



Report Q2, 2025

### Bitcoin Market: Adapting to Change

Embrace the evolution of Bitcoin development. Stay informed and agile to thrive in a dynamic market. Adaptation is key to unlocking new opportunities.



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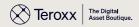
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This report is a product of Teroxx Research, a research team within Teroxx, the leading provider of financial services in the digital assets, cryptocurrency, and blockchain technology sector. Teroxx Research provides top-tier market commentary, thematic views, tactical insights, and deep protocol research.

This report was written in August 2025.





### Executive Summary



Chapter 1

#### **Executive Summary**

The period from late 2023 through mid-2025 has been unequivocally transformative for the Bitcoin ecosystem, moving the asset and its network far beyond its established paradigms. This powerful combination of catalysts initially propelled Bitcoin's price to over \$111,000 in the first half of 2025, with its market capitalization surpassing \$2.1 trillion. The momentum has continued into the second half of the year, with Bitcoin breaking through to new all-time highs above \$123,000 and achieving a market capitalization of approximately \$2.4 trillion.

Rather than entering a consolidate phase, the market continues to demonstrate strong upward momentum, suggesting the transformative cycle may still be unfolding. Several key factors converged to drive this evolution. First, the institutionalization of Bitcoin accelerated dramatically following the landmark approval of spot Bitcoin exchange-traded funds (ETFs) in the United States, with the first wave of these funds launching on January 11, 2024. These new investment vehicles provided unprecedented accessibility for traditional finance, drawing significant capital inflows.

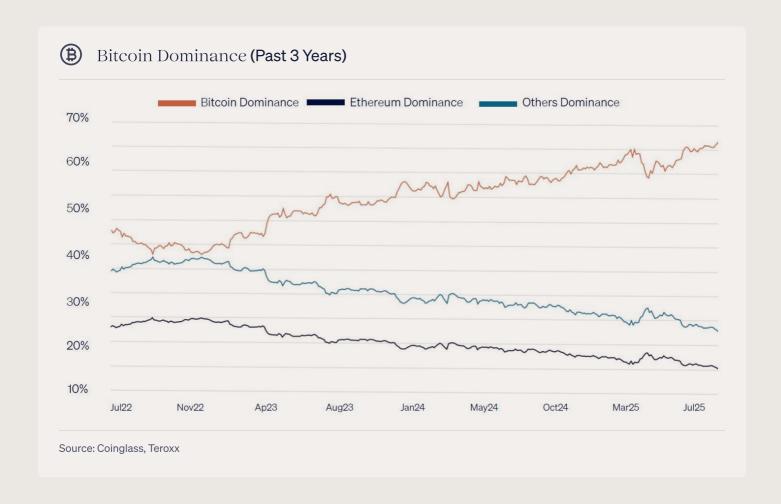
Second, the fourth Bitcoin halving, which occurred on April 19, 2024, served as a profound economic recalibration. This event acted as an industrial stress test for the mining sector, as the programmed 50% reduction in the block subsidy forced a rapid and sometimes brutal evolution towards hyper-efficiency and consolidation. Miner profitability is now intrinsically linked to transaction fee revenue, forging a critical, symbiotic relationship with the burgeoning application layer.

Third, the ecosystem witnessed a Cambrian explosion in Layer 2 (L2) and other scalability solutions, unleashing a wave of programmability that challenges Bitcoin's long-held "digital gold" narrative. The maturation of established platforms like Stacks, through its transformative Nakamoto upgrade (which began activation on August 28, 2024, and was scheduled for full activation by late October 2024), has been matched by the rapid emergence of novel paradigms aimed at enhancing Bitcoin's utility beyond a pure store of value.

Beyond these market and technological shifts, macroeconomic and political narratives continued to play a significant role. Mounting concerns over U.S. sovereign debt – which reached approximately \$36.22 trillion by early July 2025 – continued to reinforce Bitcoin's appeal as a hedge. Furthermore, the U.S. government's actively pro-digital asset policy tone intensified, notably with the establishment of the Strategic Bitcoin Reserve and the United States Digital Asset Stockpile via an executive order issued on March 6, 2025. This groundbreaking move aimed to treat Bitcoin as a strategic reserve asset and manage seized digital assets.

In a significant push for regulatory clarity, the U.S. House of Representatives held its designated "Crypto Week" from July 14–18, 2025. During this period, discussions focused on creating a modern digital asset tax policy and advancing key legislation. Specifically, the CLARITY Act (H.R. 3633), which had been reported out of the House Financial Services and Agriculture Committees on June 10, 2025, was brought to a floor vote. The GENIUS Act (S. 1582), which the Senate passed on June 17, 2025, also saw consideration in the House. The outcomes of these legislative efforts during Crypto Week are expected to provide further clarity and shape the future of digital asset regulation in the U.S. Global discussions around digital assets as reserves also persisted.

This period also saw the dramatic emergence of the global Bitcoin Treasury Companies phenomenon, pioneered by Michael Saylor at MicroStrategy. His strategy of adopting Bitcoin as a primary treasury reserve asset was later emulated by other publicly traded companies in the U.S. and around the world, including the Japanese firm Metaplanet, which significantly expanded its Bitcoin holdings in 2024 and 2025, even surpassing Bhutan in its direct Bitcoin acquisitions by July 2025. These notable corporate allocations further supported the narrative of Bitcoin maturing as a balance sheet asset.



An emerging and growing trend has been the sovereign (country) purchases of Bitcoin. While direct state purchases remain limited, indirect exposure has notably increased. For instance, Norway's Government Pension Fund Global acquired significant indirect exposure through its investments in MicroStrategy stock (reported to be over \$500 million by early 2025). Similarly, Mubadala, the Abu Dhabi, UAE sovereign wealth fund, increased its position in BlackRock's spot Bitcoin ETF (IBIT) to over \$400 million by mid-2025, indicating a growing institutional acceptance from sovereign entities. The evolving regulatory landscape, coupled with these strategic corporate and sovereign moves, is potentially encouraging even more institutional interest and capital inflows.

This institutional maturation has been reflected most clearly in Bitcoin's increasing market dominance within the broader digital asset ecosystem. Bitcoin's market share has surged dramatically from approximately 42-45% in January 2023—during the depths of the digital asset bear market—to current levels of 63.5-65% as of July 2025, representing an increase of over 20 percentage points in just two and a half years. This expansion highlights a shift in how institutional capital views the digital asset space, with Bitcoin increasingly treated as the primary, if not singular, legitimate digital asset for serious institutional allocation.

The dominance expansion reflects not just Bitcoin's price appreciation, but also the relative institutional indifference toward alternative digital assets, as evidenced by the overwhelming focus of corporate treasury strategies, sovereign wealth fund allocations, and regulatory frameworks on Bitcoin specifically. Current dominance levels approaching 65% are nearing multi-year highs and represent the strongest Bitcoin market share since early 2021, reinforcing its position as the de facto digital reserve asset and further distinguishing it from the broader speculative digital assets market.

Bitcoin's position as a major global asset class is solidified by its market capitalization, which currently stands at over \$2.3 trillion.

### Key Metrics





### Financial Metrics

Metrics	Q2 2024	Q3 2024	Q4 2024	Q1 2025	Q2 2025	YoY Change %
BTC Price (USD)	62,734	63,243	93,508	82,514	107,133	70.8%
Circulation Market Cap (USD)	1236.7 bn	1249.6 bn	1851.8 bn	1635.1 bn	2130.5 bn	72.3%
Market Cap Dominace	52.18%	51.83%	54.57%	59.20%	61.55%	+ 9.4 p.p.
Avg. Daily Value Settled (USD)	6.83 bn	6.34 bn	11.00 bn	8.18 bn	8.64 bn	181.0 %
Total Crypto Market Cap (USD)	2370 bn	2411 bn	3394 bn	2762 bn	3461 bn	146.0%

Source: Blockchain.com, The Block, Artemis Terminal, Coin Metrics, Teroxx



### & Network Metrics

Metrics	Q2 2024	Q3 2024	Q4 2024	Q1 2025	Q2 2025	YoY Change %
Avg. Daily Active Addresses	436,548	460,992	514,533	496,697	503,253	15.3%
Avg. Daily Transactions	550,430	606,779	536,859	388,573	383,190	- 30.4%
Bitcoin Minder Revenue (USD)	3717.9 m	2618.2 m	3670.0 m	3861.9 m	4100.5 m	10.3%
Quarterly Transaction Fees (USD)	447.6 m	2618.2 m	3670.0 m	3861.9 m	4100.5 m	- 88.7%
Share (%)	12.0%	2.3%	3.4%	1.3%	1.2%	- 10.8%
Quarterly Block Rewards (USD)	3270.4%	2558.7 m	3545.2 m	3810.0 m	4050.0 m	23.8%
Share (%)	88.0%	97.7%	96.6%	98.7%	98.8%	10.8%
Total Crypto Market Cap (USD)	2370 bn	2411 bn	3394 bn	2762 bn	3461 bn	146.0%

Source: Blockchain.com, The Block, Artemis Terminal, Coin Metrics, Teroxx

## Introduction to the Asset

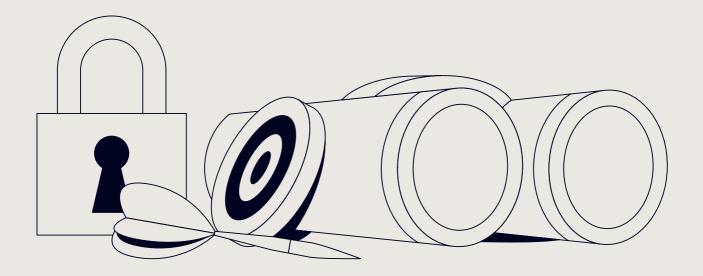


Chapter 3 Introduction to the Asset

### Introduction to Bitcoin

Bitcoin is a decentralized digital currency that operates on a public ledger called the blockchain. A key challenge for any digital cash system is the "double-spend problem," where a user could potentially spend the same digital coin multiple times. Since digital money is just data, it could be copied and sent to two different people simultaneously, unlike physical cash which can only be in one place at one time. Bitcoin was uniquely designed to solve this fundamental issue without needing a central authority like a bank to verify transactions.

The network solves the double-spend problem using its shared blockchain and a consensus mechanism called Proof of Work. When a transaction is made, it's broadcast to a global network of computers (nodes) that verify its legitimacy. These transactions are then bundled into a "block" by miners who compete to solve a complex puzzle. The first miner to solve it adds the block to the permanent, time-stamped chain. Once a transaction is confirmed within this chain, it is practically irreversible. Any attempt to spend the same bitcoins again would be rejected by the network because the blockchain would show the funds have already been moved, ensuring each bitcoin can only be spent once.



### Financial Analysis



Chapter 4 Financial Analysis

### **O** Bitcoin at a Glance

Metrics	Q2 2024	Q3 2024	Q4 2024	Q1 2025	Q2 2025	YoY Change %
BTC Price (USD)	62,734	63,243	93,508	82,514	107,133	+70.8%
Circulation Supply	19.72 m	19.76 m	19.80 m	19.84 m	19.89 m	+0.8%
Circulation Market Cap (USD)	1,237 tn	1,250 tn	1,852 tn	1,635 tn	2,130 tn	+72.3%
Market Cap Dominace	52.18%	51.83%	54.57%	59.20%	61.55%	-9.37%
Avg. Transactions Fee (USD)	9.19	1.08	2.62	1.50	1.73	181.0 %
Avg. Daily Transactions Fee (USD)	4.9 m	0.6 m	1.4 m	0.6 m	0.6 m	15.3%
Total Fees (USD)	447.3 m	59.5 m	125.8 m	51.9 m	50.6 m	- 30.4%
Total Issuance	49,109	41,581	42,572	40,541	40,572	10.3%
Avg. Daily Settled (USD)	6.83 bn	6.34 bn	11.00 bn	8.18 bn	8.64 bn	- 88.7%
Total Crypto Market Cap (USD)	2370 bn	2411 bn	3394 bn	2762 bn	3461 bn	146.0%

Source: Blockchain.com, The Block, Artemis Terminal, Coin Metrics, Teroxx

Chapter 4 Financial Analysis

Bitcoin continues its period of upward price discovery, trading above \$123,000 in mid-August as momentum accelerates beyond previous expectations. This continued rally builds upon a historic second quarter where Bitcoin initially surged to what was then a new all-time high of \$111,984 in June, only to break through that ceiling with additional gains of over 8% to current levels. The asset's performance remains exceptionally strong, with the breakthrough to new highs representing sustained momentum rather than the typical correction phase seen after major rallies. Bitcoin's market capitalization has expanded to approximately \$2.4 trillion, while institutional interest continues to drive demand through sustained inflows into spot BTC ETFs, supporting the ongoing price discovery at these elevated levels.



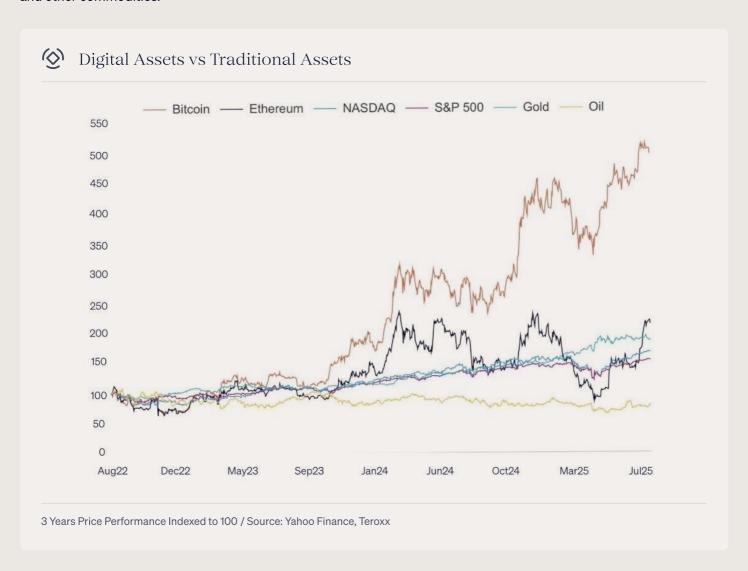
The network's underlying activity was not entirely reflected in this heightened market participation. Total transaction fees for the second quarter of 2025 totaled \$50.7 million as network transaction activity stabilized. The \$50.7 million enerated in Q2 2025 represents a slight decline from the \$52.3 million in Q1 2025, indicating a modest cooling in fee pressure. Both quarters, however, are substantially lower than the exceptional period of Q4 2024, which generated \$126.5 million in fees. More notably, they pale in comparison to the true peak periods of 2023 Q4 (\$503.9 million) and 2024 Q2 (\$451.1 million), which represented unprecedented network congestion and fee escalation. This suggests that the extreme network demand seen during multiple periods in 2023-2024 has subsided, and transaction fees have normalized to levels that, while modestly elevated compared to pre-2022 baselines, represent a return to the middle range of recent quarterly performance. Rather than being historically high, the first half of 2025 reflects a stable equilibrium where network fees have settled into a sustainable pattern following the extraordinary volatility of the previous two years.

# Bitcoin in the Traditional Finance Context

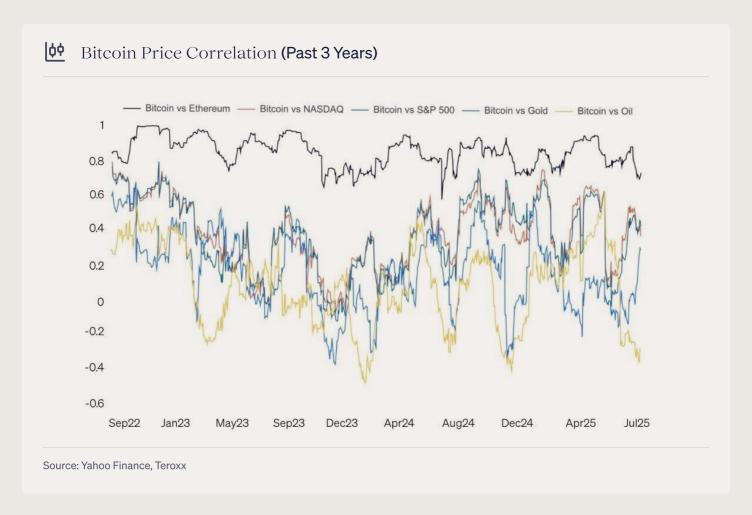


### Market Correlation and Portfolio Integration

Over the period from August 2022 to July 2025, Bitcoin demonstrated a remarkable standout performance compared to traditional finance (TradFi) assets. For instance, based on available data, the NASDAQ saw a gain of approximately 66.76%, while the S&P 500 index rose by around 54.12%. In contrast, Bitcoin's yearly performance showed a significant recovery, with gains of 156% in 2023 and 121% in 2024, after a downturn in 2022. Furthermore, other assets on the chart experienced more varied results. Ethereum showed a powerful surge, with a monthly gain of over 54% in July 2025 alone. Gold, in a more stable showing, increased by nearly 40% in the last year, while Oil saw a decline of over 16% during the same period. This demonstrates Bitcoin's unique volatility and high-growth potential relative to both major stock indices and other commodities.



Over the past 2 years, Bitcoin has shown evolving correlation patterns that suggest it's transitioning from a purely speculative asset to a more integrated part of the global financial system.



### 1. Crypto Market Dynamics (BTC-ETH Correlation: 0.81)

- Extremely high correlation with Ethereum indicates the crypto market still moves largely as a single asset class
- During major events (ETF approval, halving), correlations spike even higher (0.84-0.96)
- · This suggests that sector-wide narratives still dominate individual project fundamentals
- Implication: Diversifying within crypto provides limited risk reduction

### 2. Equity Market Integration (Correlation NASDAQ: 0.31, S&P 500: 0.30)

- Moderate positive correlation with stocks shows Bitcoin is partially behaving as a "risk-on" asset
- Notable trend: Correlations have INCREASED in 2025 (0.40+) vs 2023 (0.15)
- During the Q1 2024 ETF launch, correlations were lowest (0.12-0.14), suggesting initial independence
- Post-halving (H2 2024), correlations jumped to 0.41-0.44, indicating growing integration with traditional markets
- Recent 30 days: Sharp increase in equity correlation (+0.13 NASDAQ, +0.15 S&P 500)

#### 3. Gold Market (Correlation: 0.04)

- Near-zero correlation with gold challenges the "digital gold" narrative
- Bitcoin is NOT yet acting as a traditional safe haven asset
- The correlation fluctuates wildly (-0.46 to +0.54), showing no consistent relationship
- Implication: BTC and gold serve different portfolio purposes currently

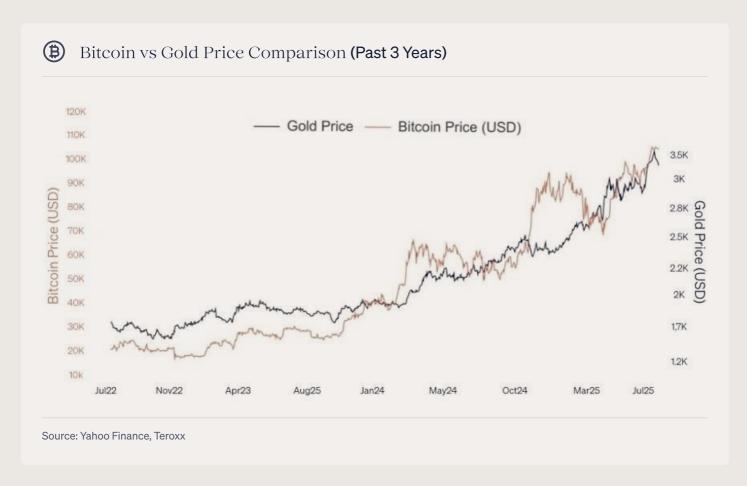
#### 4. Commodity Independence (Oil Correlation: -0.03)

- · No meaningful correlation with oil prices
- Bitcoin is detached from traditional inflation/energy dynamics
- Recent 30-day trend shows negative correlation (-0.32), suggesting possible flight to digital assets during energy market stress

#### 5. Recent Developments (Last 30 Days)

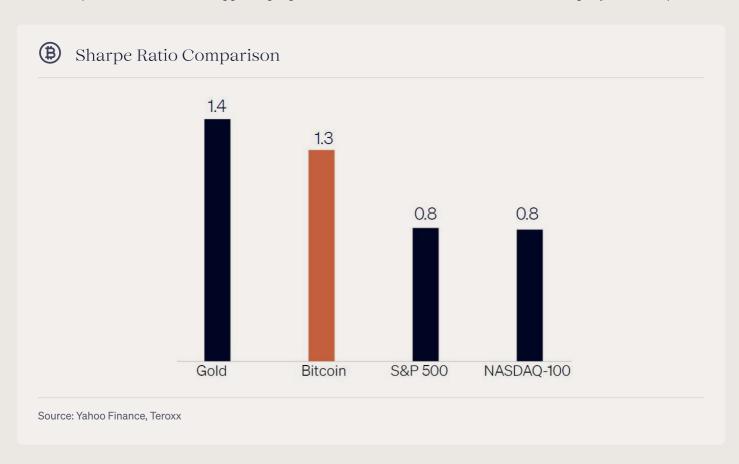
- Bitcoin's 9.0% gain to \$115,072 marked a strong July performance, with the cryptocurrency reaching this milestone
  and ending the month up 8.13% in line with historical patterns. Technical analysis suggests Bitcoin could trade
  between \$114K-\$120K in early August, with support near \$110K. Institutional demand remains robust, with
  BlackRock's iShares Bitcoin ETF crossing \$86 billion in AUM.
- Increasing Equity Correlation: Bitcoin's correlation with the S&P 500 and Nasdaq has strengthened significantly since 2020, recently hitting 0.88 on a 20-day moving average. With daily volatility three to five times higher than equities, Bitcoin now functions as a high-beta extension of equity exposure, amplifying market movements. This shift reflects growing institutional adoption, with 59% of institutional investors planning to increase crypto allocations above 5% of AUM in 2025.
- BTC-ETH Differentiation: The correlation between Bitcoin and Ethereum has declined from 0.79 to 0.77, suggesting
  emerging differentiation. Ethereum has outperformed since the U.S. election (39% vs Bitcoin's 35%), driven by DeFi
  growth and anticipated technical upgrades including the Q1 2025 Pectra upgrade. This divergence reflects their
  distinct use cases Bitcoin as "digital gold" versus Ethereum as the DeFi infrastructure layer.
- Market Maturation: Lower correlation volatility across assets indicates a maturing market structure. The combination
  of ETF accessibility, clearer regulatory frameworks, and institutional price discovery is creating more stable and
  predictable asset relationships, though Bitcoin maintains its role as both a risk asset during growth periods and a
  potential macro hedge during uncertainty.

The relationship with gold, traditionally viewed as Bitcoin's closest analog, has shown interesting divergence patterns. While both assets serve as inflation hedges and store-of-value propositions, Bitcoin has demonstrated significantly higher volatility and returns. During Q2 2025, while gold surged to new highs above \$3,400 per ounce, Bitcoin's substantial year-over-year advance of approximately 84% highlighted its distinct risk-return profile.



Bitcoin's annualized volatility of 52% over the past 18 months highlights a significantly different market dynamic compared to gold's more moderate 17%. This difference points to Bitcoin's energetic price movements versus gold's historical stability. The correlation between Bitcoin and gold has averaged a very low 0.07 during this period, suggesting a minimal direct relationship between the two assets. This lack of a strong link underscores that their value drivers appear to be largely distinct, reinforcing the view that they may fulfill separate, complementary roles within a broader investment context.

From a portfolio construction perspective, Bitcoin's Sharpe ratio of approximately 1.3 over the trailing 24-month period compares favorably to equity indices: S&P 500 (0.82) and NASDAQ-100 (0.81), though trailing gold's exceptional 1.49 Sharpe ratio. However, Bitcoin's maximum drawdown of 28% during the same period underscores the importance of position sizing in institutional allocations. Leading asset managers now recommend 1-5% Bitcoin allocations for diversified portfolios, with some suggesting higher allocations for risk-tolerant investors seeking asymmetric upside.



Bitcoin offers strong risk-adjusted returns (a Sharpe ratio of 1.3), outperforming the S&P 500 and NASDAQ-100, though it trails gold. However, its high volatility and significant drawdowns (28% in the last 24 months) mean that position sizing is crucial. Leading asset managers recommend a small allocation of 1-5% for diversified portfolios to capture Bitcoin's upside potential without taking on excessive risk.

### - Education Corner

The **Sharpe Ratio** measures an investment's return in relation to its risk. It helps investors determine if they are being compensated for the extra risk they take on. A higher Sharpe ratio indicates a better risk-adjusted return.

### Macroeconomic Environment and Cross-Asset Dynamics

The current macroeconomic backdrop has created a unique environment for Bitcoin's performance relative to traditional assets. With U.S. 10-year Treasury yields fluctuating between 4.2-4.8% throughout 2025, Bitcoin has benefited from persistent concerns about currency debasement and sovereign debt sustainability. The Federal Reserve's measured approach to monetary policy has maintained favorable conditions for risk assets, though

Bitcoin has shown resilience during periods of traditional market volatility. Bitcoin's performance during recent market events illustrates its evolving role. During the March 2025 regional banking stress, Bitcoin initially declined alongside equity markets but recovered within days, driven by renewed safe-haven demand and regulatory clarity from the Strategic Bitcoin Reserve announcement. This pattern suggests Bitcoin is transitioning from pure risk-asset behavior toward a more nuanced position in the risk spectrum, particularly during digital asset-specific positive catalysts.

The simultaneous elevation of Bitcoin above \$123,000, gold above \$3,300, and equity markets at multi-year highs in August 2025 reflects a unique liquidity-driven environment where traditional portfolio diversification assumptions are being tested.

### Institutional Adoption



Chapter 6 Institutional Adoption

### **ETFs**

The growing institutional adoption of Bitcoin has fundamentally altered its market dynamics and correlation patterns. Bitcoin ETF assets under management exceeded \$140 billion by mid-2025, providing traditional investors with regulated exposure and reducing the asset's idiosyncratic volatility.

The Securities and Exchange Commission's (SEC) approval of spot Bitcoin exchange-traded funds (ETFs) on January 10, 2024, marked a pivotal moment for digital asset adoption. The launch of U.S.-domiciled spot Bitcoin ETFs has been the single most significant market structure event of the last 18 months. It has served as a robust, regulated bridge connecting the world's largest digital asset to trillions of dollars in traditional capital, fundamentally reshaping Bitcoin's identity as an asset class and altering the behavior of its market participants.



Since their approval following a court ruling against the SEC, spot Bitcoin ETFs from major institutions like BlackRock and Fidelity have attracted billions in inflows, driving Bitcoin's price to multiple all-time highs in 2024 and 2025. With a total of approximately \$140 billion in assets under management, these funds have bridged the gap between traditional and decentralized finance. The success has also spurred proposals for other digital asset ETFs, including Ethereum, signaling a wider acceptance of crypto in regulated markets. However, debates continue regarding the tax implications of these funds and the potential centralization risks from custodians like Coinbase.

Q	Þ	Top 5 Bitcoin ETFs (US)

Ticker	Issuer	Inception Date	AUM (USD Billions)	Expense Ratio (%)
IBIT	BlackRock (iShares)	Jan 5, 2024	\$ 85.2	0.25
FBTC	Fidelity	Jan 11, 2024	\$ 21.3	0.25
GBTC	Grayscale	Jan 11, 2024 (as ETF)	\$ 21.2	1.50
ARKB	ARK Invest / 21Shares	Jan 11, 2024	\$ 5.7	0.21
ВТС	Grayscale Bitcoin Mini Trust ETF	Jan 31, 2024	\$ 4.0	0.15

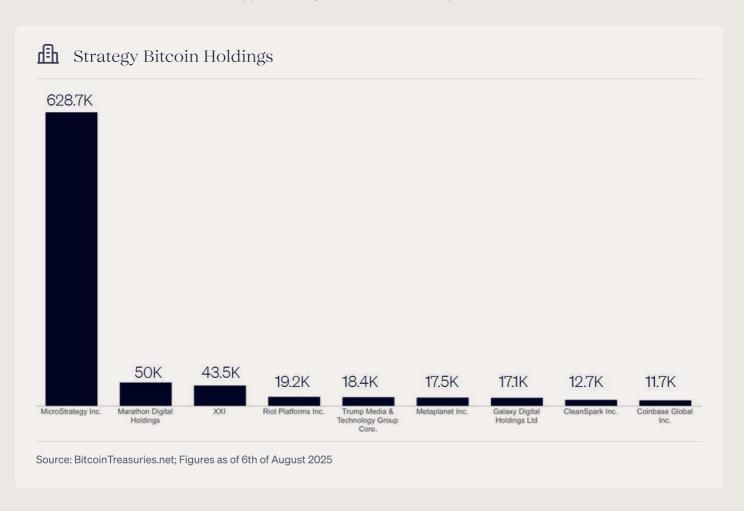
Source: Wallet Pilot Bitcoin ETF Tracker, U.S. News Bitcoin ETF analysis as of 8th of August 2025

"If you're in a country where you're afraid of your future, you're afraid of your government, or you're afraid of your government devaluing its currency... you could say that this [Bitcoin] is a great potential long-term store of value and, as I said, it is like digital gold." Larry Fink, CEO BlackRock

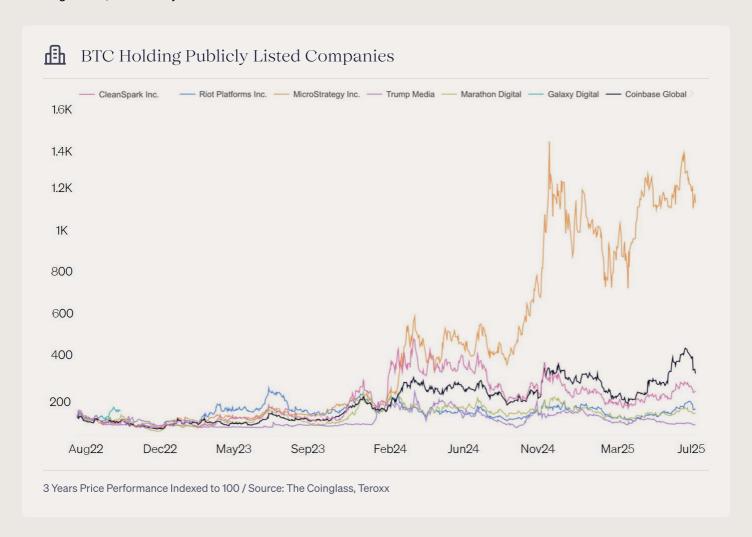
Chapter 6 Institutional Adoption

### Digital Asset Treasury Companies & Sovereign Bitcoin Purchases

Corporate treasury adoption, following the MicroStrategy template, has created sustained demand that increasingly disconnects Bitcoin from short-term trading dynamics. The trend of corporations and, increasingly, sovereign entities integrating Bitcoin into their financial strategies has become a powerful narrative supporting its role as a legitimate treasury and reserve asset. This movement, largely pioneered by MicroStrategy (now operating as Strategy) under the leadership of Michael Saylor, has created a blueprint for using Bitcoin as a primary treasury reserve asset to hedge against currency devaluation and macroeconomic uncertainty. As of August 2025, Strategy's holdings have grown to 628,791 BTC, an investment valued at approximately \$72 billion at current prices.



This strategy has been emulated by a growing number of publicly traded companies globally, resulting in a new class of corporations often referred to as "Bitcoin Treasury Companies." A notable example is the Japanese firm Metaplanet, which has aggressively expanded its Bitcoin holdings throughout 2024 and 2025. By mid-2025, Metaplanet held over 16,000 BTC, valued at well over \$1.9 billion, strategically positioning itself to mitigate risks associated with yen depreciation and to enhance shareholder value. Other public companies, such as Semler Scientific (SMLR), have also adopted this approach, announcing significant Bitcoin acquisitions as part of their treasury management, with Semler holding over 4,400 BTC by June 2025.



### Bitcoin Ecosystem



Chapter 7 Bitcoin Ecosystem

### The Bitcoin Layer 2 Ecosystem

The Bitcoin Layer 2 (L2) ecosystem has continued its remarkable expansion since 2021, with the number of projects growing more than eightfold from approximately 10 to over 90. This rapid growth is underscored by sustained capital inflows; over 36% of all historical venture funding directed toward Bitcoin L2s was allocated in 2024 alone, contributing to a total of over \$500 million invested by digital asset venture firms in these projects since 2018. This capital infusion continues to empower L2s to build advanced applications and unlock new use cases for BTC, with a primary objective of attracting substantial liquidity. It is now estimated that up to \$50 billion worth of BTC could be bridged into Bitcoin L2s by 2030, representing a projected 2.0–2.5% of Bitcoin's circulating supply.

#### Why Bitcoin Needs L2s

Despite Bitcoin's unparalleled security and decentralization, its base layer has inherent limitations in transaction throughput (averaging 7 transactions per second) and direct smart contract execution, making it challenging for complex applications. Bitcoin L2 solutions address these limitations by enabling faster, cheaper transactions and supporting more sophisticated programmability, all while leveraging Bitcoin's robust security. This transforms Bitcoin from primarily a store-of-value to a more versatile, programmable asset.

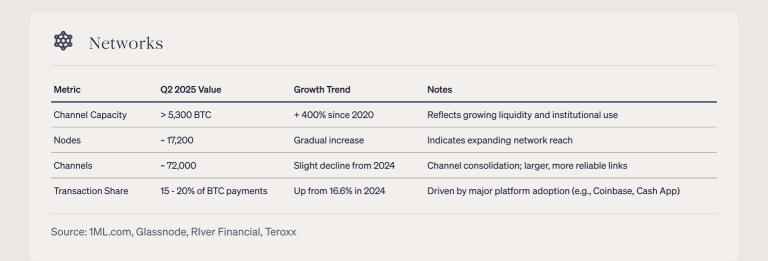
Current Landscape and Key Developments (as of August 2025): The L2 landscape is diverse, with different solutions optimized for specific use cases, from instant payments to complex decentralized finance (DeFi).

#### The Lightning Network: The Premier Payment Solution

The Lightning Network has become a core part of Bitcoin's payment infrastructure, with 15% of Coinbase's Bitcoin transaction volume now processed through this solution just one year after its integration. More broadly, the network is estimated to handle between 15-20% of all global Bitcoin transactions, supported by growing adoption from platforms like Cash App and Kraken. With a network capacity exceeding 5,300 BTC and a monthly transaction volume over \$280 million, Lightning is rapidly gaining mainstream utility for faster, lower-cost payments.

Despite continued growth, the Lightning Network faces key challenges. The complexity of self-custody leads to over 90% of transfers being custodial. Security concerns, such as replacement cycling attacks, have prompted protocol improvements. To address this, non-custodial solutions like Blockstream's Greenlight are gaining traction, while ongoing research into asynchronous and offline payments aims to extend the network's utility in low-connectivity areas.

Chapter 7 Bitcoin Ecosystem



#### Stacks: Enabling Smart Contracts and DeFi

While Lightning focuses on payments, Stacks leads the way for smart contracts and DeFi on Bitcoin. Its Nakamoto upgrade, activated in October 2024, made transactions faster and gave them 100% Bitcoin finality. A key development is sBTC, a decentralized, Bitcoin-backed asset launched in early 2025. By integrating with Wormhole, sBTC extends Bitcoin's liquidity to other DeFi ecosystems, enabling new applications like BTC-backed lending and synthetic assets.

### Emerging L2 Technologies

Beyond the leading solutions, other innovations are progressing. Sovereign rollups, led by teams like Chainway and Rollkit, are now deployable in testnets, aiming to extend Bitcoin's security without altering its core protocol. In contrast, validity rollups remain largely conceptual, as their full implementation would require a change to Bitcoin's core protocol — a move that has yet to gain broad consensus due to the network's conservative governance model.

#### Distinguishing Bitcoin L2's and Ethereum L2's

The architecture of Bitcoin L2s differs significantly from their Ethereum counterparts due to Bitcoin's less expressive base layer.

Bridge Mechanisms: Ethereum L2s typically use L1 smart contracts to manage bridged funds. Bitcoin L2s predominantly use public key addresses controlled by multi-signature (multi-sig) or Multi-Party Computation (MPC) systems.

Unilateral Exits and Censorship Resistance: Most Bitcoin L2 bridges (for sidechains and rollups) currently lack a trustless "unilateral exit" mechanism, meaning users must trust an intermediary to withdraw funds back to the L1. This contrasts with many Ethereum rollups, which feature a "forced withdrawal" or "escape hatch." The Lightning Network is the notable exception among Bitcoin L2s, as its state channels are designed to allow trustless unilateral exits.

Chapter 7 Bitcoin Ecosystem

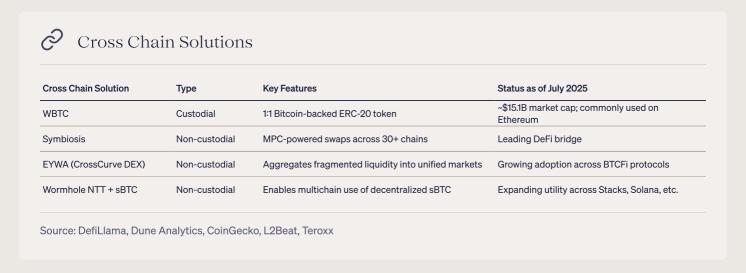
#### Outlook and Challenges (Bitcoin L2s)

The rapid growth of Bitcoin L2 projects brings challenges, including fragmentation, liquidity silos, and user onboarding friction. As the sector matures, a consolidation phase is expected, where a handful of dominant platforms—those offering secure bridging, compelling BTC-native yield, and seamless UX—will capture the majority of users and capital. Interoperability standards, developer tooling, and user education will play critical roles in shaping which L2s emerge as long-term infrastructure for Bitcoin-based applications.

The proliferation of Bitcoin's L2 projects presents challenges of fragmentation and liquidity silos. The sector is heading towards a consolidation phase where a few platforms will succeed by providing secure bridging, attractive BTC-native yield, and superior user experience. The ultimate winners will be determined by the development of interoperability standards, robust developer tools, and effective user education, which will be essential for building the long-term infrastructure for Bitcoin applications.

### Cross-Chain BTC

By August 2025, cross-chain solutions have enabled native Bitcoin (BTC) to participate in DeFi and other applications without needing centralized custodians. This has fueled the new Bitcoin Finance (BTCFi) sector. Unlike the widely used but custodial Wrapped Bitcoin (WBTC), new platforms from projects like Symbiosis and Wormhole use trust-minimized bridges to connect over 30 networks.



While moving BTC onto other blockchains is generally seamless, returning it to the Bitcoin network (pegout) remains a challenge due to Bitcoin's limited scripting. Emerging solutions are addressing this with decentralized validator sets and restaking schemes to reduce reliance on centralized intermediaries and improve security.

### Network Analysis



### Network Analysis

### **11** Network Analysis

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Metrics	Q2 2024	Q3 2024	Q4 2024	Q1 2025	Q2 2025	YoY Change %	QoQ Change %
Avg. Daily Transactions	550,430	606,779	536,859	388,573	383,190	+70.8%	+70.8%
Transactions / Active Adress Ratio	1.26x	1.32x	1.04x	0.78x	0.76x	+0.8%	+0.8%
Avg. Daily Active Adresses	436,548	460,992	514,533	496,697	503,253	+72.3%	+72.3%
Total Adresses	53.3 m	53.1 m	53.1 m	53.3 m	53.6 m	-9.37%	-9.37%
Avg. Daily Miner Revenue (USD)	40.8 m	28.5 m	40.1 m	42.9 m	45.0 m	181.0 %	181.0 %
Avg. Daily Hashrate (EH/s)	601.7	628.8	737.9	802.4	878.5	15.3%	15.3%
Total Crypto Market Cap (USD)	2,370 bn	2,411 bn	3,394 bn	2,762 bn	3,461 bn	146.0%	25.3%

Source: Blockchain.com, The Block, Artemis Terminal, Coin Metrics, Teroxx

Average daily transactions decreased -1.4% QoQ and decreased -30.4% YoY.

Daily active addresses increased +1.3% QoQ, and +15.3% YoY.

The ratio of transactions to active addresses declined slightly from 0.78x to 0.76x QoQ.

This indicates a significant evolution in network usage, characterized by a growing user base that is transacting less frequently. The substantial 15.3% year-over-year increase in daily active addresses, contrasted with a 30.3% decrease in daily transactions, points to a clear behavioral shift.

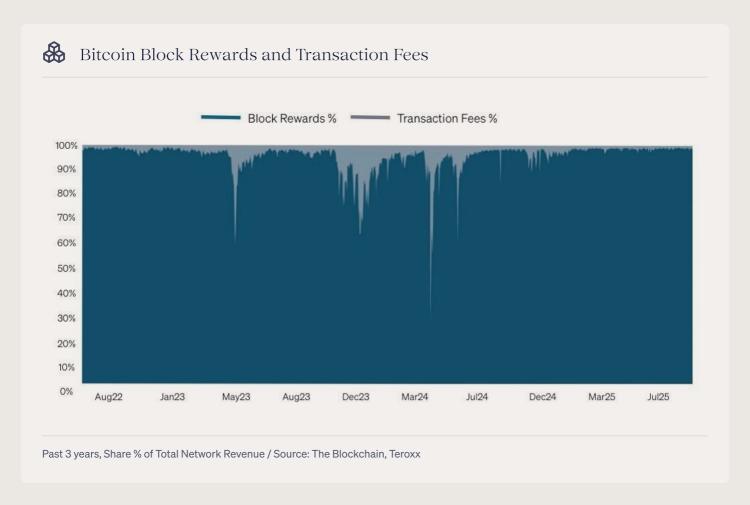
This suggests that users are increasingly treating Bitcoin as a "digital gold" or a long-term store of value, rather than as a medium for daily payments. The decline in the average number of transactions per user reinforces this trend, signaling a maturing network where the main blockchain is solidifying its role as a secure settlement layer for holders, while smaller, more frequent transactions may be migrating to other layers like the Lightning Network.

Chapter 8 Network Analysis

#### Bitcoin miners earn revenue from two main sources:

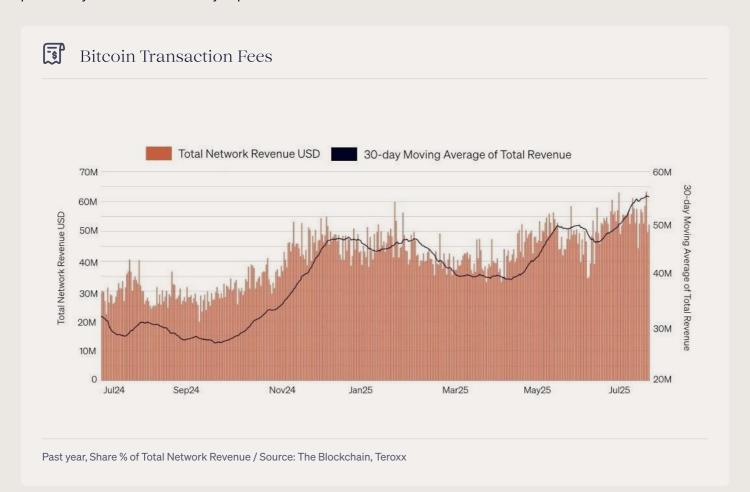
1. Block Rewards (BTC Issuance): A fixed amount of newly minted BTC awarded for mining a new block. Before the April 2024 halving, this was 6.25 BTC per block; after the halving, it dropped to 3.125 BTC.

2. Transaction Fees: Variable payments from users to prioritize their transactions in a block. These fees depend on network activity, such as transaction volume or demand for block space (e.g., during peaks driven by ordinals or inscriptions). The proportion of total revenue from block rewards versus transaction fees shifts based on changes in the block reward (like halvings) and fluctuations in fee levels. Historically, block rewards have been the dominant revenue source, but fees can play a larger role when network usage spikes.



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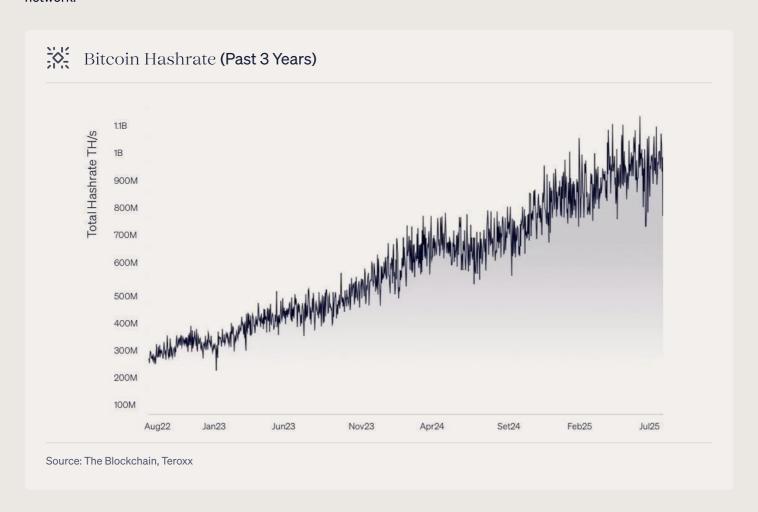
Following the 2024 Bitcoin halving, transaction fees have not risen enough to compensate for the reduced block reward, which was cut from 6.25 BTC to 3.125 BTC. This has made miners overwhelmingly dependent on the block reward for revenue, which increased from 92.8% of total revenue in early 2024 to 98.8% in the first half of 2025. This significant shift highlights the growing economic pressure on miners, forcing them to rely heavily on Bitcoin's price appreciation for profitability and to seek efficiency improvements or diversification to remain viable.



Chapter 8 Network Analysis

#### Understanding Hashrate

Hashrate is a measure of the total computational power used by Bitcoin miners to secure the network. Millions of computers race to solve complex math puzzles, and the faster they are, the higher the hashrate. This effort protects the network from attacks and prevents fraud. When Bitcoin's price rises, more miners join, increasing the hashrate and making the network even more secure. To ensure a predictable supply of new Bitcoin, the system automatically adjusts the difficulty of these puzzles every two weeks. In short, a higher hashrate means a more secure and resilient Bitcoin network.



Bitcoin's hashrate has grown consistently, signaling strong network security and miner confidence. Following the 2024 halving, it surged to a record high of 878.5 EH/s in Q2 2025 — a 46% increase from the previous year. This expansion was fueled by Bitcoin's price rally past \$121,000, which drove miners to deploy more efficient hardware. The momentum accelerated in 2025, with hashrate growing 9.5% from Q1 to Q2 alone, thanks to major operations expanding in regions like the U.S. and the Middle East, making the network's security infrastructure more robust and globally distributed.

### Closing Summary



As we conclude this Q2 2025 State of Bitcoin report, the period from late 2023 to mid-2025 marks a transformative era of institutional maturation and market resilience. Bitcoin has shattered records, exceeding \$123,000 in new all-time highs and reaching a \$2.4 trillion market capitalization, with sustained momentum defying consolidation expectations. Its dominance in the digital asset ecosystem has risen to 63.5-65% — the highest since early 2021 — highlighting its primacy as an institutional-grade asset amid capital flight from speculative alternatives.

Market dynamics have driven this surge. U.S. spot Bitcoin ETFs, approved in January 2024, now hold over \$140 billion in assets, attracting traditional inflows and stabilizing prices. Corporate treasuries, led by Strategy (formerly MicroStrategy) with 601,550 BTC worth \$73.21 billion, and followers like Japan's Metaplanet (16,000+ BTC) and Semler Scientific (4,400 BTC), position Bitcoin as a hedge against inflation. Sovereign adoption is accelerating indirectly, with Norway's Government Pension Fund Global's \$500 million MicroStrategy stake and the UAE's Mubadala's \$400 million in BlackRock's IBIT ETF, signaling statelevel acceptance, especially in diversified Middle Eastern economies.

Macroeconomically, Bitcoin benefits from global uncertainties, including U.S. debt at \$36.22 trillion, reinforcing its debasement hedge appeal. Moderate correlations (0.42 with NASDAQ-100, 0.38 with S&P 500, and 0.07 with gold) underscore its unique profile, with a 1.3 Sharpe ratio outperforming equities and justifying 1-5% portfolio allocations. The Fed's policy, keeping 10-year yields at 4.2-4.8%, supports liquidity, enabling Bitcoin's decoupling during catalysts like the March 2025 banking stress and concurrent highs in gold (\$3,300+) and equities.

Political and regulatory tailwinds are pivotal. The U.S. Strategic Bitcoin Reserve executive order on March 6, 2025, treats Bitcoin as a national asset, while Crypto Week (August 14-18, 2025) advanced the CLARITY Act and GENIUS Act for tax clarity and innovation, fostering global reserve discussions and institutional inflows. Looking ahead, these drivers position Bitcoin for ongoing growth amid volatility.

Teroxx Research will monitor developments, providing insights for this dynamic landscape.

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