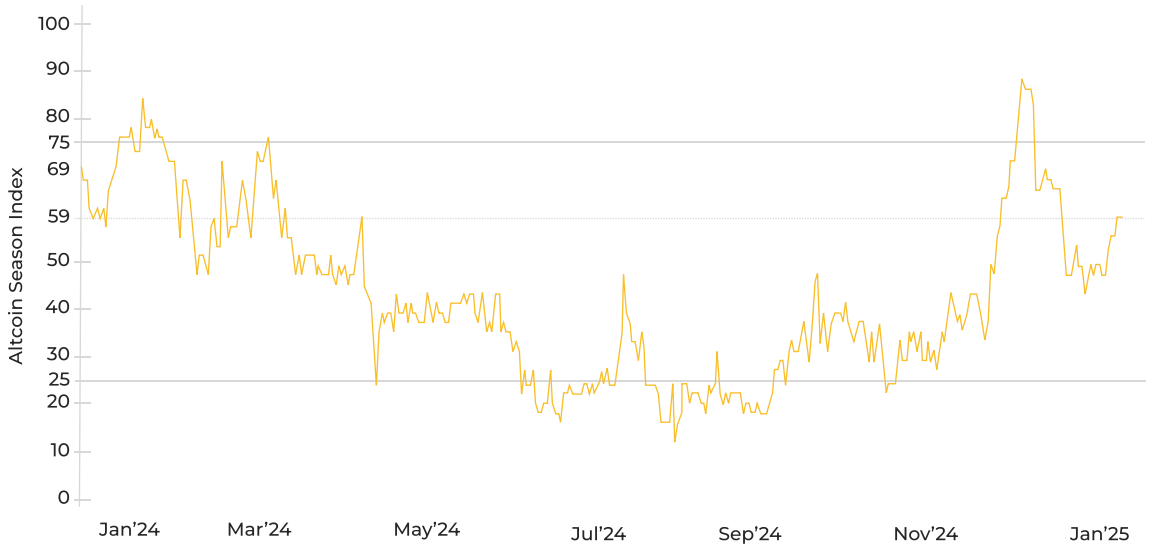


Source: *Cointelegraph Research*, *Coingecko*, *Crypto Atlas*

Sector analysis reveals that memecoins were the best-performing category of altcoins in 2024. The market cap weighted price performance of the 900 largest memecoins was more than 1600% year-to-date (Figure 5). However, this number excludes the vast number of unsuccessful launches on platforms such as Pump.fun or Moonshot. 98% of 5.2 million tokens launched on pump.fun failed and went to zero.

Nonetheless, the share of the total crypto market capitalization held by memecoins has risen to nearly 3%, up from 2% in March. Although this percentage remains relatively small, the memecoin trend attracted significant attention from retail investors.

Figure 5: Altcoin Season Index between Jan, 2024 and Jan, 2025

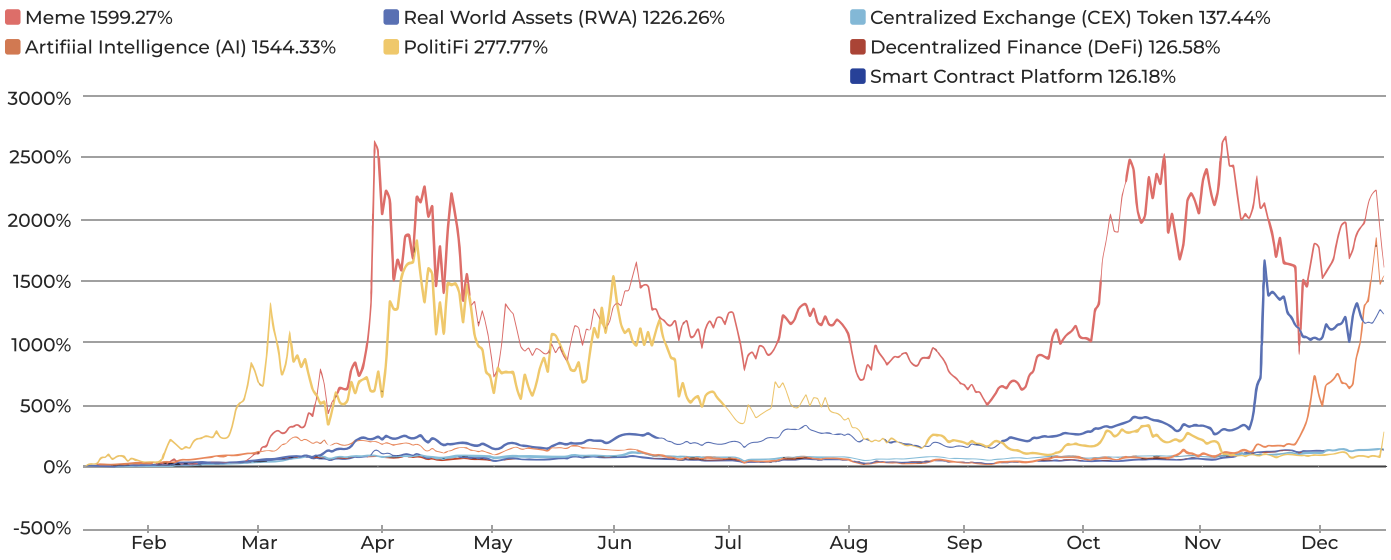


Source: *Blockchaincenter.net*

While retail investors focused on memecoins and Bitcoin absorbed the majority of institutional capital inflows, technology-driven, VC-backed projects showed significantly worse price performance (Figure 6). Both DeFi and smart contact platforms have underperformed BTC on aggregate. Among the reasons for the poor performance of such tokens are significant token unlocks, lack of onchain activity, and tight macroeconomic conditions.

Ether, traditionally a bellwether for altcoins, significantly lagged behind Bitcoin even despite the launch of spot ETH ETFs. VC-backed projects faced poor dynamics because retail investors became disappointed with long vesting schedules and significant unlocks.

Figure 6: Cumulative Price Performance of Different Altcoin Categories in 2024



Source: *DefiLlama*

3. RWA Tokenization Surges 85% in 2024, Bridging TradFi and Blockchain

Overview:

In 2024, the RWA tokenization market saw unprecedented growth, fueled by advancements in blockchain infrastructure and increasing institutional adoption. The total value of tokenized real-world assets surged by 85% to over $19 billion. This marked a turning point in the integration of traditional finance (TradFi) with decentralized technologies. Major new issuance took place in the areas of tokenized credit, real estate, and tokenized treasuries.

Highlights:

- The tokenized RWA market grew by 85% year-over-year, reaching over $19 billion in total value (excluding stablecoins) (Figure 7). Private credit accounted for the largest share, followed by tokenized treasuries and real estate (Figure 8).
- Ethereum and ZKsync Era combined hold more than 80% of the total RWA tokenization market (Figure 9).
- In 2024, the European Investment Bank issued a $100 million tokenized digital bond on Ethereum. This project showcased the viability of blockchain for compliant high-value financial instruments.

Forecast

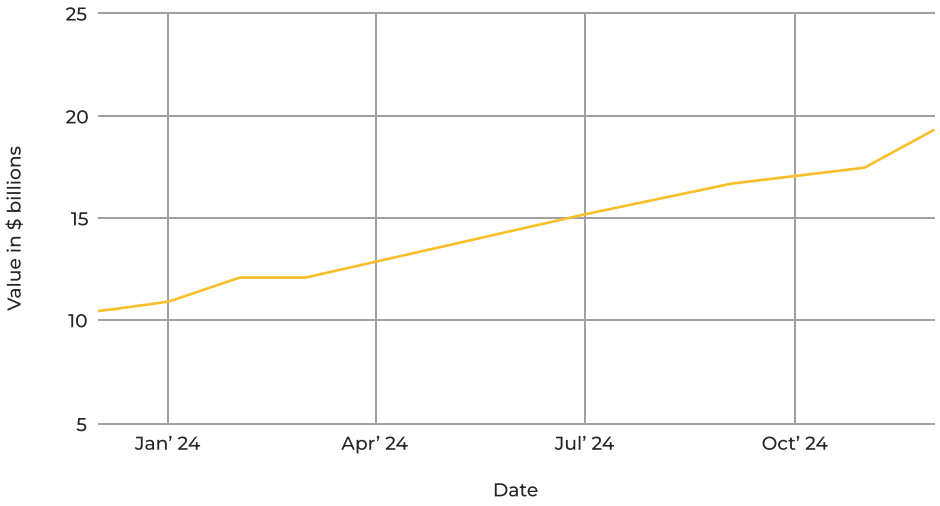
The RWA tokenization market has the potential to exceed a capitalization of $50 billion in 2025, thanks to the expected expansion of tokenized bonds and real estate. By 2030, the tokenized RWA market could reach $1.3 trillion if it sustains its current CAGR.

Rating: POSITIVE

Sentiment:

The market is optimistic about RWA tokenization due to its transformative potential to bridge crypto and traditional finance. This sector's robust expansion comes amid a shift in overall crypto adoption as major banks and traditional financial institutions, such as HSBC, BlackRock and Franklin Templeton, have entered the industry.

Figure 7: RWA Market Growth YoY



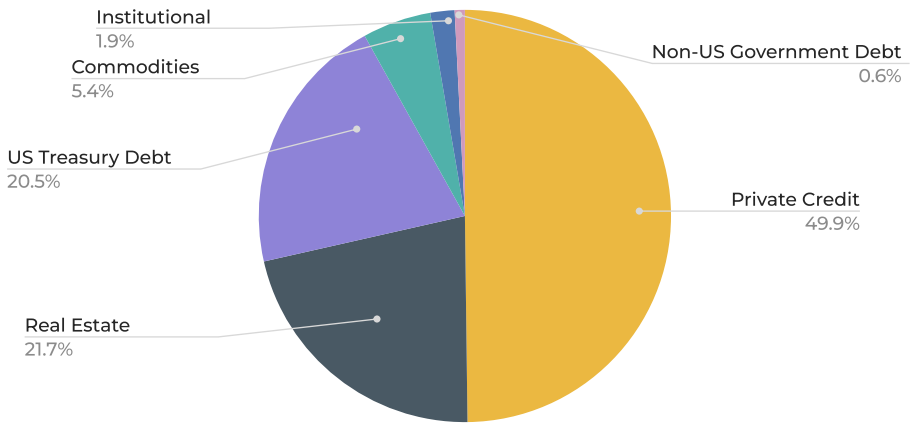
Source: *rwa.xyz*, *Custom Market Insights*

Analysis

RWA tokens saw robust issuance in 2024, and their total value is now nearly $20 billion (Figure 7). The market capitalization of tokenized US treasuries surpassed $3.8 billion, a nearly 400% year-over-year increase. This surge was largely fueled by the high-yield environment. The Federal Reserve's decision to maintain the federal funds rate in the 4.75–5.5% range for most of 2024 kept short-term treasury yields between 4.5% and 5.4%.

As a result, tokenized T-bills became attractive to both institutional and retail investors in search of stable, risk-adjusted returns. Fractionalization significantly lowered the entry barriers for such products, from the typical $100 to $10,000 minimum purchase requirements in traditional T-bills to tokenized fractions potentially as small as $10.

Figure 8: Breakdown of the RWA Market

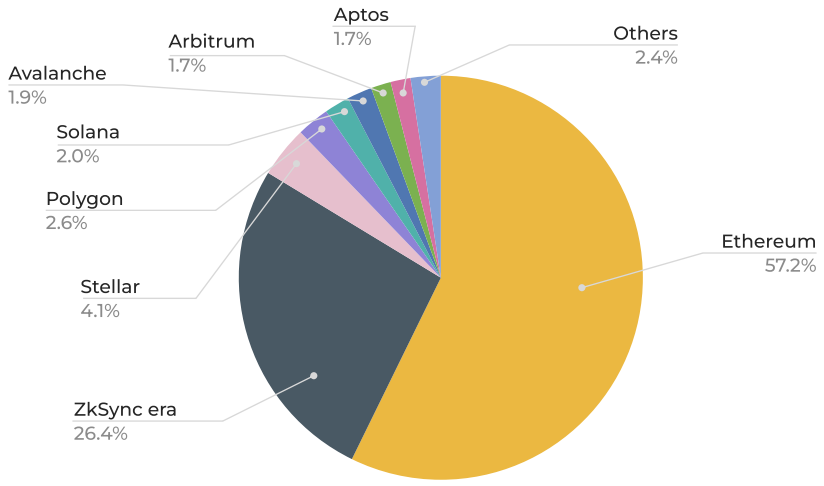


Source: *rwa.xyz*, *Prophecy Market Insights*

In 2024, tokenized real estate also attracted heightened attention in Asia and the UAE. This was underpinned by progressive regulations and rising institutional interest. In Japan, Kenedix successfully completed its 12th real estate STO, targeting 484 rental homes in Tokyo, while Mitsui Bussan Digital Asset Management tokenized three residential properties valued at 1.7 billion yen. Meanwhile, in Dubai, major real estate company MAG partnered with Mantra to tokenize $500 million worth of luxury properties. These and other developments drove the market capitalization of tokenized real estate up 50% year-over-year to above $4 billion.

Technological progress in 2024 significantly enhanced the infrastructure for RWA tokenization. Following Ethereum's "Cancun" upgrade (which introduced EIP-4844 or "proto-danksharding") and further optimizations on layer-2 networks, onchain transaction costs dropped by more than 50% from the 2023 levels. This made the issuance and trading of tokenized assets more frictionless. As a result, the secondary market activity for RWAs grew sharply, and platforms that specialize in private credit, such as Securitize, reported more than $1 billion in secondary trades throughout 2024.

Figure 9: Leading Blockchain Networks for Tokenized Assets



Source: *rwa.xyz*

4. DePIN and AI Agents See Explosive Growth, DeSci Lags in 2024

Overview:

DePIN projects saw their revenues surge over 100-fold to $500 million annually in 2024. The total number of DePIN devices reached over 13 million. Simultaneously, the market capitalization of AI agents rose by 222% in Q4. It climbed from $4.8 billion in October to $15.5 billion by December. Of the three emerging technology sectors, DeSci had the slowest growth. The top 2 projects that currently dominate the sector, namely, BIO Protocol and OriginTrail, account for 50% of the sector's market capitalization.

Highlights:

- BIO Protocol, a project for decentralized biomedical research, and OriginTrail, a protocol for secure data exchange, now control 50% of the market capitalization of the DeSci sector.
- Borderless Capital launched a $100M DePIN fund with support from the Peaq and Solana Foundation.
- In 2024, over 13 million devices contributed to DePINs daily, with 20 projects surpassing 100,000 active nodes and five exceeding 1 million active nodes.
- Render Network has emerged as the leading DePIN project, providing decentralized GPU computing with a market cap of $3.21 billion and over 170,000 holders.
- The market cap of AI agents surged by 222% in Q4 2024, reaching $15.5 billion. The Solana network captured 56.48% of the market, at $8.44 billion.

Forecast

If use cases become more defined, emerging technologies will see deeper integration with mainstream industries in 2025. Cross-sector innovations like AI x DePIN will likely dominate since they offer the most high-growth opportunities. AI agents will play critical roles in content creation, and DePIN networks will scale into RWA markets, but DeSci will be met with resistance from traditional academia.

Rating: NEUTRAL

Sentiment:

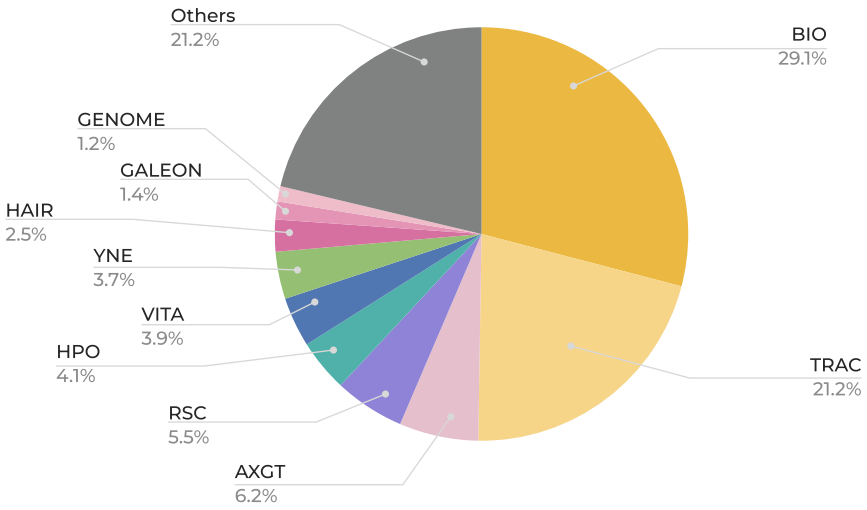
In 2024, the integration of some emerging technologies with the crypto space showed strong momentum. While the DeSci sector stalled, DePIN networks scaled up in size, and the valuations of AI agent projects exploded. As the blockchain infrastructure for this sector matures, the sector could become a key driver of broader crypto adoption.

Analysis:

The Decentralized Science (DeSci) sector expanded its presence in 2024, with BIO Protocol and OriginTrail (TRAC) reaching market capitalizations of $440 million and $320 million, respectively. Together, they now account for over 50% of the total DeSci market, which sits at ~$1.43B (Figure 10). To promote active engagement, the BIO Protocol employs a curation system in which community members vote on which projects to prioritize, ensuring that resources are directed toward the most promising and significant scientific initiatives.

This model aims to reduce reliance on centralized institutions and create a more transparent, accessible system for sharing and verifying scientific data. OriginTrail's decentralized knowledge graph has expanded its adoption across supply chain management and AI-driven applications. The increasing valuation of these projects shows the growing recognition of DeSci's potential to reshape scientific research through blockchain-based infrastructure.

Figure 10: BIO Protocol and OriginTrail (TRAC) Account for Over 50% of the Total DeSci Market



Source: *Coingecko*

However, despite its promise, DeSci struggled to scale beyond niche adoption in 2024 due to structural issues with incentives and funding. One example is ResearchHub, a DeSci platform that raised $5 million in 2023 to help researchers monetize their work through token incentives.

Nature, a top-cited scientific journal with nine million monthly readers, pointed out that some reviewers made more on ResearchHub than in academia. The system encouraged more activity, not better research. This raised concerns that financial rewards were driving engagement at the expense of academic standards.

Funding constraints also hindered the expansion of DeSci. While projects such as AminoChain raised $5 million an LabDAO secured $3.6 million, these figures pale in comparison to traditional R&D costs. Deloitte estimates that developing a new drug can cost up to $2.3 billion, with no guarantee of market success.

Unlike biotech and pharmaceutical firms, which operate within established IP frameworks and attract large-scale institutional funding, DeSci remains dependent on volatile token markets and fragmented community funding. This makes it ill-suited for long-term, capital-intensive research, such as drug development or large-scale physics experiments.

Still, DeSci may hold value for smaller, early-stage research initiatives, particularly in fields that struggle to secure institutional funding. By crowdsourcing resources and decentralizing data access, DeSci could support independent labs, open-source drug discovery, and underfunded research areas that traditional models often overlook. While token-based funding may not replace large-scale grants, it provides an alternative for researchers seeking new funding pathways outside academia and corporate R&D.

A similar shift toward decentralized funding models fueled DePIN's rapid expansion in 2024, with the sector surpassing 13 million connected devices. More than 20 projects had 100,000 active nodes, with five exceeding 1 million nodes (Figure 11).

This growth attracted major institutional backing and venture capital investments from firms like Pantera, Multicoin Capital, and Coinbase. Borderless Capital's $100 million DePIN fund, supported by Peaq and the Solana Foundation, reinforced confidence in decentralized infrastructure.

Render Network became one of the top DePIN projects, offering decentralized GPU computing and exceeding a $3.5 billion market capitalization. Meanwhile, Helium Network also scaled rapidly, handling 88,000 GB of data from US mobile carriers by the end of Q3—a 10,202% increase.

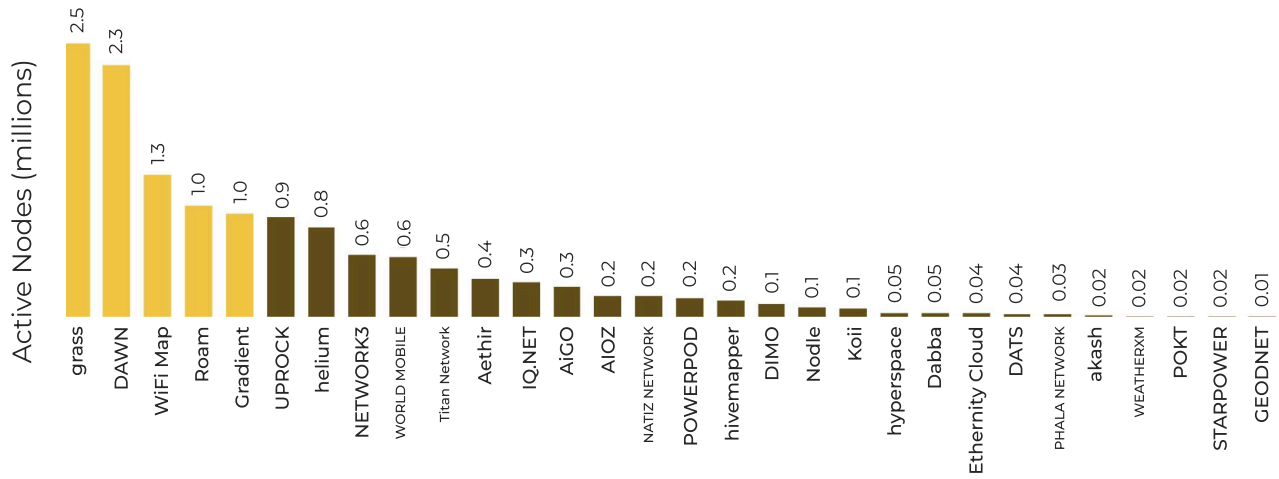
Its Helium Mobile service also saw growth, with 116,000 subscribers signing up for unlimited talk and text. Grass, another standout project, expanded decentralized internet-sharing infrastructure, allowing users to monetize unused bandwidth for AI model training.

By late 2024, it had over 2.5 million user-run nodes and had launched a major airdrop campaign that distributed 10% of its token supply to 1.5 million users. This reinforced the incentive-driven growth model and saw the grass token rise by over 317%.

Beyond digital infrastructure, DePIN also began reshaping traditional industries, particularly EV charging networks. While Tesla's proprietary Supercharger network gives it a competitive advantage, concerns over potential market monopolization could arise.

To address this, companies such as ChargePoint and Electrify America have adopted DePIN models, allowing multiple investors and partners to fund and expand charging networks. Unlike Tesla's closed system, which serves only its vehicles, this decentralized approach ensures a broader distribution of charging stations, improving accessibility for all EV owners and creating a more balanced, competitive market.

Figure 11: Global Usage Statistics on DePin



Source: *The 2024 DePIN Development Report*

Just as DePIN began to transform infrastructure, AI agents revolutionized automation in 2024. In just a few months, their market capitalization surged by 222% in Q4 to reach $15.5 billion. Solana benefitted from this adoption and captured 56.48% of the market, equivalent to $8.44 billion.

One of the most successful examples of AI agent projects was Virtuals.io. The platform introduced a launchpad for AI agents with a built-in co-ownership model. Users can create, deploy, and monetize entertainment-focused AI agents on the platform, each backed by a dedicated token. 1 Billion native tokens were issued through Initial Agent Offerings (IAOs), which users could purchase, trade, and govern.

This system encouraged community-driven AI development by rewarding the most successful agents with VIRTUAL token emissions. Luna, one of Virtuals.io's top-performing AI agents, became a fully autonomous influencer, amassing over 500,000 TikTok followers by generating AI-driven content and engaging users 24/7.

Luna's success was a proof-of-concept for Virtuals.io's business model. It proved that AI agents can continuously generate revenue through affiliate marketing, sponsorships, and token buyback mechanisms.

5. Crypto Stocks: Mixed Performance and Key Indicators to Watch

Overview:

Crypto stocks had a mixed year in 2024. Some companies outperformed Bitcoin, while others greatly underperformed. MicroStrategy, being the biggest outlier, saw its stock jump 400% thanks to its aggressive Bitcoin buys. Marathon Digital also displayed good performance after emulating MicroStrategy and raised $1 billion through convertible senior notes. Most mining firms, however, struggled to keep pace with Bitcoin's returns post-halving. Heading into 2025, the sector's outlook depends heavily on macroeconomic conditions and on whether the Trump administration implements supportive policies.

Highlights:

- MicroStrategy's Bitcoin holdings surpassed 440,000 BTC after the company purchased 149,880 BTC in Q4 of 2024. The stock surged by more than 400% over this period and thus significantly outperformed BTC's 125% yearly performance.
- Bitdeer posted a $50.1 million net loss in Q3 of 2024, compared to a $1.8 million net loss in Q3 2023. This was due to rising R&D costs and halving impacts.
- Bitfarms reported a 30% YoY revenue increase to $45 million in Q3 of 2024 but still posted a $37 million net loss as production costs soared to $52,400 per BTC.

Forecast

If President Trump maintains a crypto-friendly stance and pushes for policies and legislation that reduce regulatory hurdles, the stock performance of crypto miners and related companies could benefit.

Additionally, as the global shift toward renewable energy accelerates, Bitcoin mining companies that adopt sustainable practices are likely to attract more investment and achieve better financial performance in 2025.

Rating: POSITIVE

Sentiment:

The sector exhibits cautious optimism. Strong performers such as MicroStrategy and Marathon Digital highlight the potential upside, while miners like Bitfarms and Bitdeer contend with profitability pressures from rising costs and halving effects. The outlook for 2025 hinges on evolving macroeconomic conditions and the industry's ongoing transition toward greater energy and ASIC efficiency.

Analysis:

MicroStrategy emerged as a standout performer, with its aggressive Bitcoin acquisition strategy that contributed to around a 400% surge in its stock price. Strategic debt financing and its positioning as a Bitcoin proxy helped attract significant investor interest.

Furthermore, hedge funds have increasingly turned to MicroStrategy for convertible arbitrage strategies, leveraging the company's bonds while shorting its stock to capitalize on volatility in its underlying asset. This shows how closely the company's performance depends on Bitcoin's value, making it both an opportunity and a risk.

Marathon Digital (MARA) was the first Bitcoin miner to adopt a strategy inspired by MicroStrategy's debt financing approach.

The company issued convertible senior notes worth $1 Bn and raised $980 million in net proceeds via private placement under Rule 144A.

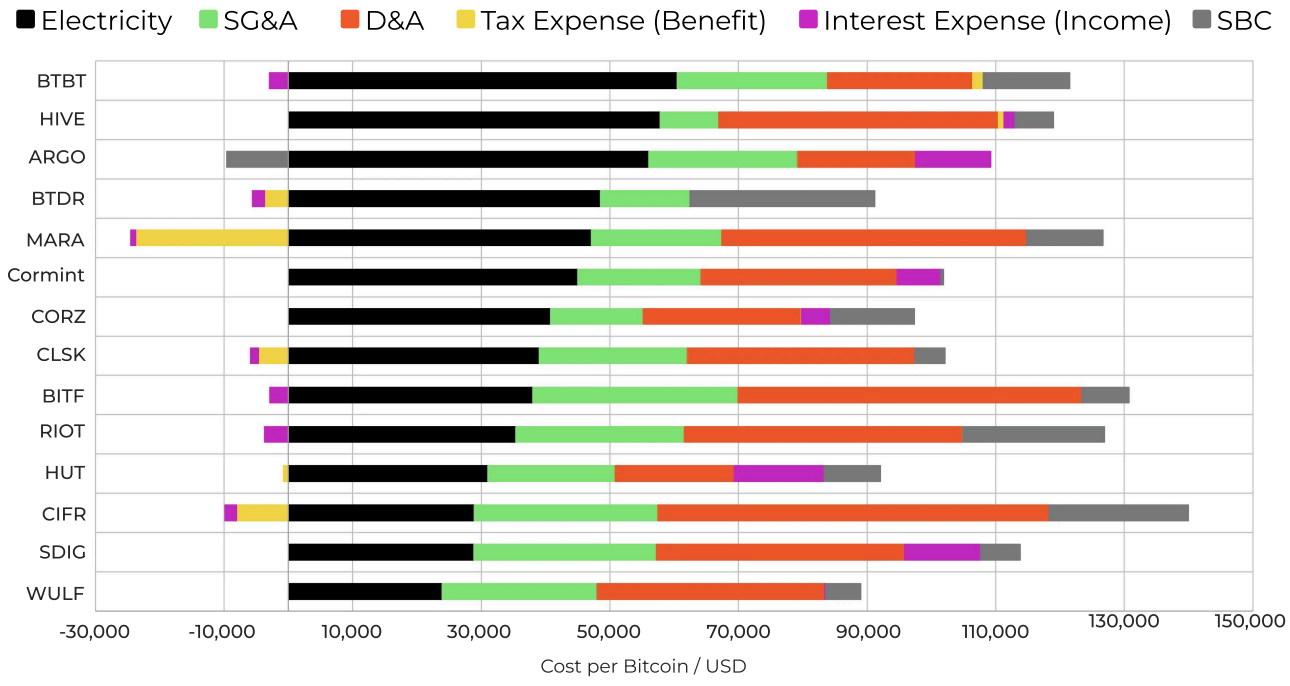
Of this, $199 million refinanced $212 million of MARA's existing 2026 convertible notes, while the rest funded Bitcoin acquisitions, strategic expansions, and debt repayment. The notes, convertible into cash or equity, carried a 42.5% premium over MARA's stock price at issuance.

MARA also deployed 7,377 BTC—16% of its reserves—through a lending program to generate yield and manage costs. In 2024, the program helped cover operating costs by generating $3.9 million in Q3 and $4.8 million in the year's first half.

Rising costs and shrinking revenue are making it harder for Bitcoin miners to stay profitable as competition heats up and expenses grow. In 2024 the cost of mining Bitcoin increased significantly in Q3 2024, with the weighted average cash cost reaching $55,950, up from $49,500 in Q2, marking a 13% rise.

Including non-cash costs such as depreciation and stock-based compensation, total costs surged to $106,000 per Bitcoin (Figure 12).

Figure 12: Breakdown of Bitcoin Mining Costs for Key Market Players



Source: *Coinshares*

Both Bitdeer Technologies and Bitfarms faced a challenging 2024, as profitability pressures from rising costs and the Bitcoin halving event collided with their operational and strategic ambitions (Figure 13).

However, their price trajectories tell different stories. Bitdeer Technologies saw its stock climb over 165% despite reporting a $50.1 million net loss in Q3 2024. The company's electricity costs increased from $32/MWh to $41/MWh, as R&D expenses ballooned to $24.8 million, largely due to SEAL02 chip development. These pressures pushed gross margins down to 4.5% from 24.2% and further strained finances.

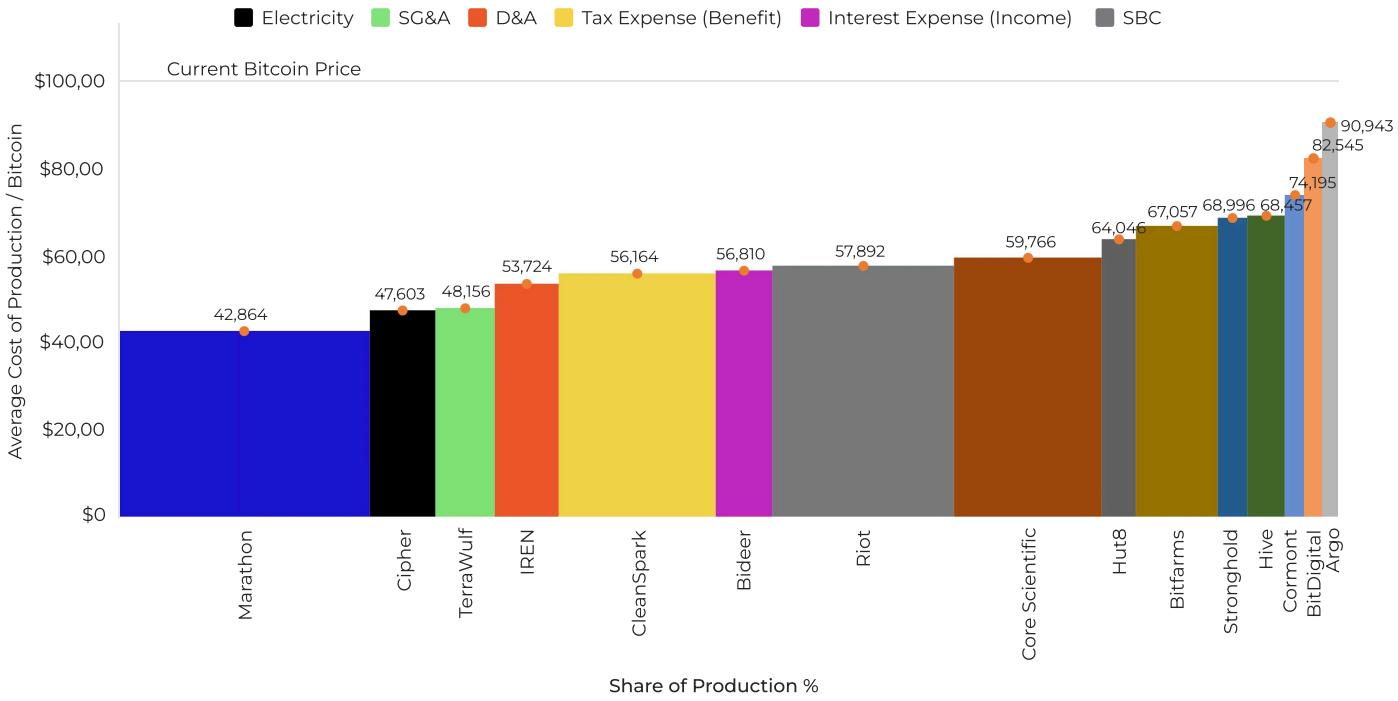
While Bitdeer's stock climbed, Bitfarms' stock price took a hit and closed the year down 48.4%

Although corporate revenue was up by 30%, Bitfarm's gross margins dropped to 38% while operating expenses surged by 230% YoY.

This widened its net loss to $36.6 million, up from $16.5 million in Q3 2023. Like Bitdeer, Bitfarms also cited rising electricity costs and increasing network difficulty as key reasons for declining profitability (Figure 13).

To stage a comeback, the company plans to upgrade 18,853 miners to Bitmain's S21 Pro models by early 2025. It also made a $125 million acquisition of Stronghold Digital Mining, which includes two Pennsylvania power plants with 165 MW of combined capacity. Despite challenges, Bitfarms holds $72.6 million in Bitcoin and maintains $146 million in total liquidity, which provides a buffer against mounting costs.

Figure 13: Average Cost of Bitcoin Production across Public Miners



*Cash costs (not including depreciaiton & stock based compensation)

Source: *Bloomberg, Coinshares, data available as of close 13 December 2024*

6. Crypto Regulation: MiCA Reshapes EU, US Becomes Business-Friendly

Overview:

In the EU, the enforcement of the MiCA framework introduced strict compliance standards that are aligned across the member states. The new measures stop user anonymity and benefit bigger businesses with existing compliance departments. For smaller ventures, they incur significant overheads. In the US, crackdowns on crypto companies by the SEC have been waning since the departure of Gary Gensler, coupled with the FIT21 act, which could limit the authority of the SEC; this development makes the US a more attractive destination for cryptocurrency businesses in the upcoming year.

Highlights:

- The MiCA framework entered into force in the EU and unified requirements for crypto asset providers. MiCA mandates that a company open an office in the EU, adhere to AML guidelines and follow the rules on marketing materials to serve EU-based clients.
- The SEC's discretion over the crypto market will be curtailed if the FIT21 crypto bill passes through the US Senate. The bill aims to split the crypto oversight between the CFTC and the SEC.
- The SEC closed its cases against Consensys and Paxos, while the Wells notice issued to Uniswap in April has not been followed by legal action at the time of writing.

Forecast

In 2025, smaller crypto businesses will likely struggle in Europe and move their operation overseas. The US might become one of the more attractive destinations given the potential decrease in SEC's outreach and the pro-crypto stance of the new administration.

Rating: NEUTRAL

Sentiment:

The cryptocurrency market is now viewed as part of the global financial system by regulators worldwide, which has set the ball for crypto-specific legislative frameworks. This could help attract significant liquidity to the market but comes at a cost of abated privacy and harsher conditions for new startups.

Analysis:

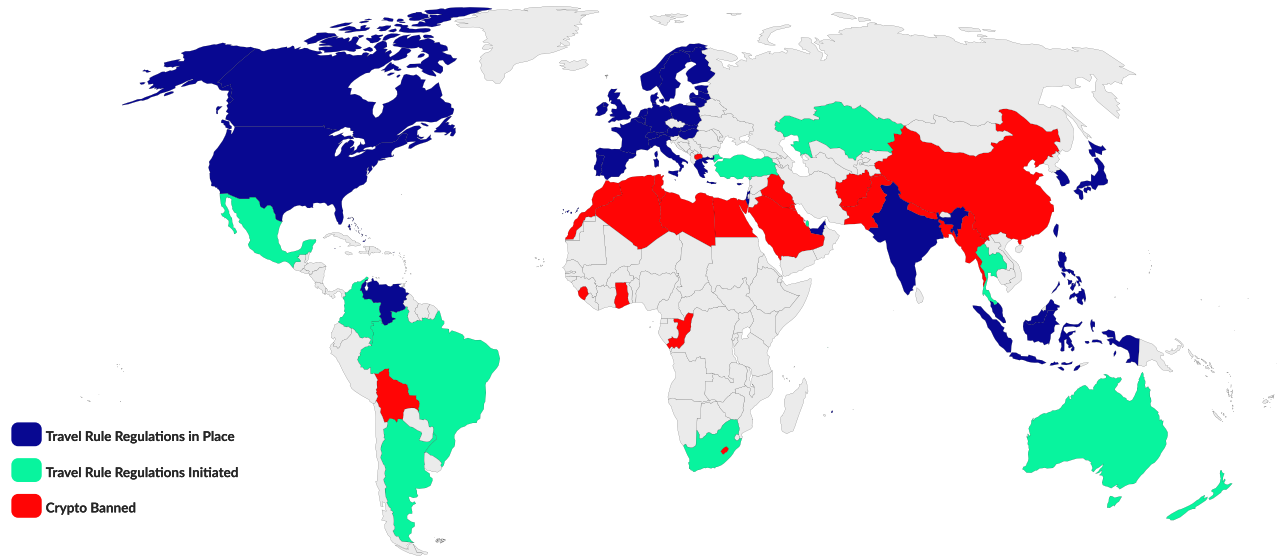
The Travel Rule for cryptocurrency transactions, which has been effective in the EU since Dec. 30, restricts cryptocurrency asset providers (CASPs) from offering anonymous crypto transfers in the region. The Travel Rule was first introduced as a more general principle by FinCEN, a bureau of the US Treasury.

The regulation mandates that CASPs store the originator's full name, address and an additional identifier alongside information on the beneficiary, irrespective of the value of the transaction.

The costly implementation of the rule puts smaller CASPs in the region at risk.

It contrasts with the US, the UK, Switzerland, and Canada, where the Travel Rule only applies to transactions below a certain threshold. In the future, the Travel Rule is likely to expand further as Australia, Mexico, and multiple other countries are currently considering its implementation under pressure from US authorities (Figure 14).

Figure 14: Travel Rule Regulation Worldwide



Source: *21 Analytics*

The Markets in Crypto-Assets (MiCA) framework outlines requirements for institutions that offer crypto services. It entered its enforcement stage in the EU in 2024 (Figure 15).

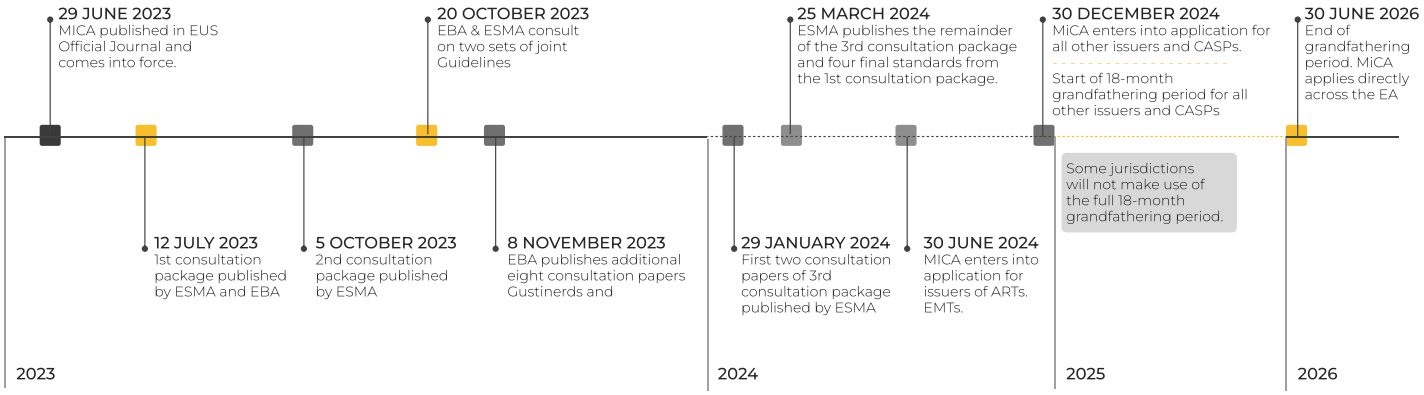
MiCA's goal is to align crypto regulation across EU member states and provide licenses for the entire region. Under MiCA, CASPs will have to open an office in the EU, adhere to marketing communication requirements and implement data security services. In the transitional phase, MiCA allows countries to opt for a grandfathering period of up to 18 months, during which they can still operate under existing legislation. Most countries have opted for at least 6 months.

Regulatory oversight on stablecoins also emerged as a global trend last year. In Europe, algorithmic stablecoins have been outlawed with MiCA and fiat-backed stablecoins are required to be fully collateralized by liquid reserves.

Furthermore, entities willing to issue stablecoins are obliged to authorize the token prior to its listing. This recent tightening of restrictions has put USDT and other stablecoins into a gray zone in the EU as they are obliged to hold at least 30% of their collateral as cash in a segregated account with a credit institution.

Their future is likely to become clearer over the 18-month transitional phase of MiCA (Figure 15). Other countries that issued legislative directives on stablecoins included Switzerland, the UK, the UAE, Hong Kong and Brazil.

Figure 15: MiCA Regulation Implementation Plan



Source: *XReg Consulting*

7. DeFi Rebounds: TVL Surges 118% Amid Market Recovery

Overview:

After a prolonged period with challenging conditions for DeFi, including regulatory uncertainty and a market downturn, the sector began to rebound at the end of 2024. In the face of a broader market recovery and technological advancements in liquid staking and restaking, the total value locked (TVL) in DeFi rose by 118% to $185 billion. Decentralized exchanges (DEXs) reflected this recovery with a 165% increase in trading volumes.

Highlights:

- The total value locked (TVL) in DeFi rose by 118% year-over-year to over $185 billion. This was driven by the rise of liquid staking, restaking and the strong performance of lending markets (Figure 16).
- Derivative DEXs recorded a 328% year-over-year increase in trading volumes from January to November 2024. This reflects a resurgence in speculative activity amid improving market conditions.
- The number of transactions on the leading layer 2 networks—Arbitrum, Base, and Optimism quadrupled last year (Figure 17).

Forecast

The DeFi sector is poised for transformative developments in 2025 and was projected to reach a TVL of over $200 billion in a recent VanEck report. DEXs will also likely see a substantial increase in trading volumes, over $4 trillion, and capture about 20% of the overall cryptocurrency trading market.

Rating: POSITIVE

Sentiment:

The DeFi market was imbued with new optimism in 2024, as the sector's performance improved in the latter part of the year. DEXs narrowed the gap with centralized exchanges in terms of their share of the total trading volume. The latter rose from 9% to 14.5% and surpassed $2.5 trillion annually.

Analysis:

The DeFi market managed to maintain sustained growth in 2024, driven by the increased adoption of liquid staking, the advent of restaking and increased lending activity.

Liquid staking products were one of the major trend shapers in DeFi last year. The assets locked in liquid staking doubled from $30 billion in December 2023 to $60 billion in December 2024 and now make up around 30% of DeFi TVL (Figure 18).

This was attributed to the robust performance of major players, such as Lido and Rocket Pool, as well as the surge of liquid staking on BNB and Solana. The increased adoption of liquid staking tokens (LSTs) and their derivatives as collateral on lending and trading platforms further amplified this trend and significantly contributed to the overall growth of the sector.

Restaking, a major innovation pioneered by EigenLayer, lets users compound their staking rewards by staking staked assets a second time. This has given rise to additional security infrastructure for smaller chains, crosschain transaction processing and oracles. At the time of writing, restaking represents around 14% of the total TVL in DeFi (Figure 18).

Over 5 million ETH, currently valued at $17 billion, is locked in restaking, accounting for over 9% of Ethereum's total staked supply.

The rise of liquid staking and restaking was closely tied to the Ethereum ecosystem's improved scalability through layer-2 solutions and the introduction of EIP-4844. This upgrade, aimed at improving transaction throughput and reducing costs, also benefitted restaking protocols. It managed to reduce their associated transaction costs by more than 90%.

DEXs also saw substantial growth in 2024. Their aggregated monthly trading volume exceeded $350 billion in December 2024, marking a 165% year-over-year increase (Figure 19). This surge was driven by the broader market rebound in the latter half of the year and reduced onchain transaction costs.

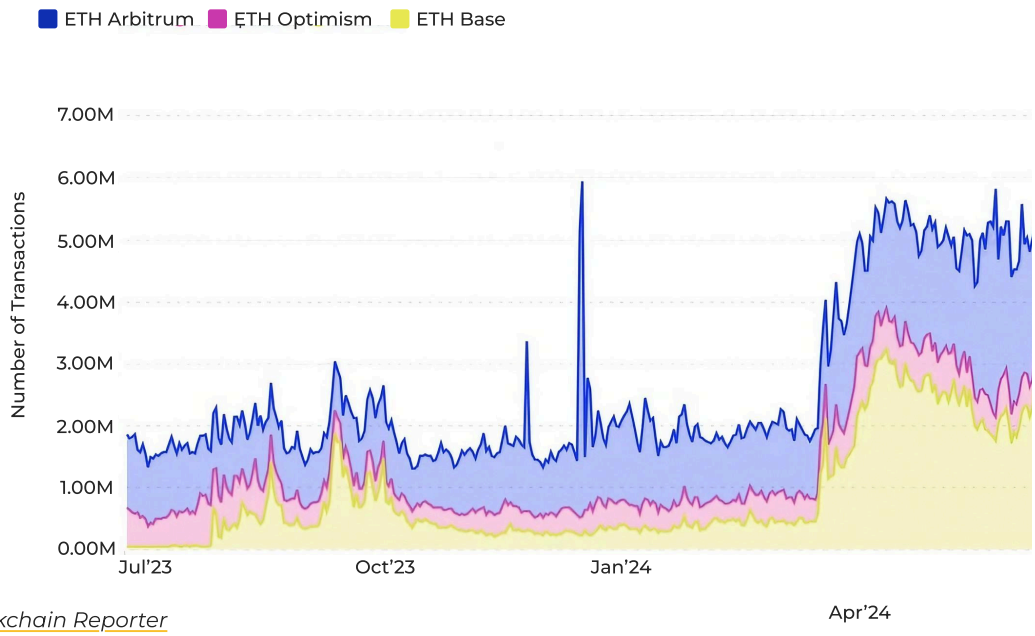
Additionally, there was increased trading activity on chains such as Solana, Base and SUI/Aptos. Orca, Lifinity, Aerodrome and Cetus captured about 15% of DEX's trading volume last year compared to less than 0.5% a year earlier. As a result, the DEX to CEX spot trading volume ratio was at around 14% in 2024 compared to 9.5% a year earlier.

Figure 16: Total Value Locked in DeFi in 2024



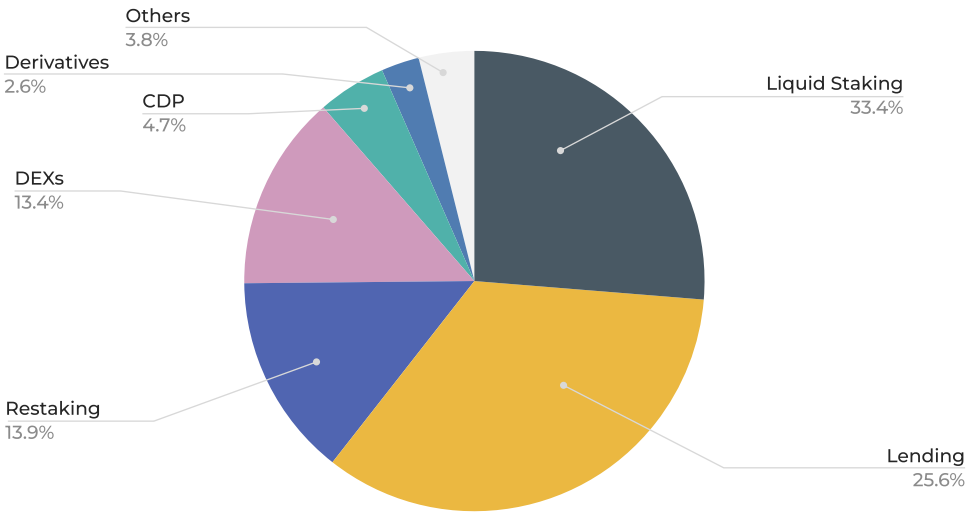
Source: *DeFiLlama*

Figure 17: Number of Transactions on Ethereum L1 and L2s (Arbitrum and Optimism)



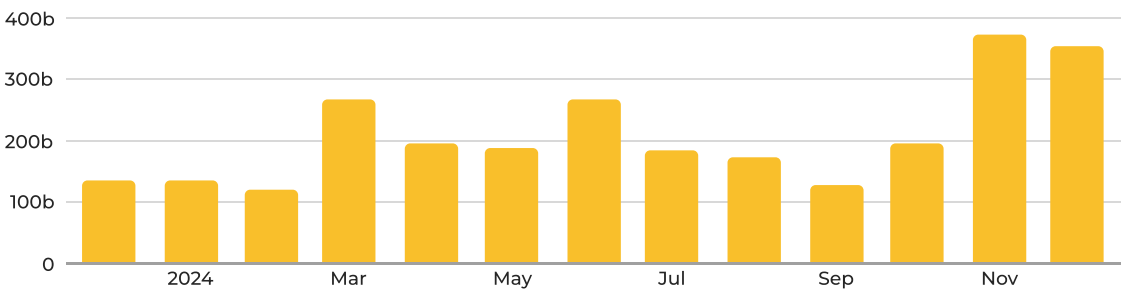
Source: *Blockchain Reporter*

Figure 18: DeFi TVL Breakdown by Category (December 2024)



Source: *DeFiLlama*

Figure 19: DEX Monthly Trading Volumes 2023 to 2024



Source: *DeFiLlama*

Conclusion:

2024 marked a pivotal year for the cryptocurrency industry, as Bitcoin cemented its role in traditional finance through the launch of US-traded spot Bitcoin ETFs, signaling a maturation of the asset class.

While Bitcoin dominated institutional inflows, the altcoin market faced headwinds, with memecoins standing out as an exception, delivering extraordinary returns.

Crypto stocks showed uneven performance, reflecting the broader market's mixed conditions, but companies like MicroStrategy and Marathon Digital demonstrated the potential of strategic Bitcoin integration. Meanwhile, DeFi rebounded strongly toward the year's end, setting the stage for significant growth and innovation in 2025.

The regulatory landscape evolved dramatically, particularly with the EU's MiCA framework imposing stricter compliance measures. At the same time, the US took a more favorable turn with the potential curtailment of SEC authority and the emergence of a pro-crypto administration.

These developments may drive a geographic shift as smaller European ventures seek more accommodating environments, with the US emerging as a key hub for crypto businesses.

The cryptocurrency industry faces a dynamic and transformative 2025. Bitcoin is poised to remain the flagship asset, and discussions around its role as a global reserve asset are likely to intensify.

Altcoins may regain momentum as the market enters a potential Altseason, creating opportunities for innovation beyond Bitcoin's dominance. DeFi is positioned for further expansion, with TVL projected to exceed $200 billion and DEXs capturing a larger share of trading activity.

However, the industry's trajectory will depend heavily on macroeconomic conditions, regulatory clarity, and technological advancements, particularly in energy-efficient mining and blockchain interoperability.

Disclaimer

This document is for information only and does not constitute investment advice, an investment recommendation, or a solicitation to buy or sell — it is merely a summary of key aspects of the Cointelegraph Report. In particular, this document is not intended to replace individual investment or other advice.

The information contained in this publication is based on the knowledge available at the time of preparation and is subject to change without notice. The authors were diligent with their selection of information but assume no liability for the accuracy, completeness or timeliness of the information provided.

Past performance is not a guide to future performance. Values may fall or rise, and you may not get back the amount you invested. Income from investments may fluctuate.

Cointelegraph does not endorse and is not responsible for or liable for any content, accuracy, quality, advertising, products or other materials on this page. Readers should do their own research before taking any actions related to the company.

Cointelegraph is not responsible, directly or indirectly, for any damage or loss caused or alleged to be caused by or in connection with the use of or reliance on any content, goods, or services mentioned in this publication.

Authors:
Gleb K, Kyrian Alex, Nick M, Igor K, Iraklis A