

# AMBERDATA DIGITAL ASSET SNAPSHOT

September 16th, 2025

**MIKE MARSHALL**  
**AMBERDATA RESEARCH**



# Legal and Disclosures

## Disclaimers

The information contained in this report is provided by Amberdata solely for educational and informational purposes. The contents of this report should not be construed as financial, investment, legal, tax, or any other form of professional advice. Amberdata does not provide personalized recommendations; any opinions or suggestions expressed in this report are for general informational purposes only.

Although Amberdata has made every effort to ensure the accuracy and completeness of the information provided, it cannot be held responsible for any errors, omissions, inaccuracies, or outdated information. Market conditions, regulations, and laws are subject to change, and readers should perform their own research and consult with a qualified professional before making any financial decisions or taking any actions based on the information provided in this report.

Past performance is not indicative of future results, and any investments discussed or mentioned in this report may not be suitable for all individuals or circumstances. Investing involves risks, and the value of investments can go up or down. Amberdata disclaims any liability for any loss or damage that may arise from the use of, or reliance on, the information contained in this report.

By accessing and using the information provided in this report, you agree to indemnify and hold harmless Amberdata, its affiliates, and their respective officers, directors, employees, and agents from and against any and all claims, losses, liabilities, damages, or expenses (including reasonable attorney's fees) arising from your use of or reliance on the information contained herein.

Copyright © 2025 Amberdata. All rights reserved.

This week's Digital Asset Snapshot was characterized by significant regulatory developments and institutional positioning shifts that highlighted the crypto market's evolving maturity amid persistent volatility. Major milestones included the approval of first-ever XRP and Dogecoin ETFs marking unprecedented altcoin mainstream access, Tether's launch of USA<sup>™</sup> to comply with new U.S. stablecoin regulations demonstrating adaptation to regulatory clarity, and Gemini's successful \$4.4 billion Nasdaq debut signaling continued traditional finance integration. Market dynamics revealed complex institutional sentiment: Bitcoin ETF flows showed mixed positioning with BlackRock adding 4,130 BTC while others reduced exposure. Futures open interest expanded 7% at Binance and 14% at Hyperliquid indicating renewed risk appetite. Funding rates demonstrated fragile recovery from near-capitulation levels with Bitcoin's three-day average climbing from 0.0004 to 0.0040, reflecting cautious re-engagement following severe mid-September deleveraging across digital asset markets.

## News

- **France Threatens EU Crypto License Blocks:** AMF warns of "atomic weapon" option to refuse foreign MiCA licenses, joining Italy and Austria in demanding ESMA oversight of significant crypto firms amid regulatory arbitrage concerns.
- **Tether Launches USA<sup>™</sup> for U.S. Compliance:** New stablecoin designed for GENIUS Act requirements with Anchorage Digital issuing and Cantor Fitzgerald managing reserves, while \$170 billion USDT continues international operations.
- **First XRP and Dogecoin ETFs Approved:** Rex Shares and Osprey Funds launch XRPR and DOJE tickers September 18, marking first altcoin ETFs beyond Bitcoin/Ethereum following SEC's 75-day non-objection period.
- **Forward Industries' \$1.58B Solana Purchase:** Nasdaq-listed firm acquires 6.82 million SOL (6.5% of supply) in largest public corporate altcoin investment, joining 150 firms planning \$100 billion crypto allocations.
- **Gemini IPO at \$4.4 Billion Valuation:** Third major U.S. exchange listing raises \$400 million for expansion with Nasdaq taking strategic stake, exceeding \$3 billion target amid crypto market upswing.
- **SwissBorg \$41M Hack via Third-Party API:** 192,000 SOL stolen through compromised Kiln staking provider integration, with platform committing full user reimbursement while highlighting DeFi dependency risks.
- **Brazil's Itaú Creates Crypto Division:** \$20 billion asset manager establishes dedicated unit for crypto ETFs and tokenized products amid clearer 2026 regulatory framework.
- **ORQO Launches \$370M RWA Platform:** Abu Dhabi firm offers yields on Ripple's RLUSD through tokenized real-world assets on XRP Ledger, exemplifying UAE's crypto hub ambitions.

## Market Analysis

- **Weekly Bitcoin ETF Flows Mixed:** BlackRock adds 4,130 BTC reaching 757,950 total while 21Shares reduces 1,410 BTC, Fidelity rebuilds with 1,290 BTC inflow, Bitwise faces 700 BTC outflow amid tactical adjustments.
- **Cumulative ETF Holdings Show Consolidation:** BlackRock dominates with 757,950 BTC (80% market share), 21Shares holds 42,310 BTC (-22% from April peak), Grayscale Mini maintains 48,140 BTC with steady accumulation.
- **Altcoin Futures Expand Selectively:** Ethereum futures grow 7% to \$29.76B, Solana surges 17% to \$7.20B, AVAX jumps 32% while DOGE rallies 38% reflecting discriminating institutional positioning.
- **Exchange Open Interest Rises Broadly:** Binance climbs 7% to \$19.29B, CME adds 5% reaching \$24.35B, Hyperliquid surges 14% to \$10.26B indicating renewed derivatives engagement.
- **Long-Short Ratios Signal Bearish Shift:** Bitcoin drops to 0.987 on September 13 (first net short positioning), Ethereum collapses 52% to 1.32, Solana plummets 66% to 1.006 before modest recoveries.
- **Bitcoin Funding Rates Show Fragile Recovery:** Three-day average rises from 0.0004 to 0.0040 but remains below the healthy 0.0050-0.0100 range, with platforms showing mixed conviction amid cautious re-engagement.
- **Ethereum Funding Demonstrates Bullish Resilience:** Moving average surges to 0.0092 with multiple venues at maximum 0.0100, indicating aggressive accumulation viewing volatility as opportunity.
- **Solana Funding Exhibits Extreme Volatility:** Three-day average swings from -0.0002 to 0.0029 with persistent negative readings at Bybit, reflecting severe positioning adjustments and tactical uncertainty.

## NEWS

### France Threatens to Block EU Crypto Licenses, Demands Stronger Oversight

France's financial regulator AMF warned it may challenge crypto firms licensed in other EU countries from operating in France, threatening the "atomic weapon" of refusing foreign license validity if it suspects lax oversight. Under MiCA regulations, licenses granted in one EU state allow operation across all 27 countries, but France worries about regulatory arbitrage from looser standards. France, Italy, and Austria jointly called for ESMA to directly oversee significant crypto firms, citing enforcement inconsistencies. The stance pressures centralization of crypto oversight as companies like Coinbase (Germany) and Gemini (Ireland) rush to obtain MiCA licenses during the phase-in period.

### Tether Launches USA\$ to Comply with New U.S. Stablecoin Law

Tether unveiled USA\$, a new dollar-backed stablecoin designed specifically for the American market following the GENIUS Act's strict oversight requirements. The company appointed former White House Crypto Council director Bo Hines as CEO of its U.S. venture, partnering with Anchorage Digital as issuer and Cantor Fitzgerald for reserve management. USA\$ will be fully backed by cash and U.S. Treasuries with qualified custodians, while existing USDT (\$170 billion market cap) continues operating outside the U.S. CEO Paolo Ardoino called this a "natural step" toward regulated U.S. operations, signaling major stablecoin firms' adaptation to clearer regulations.

## First XRP and Dogecoin ETFs Approved for U.S. Trading

Rex Shares and Osprey Funds announced the first U.S. spot ETFs for XRP (XRPR) and Dogecoin (DOJE), set to begin trading September 18. These mark the first altcoin ETFs beyond Bitcoin and Ethereum, utilizing the Investment Company Act pathway after the SEC's 75-day objection period passed unopposed. The timing follows Ripple's legal victory against the SEC, boosting XRP confidence, while Dogecoin's inclusion elevates the meme coin to mainstream portfolios. Industry analysts view this as evidence of regulators' accommodative stance, potentially opening doors for wider crypto asset ETF approvals.

## Forward Industries Makes \$1.58 Billion Solana Treasury Purchase

Nasdaq-listed Forward Industries acquired 6.82 million SOL tokens worth \$1.58 billion, representing roughly 6.5% of circulating supply. The medical device company's massive altcoin bet marks one of the largest public corporate investments in cryptocurrency beyond Bitcoin, drawing comparisons to Strategy (previously MicroStrategy). Management cited Solana's Web3 and DeFi potential as justification for the long-term strategic investment. Industry data shows over 150 firms globally disclosed \$100 billion in planned crypto purchases this year, signaling broader corporate treasury diversification into digital assets.

## Itaú Asset Management Launches Dedicated Crypto Division

Brazil's largest asset manager Itaú created its first cryptocurrency unit led by former Hashdex veteran João Marco Braga da Cunha, operating alongside traditional investment desks. The \$20 billion manager plans crypto ETFs, tokenized bond funds, and potentially stablecoin custody and issuance services. Having already launched a Bitcoin ETF in 2022 and enabled crypto trading in its banking app, Itaú's formal division signals crypto as a core strategy amid Brazil's clearer regulatory framework that is set for full implementation by 2026.

## SwissBorg Suffers \$41 Million Hack in Solana Yield Program

Hackers stole approximately 192,000 SOL (\$41 million) from SwissBorg's Smart Yield wallet through a compromised API from external staking provider Kiln on September 8. The platform immediately paused Solana yield operations and committed to reimbursing 100% of affected users. The exploit highlights persistent DeFi security risks from third-party dependencies rather than direct smart contract bugs, prompting renewed calls for rigorous audits and real-time monitoring of integrated services amid billions in annual crypto losses.

## Gemini Goes Public with \$4.4 Billion Nasdaq Valuation

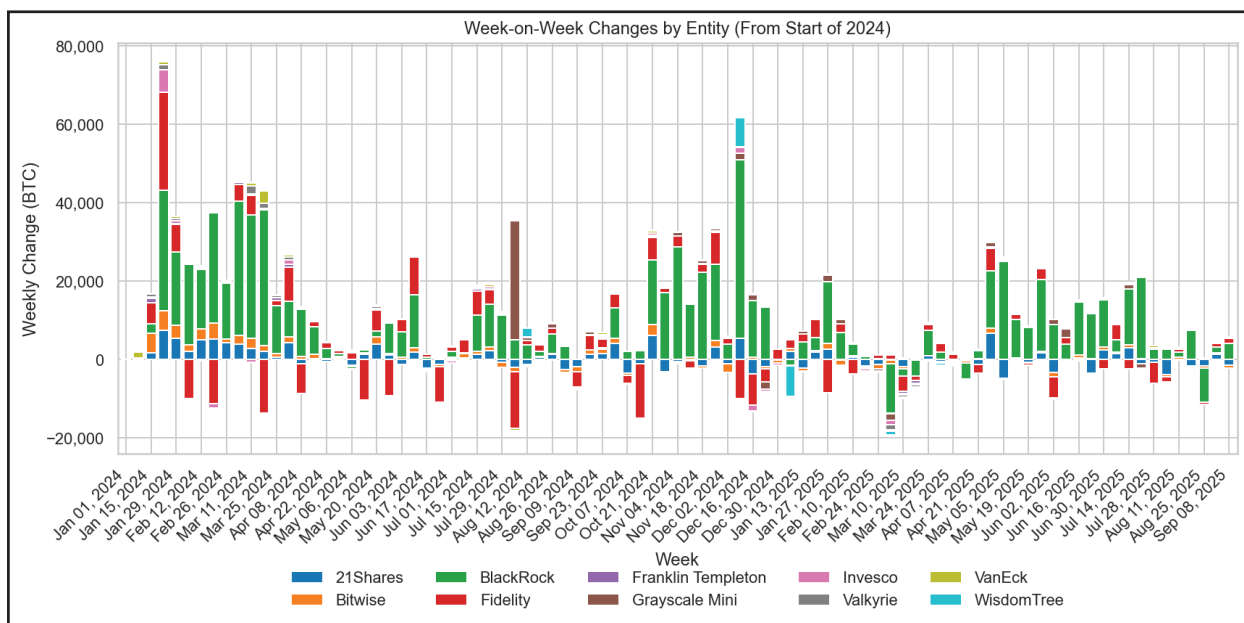
Gemini began trading on Nasdaq September 15 at a \$4.4 billion valuation, exceeding its \$3 billion target and marking the third major U.S. crypto exchange listing. The Winklevoss-founded exchange raised over \$400 million for international expansion and product development, with Nasdaq taking a strategic stake. The successful IPO signals traditional finance integration and could encourage more crypto firms to pursue public listings, though Gemini faces scrutiny similar to Coinbase's post-IPO volatility experience.

## ORQO Group Launches \$370 Million RWA Fund in Abu Dhabi

Abu Dhabi-based ORQO Group launched with \$370 million AUM, offering on-chain investment products backed by real-world assets. The firm's Soil platform will provide yields on Ripple's RLUSD stablecoin through tokenized portfolios of private credit and real estate on the XRP Ledger. With licenses in Europe and Abu Dhabi, ORQO exemplifies the UAE's crypto hub ambitions and the growing RWA tokenization trend, potentially attracting Middle Eastern sovereign wealth funds seeking regulated blockchain-based yield opportunities.

## MARKET ANALYSIS

### Weekly Bitcoin ETF Flows Signal Mixed Institutional Sentiment



The week beginning September 8, 2025, revealed divergent institutional positioning across Bitcoin ETFs, with selective outflows dominating despite pockets of accumulation. The mixed flows reflect tactical portfolio adjustments as market participants navigated evolving conditions following late-summer volatility.

BlackRock demonstrated continued strength with inflows of approximately 4,130 BTC during the week, building on the previous week's modest additions. This sustained accumulation from 753,820 BTC to 757,950 BTC indicates persistent institutional confidence in Bitcoin's trajectory, with BlackRock maintaining its aggressive positioning strategy despite broader market uncertainty.

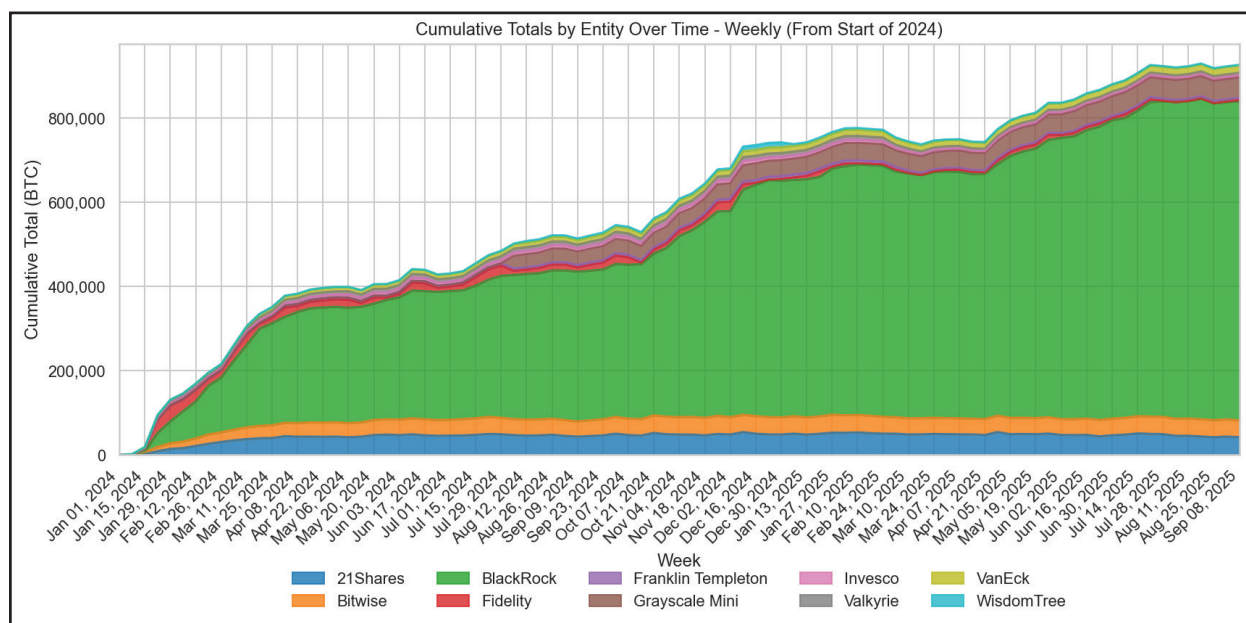
21Shares experienced notable outflows of roughly 1,410 BTC, continuing the pattern of measured reductions observed throughout August. The decline from 43,720 BTC to 42,310 BTC suggests ongoing tactical profit-taking or portfolio rebalancing, though the provider maintains substantial core holdings demonstrating continued strategic commitment.

Fidelity recorded solid inflows of approximately 1,290 BTC, marking a significant recovery from near-zero levels earlier in August. The increase from 1,330 BTC to 2,620 BTC represents continued cautious re-engagement as the institution rebuilds positions following dramatic repositioning in prior months.

Bitwise faced substantial outflows of roughly 700 BTC, declining from 40,650 BTC to 39,950 BTC. This reduction likely reflects tactical adjustments or client redemption activity as the provider manages exposure levels amid market volatility.

Smaller providers showed minimal activity, with Grayscale Mini adding approximately 300 BTC, while VanEck, Franklin Templeton, and Invesco recorded negligible changes. Valkyrie and WisdomTree maintained essentially flat positioning.

## Cumulative Bitcoin ETF Holdings Reflect Institutional Consolidation



Cumulative Bitcoin ETF holdings reveal mature institutional positioning patterns, with major participants maintaining substantial long-term allocations despite recent tactical adjustments across the expanding ecosystem.

BlackRock maintains its commanding position as the dominant market leader, holding approximately 757,950 BTC as of September 8, representing overwhelming market dominance. Despite recent volatility, BlackRock's position has grown steadily from around 597,510 BTC at the end of April, demonstrating sustained institutional accumulation and fundamental conviction in Bitcoin as a strategic asset class.

21Shares holds the second-largest position with approximately 42,310 BTC, showing significant reduction from peak levels around 54,340 BTC in late April. This measured decrease of roughly 22% reflects tactical profit-taking while maintaining substantial core positioning that demonstrates continued institutional confidence.

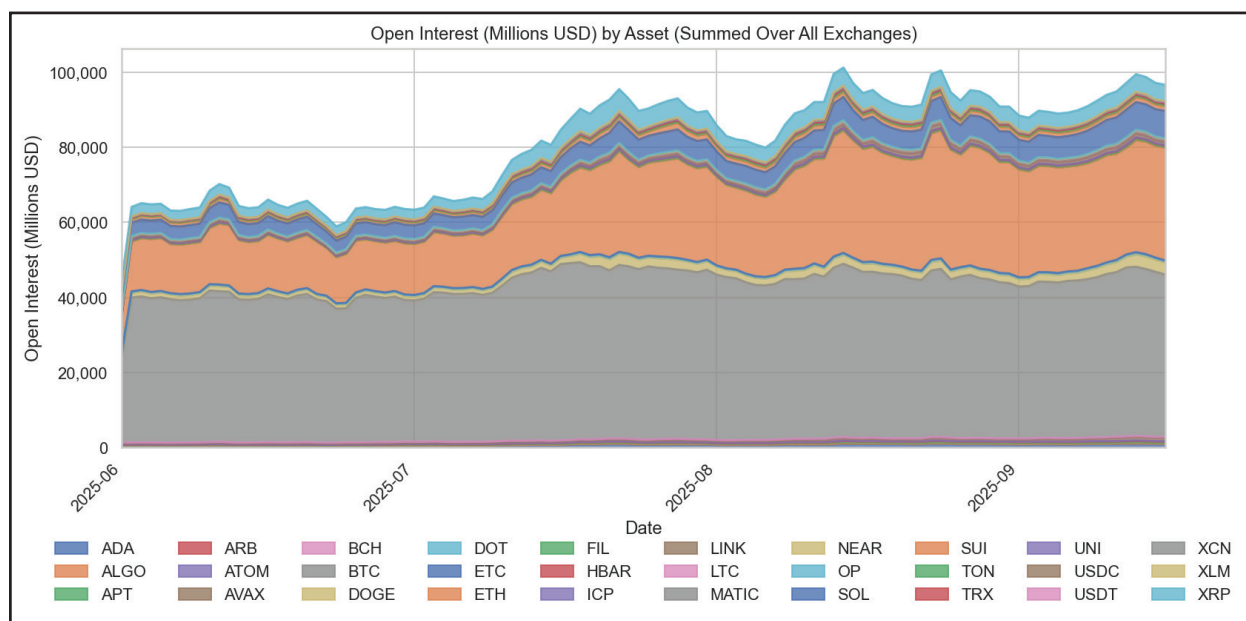
Grayscale Mini maintains significant holdings at roughly 48,140 BTC, showing consistent accumulation throughout the period. The steady growth from approximately 41,790 BTC in late April indicates strong institutional demand for Grayscale's reformed product structure.

Bitwise holds approximately 39,950 BTC, relatively stable from April levels around 39,020 BTC. This consistency throughout market volatility suggests strategic allocation targets have been achieved and maintained despite periodic adjustments.

VanEck has emerged as a growing player with holdings of approximately 17,400 BTC, representing a 21% increase from around 14,420 BTC in late April. The steady accumulation demonstrates persistent institutional confidence and strategic positioning expansion.

Among smaller providers, Franklin Templeton holds roughly 5,500 BTC, Invesco maintains 5,570 BTC, while Valkyrie and WisdomTree hold 5,690 BTC and 1,590 BTC respectively. Fidelity's dramatic repositioning continues, currently holding only 2,620 BTC compared to historical peaks, representing one of the most significant strategic shifts in the ETF landscape.

## Major Altcoin Futures Show Selective Institutional Accumulation



Futures markets for major altcoins exhibited selective expansion patterns on September 15, 2025, with several established protocols recording notable increases while others consolidated, reflecting discriminating institutional positioning across blockchain ecosystems.

Ethereum futures maintained robust institutional commitment, climbing from approximately \$27.91 billion to \$29.76 billion, representing a 7% weekly increase. This \$1.85 billion expansion underscores persistent confidence in Ethereum's ecosystem development despite broader market volatility.

Solana demonstrated exceptional momentum with open interest surging from roughly \$6.17 billion to \$7.20 billion, reflecting an impressive 17% increase. This \$1.03 billion weekly addition suggests continued optimism around Solana's technological advancement and growing DeFi ecosystem.

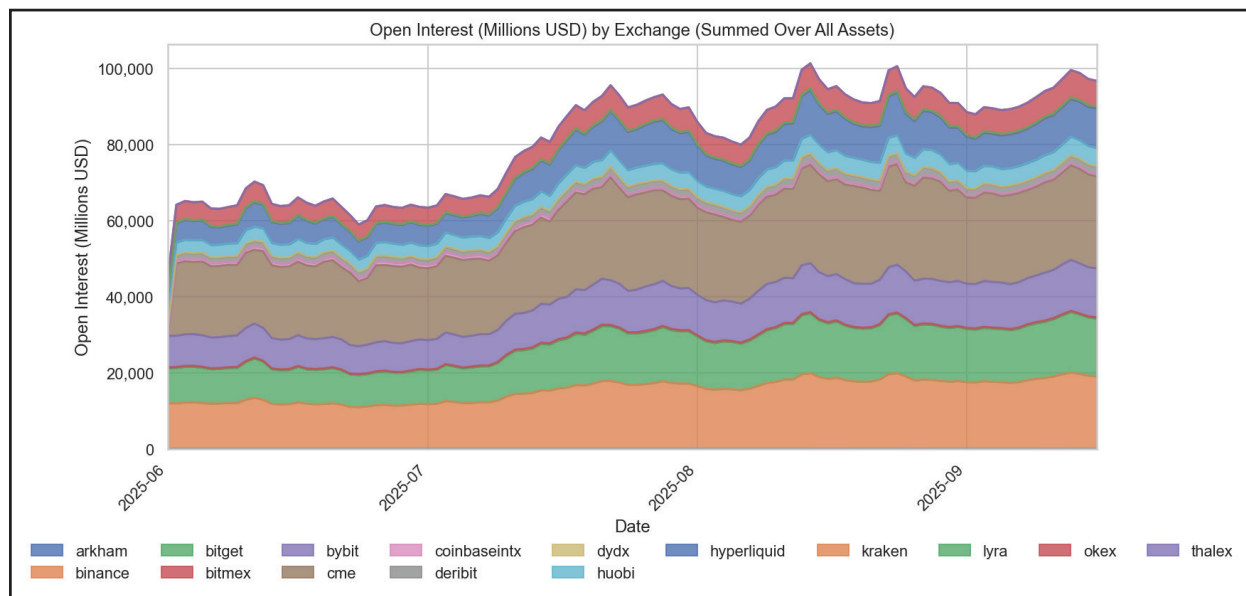
Bitcoin futures showed measured growth from around \$42.24 billion to \$43.99 billion, representing a steady 4% increase. This \$1.75 billion expansion indicates institutional positioning remains constructive while approaching strategic equilibrium levels.

Among mid-cap altcoins, AVAX exhibited remarkable strength, climbing from approximately \$620 million to \$821 million (32% increase), while XRP expanded from roughly \$4.04 billion to \$4.45 billion (10% increase). DOGE demonstrated significant momentum, surging from \$2.35 billion to \$3.25 billion (38% increase).

Layer-one protocols showed mixed performance. SUI increased modestly from \$1.14 billion to \$1.22 billion (7% increase), while APT rose from \$254 million to \$264 million. TON expanded from \$300 million to \$308 million, reflecting measured institutional interest.

DeFi tokens exhibited selective strength, with LINK declining from \$898 million to \$845 million, while UNI remained relatively stable around \$410 million. The divergent performance suggests institutional participants are increasingly selective in their protocol exposure.

## Crypto Futures Open Interest Demonstrates Continued Institutional Expansion



Open interest across major crypto derivatives exchanges exhibited robust growth patterns on September 15, 2025, with several platforms recording substantial increases that signal renewed institutional confidence and expanding market participation.

Binance demonstrated strong momentum with open interest climbing from approximately \$18.11 billion to \$19.29 billion, representing a 7% weekly increase. This \$1.18 billion expansion underscores continued institutional accumulation as participants positioned for potential directional moves following the September consolidation.

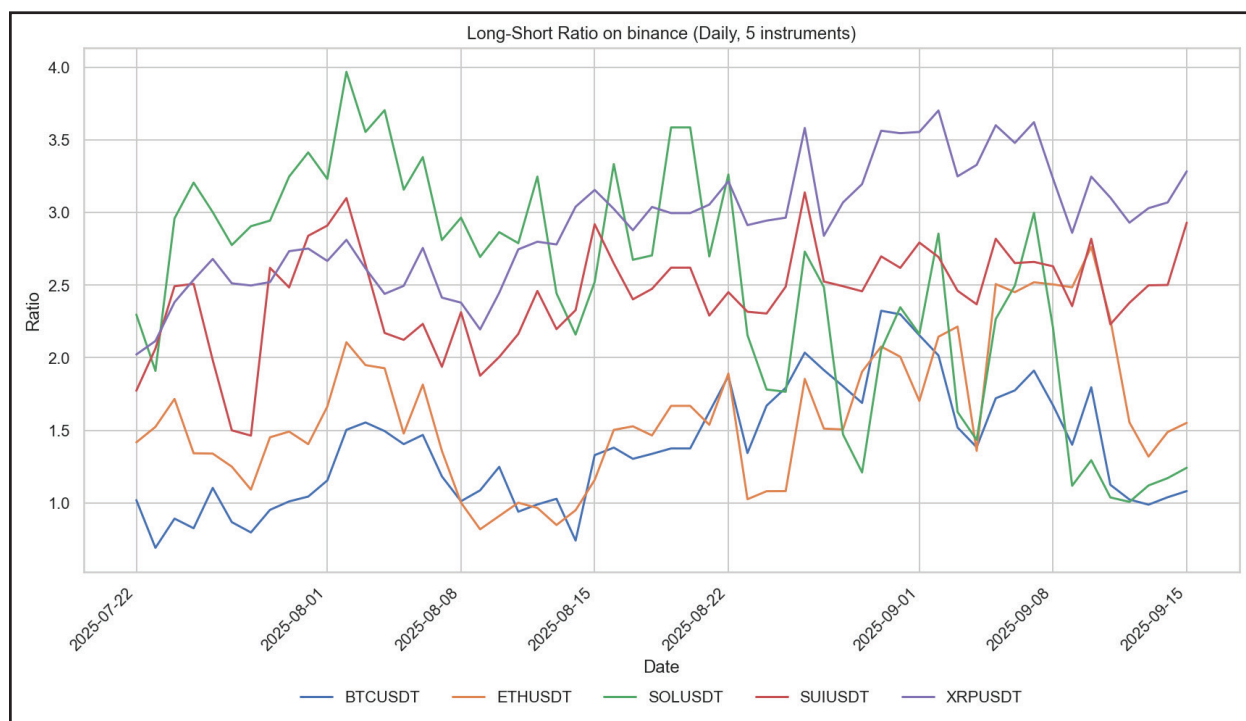
CME futures showed particularly robust institutional activity, surging from roughly \$23.11 billion to \$24.35 billion - a solid 5% increase highlighting a growing appetite for regulated Bitcoin derivatives. The \$1.24 billion weekly addition reflects sophisticated institutional strategies as traditional finance participants expanded crypto market engagement.

Hyperliquid experienced exceptional growth among decentralized venues, climbing from approximately \$9.02 billion to \$10.26 billion - a remarkable 14% weekly increase. This \$1.24 billion expansion in decentralized derivatives activity suggests growing confidence in DeFi protocols and expanded speculative positioning.

Bitget maintained steady expansion, rising from around \$14.37 billion to \$15.28 billion (6% increase), while Bybit increased from roughly \$12.14 billion to \$12.92 billion (6% increase). These platforms' coordinated growth reflects broad-based trader engagement across institutional and retail segments.

OKEx demonstrated notable momentum, climbing from approximately \$6.43 billion to \$6.89 billion (7% increase), while smaller exchanges including Kraken and Deribit showed measured growth. Coinbaseintx increased from \$580 million to \$639 million, reflecting conservative institutional positioning.

## Long-Short Ratios Reveal Deteriorating Market Sentiment



Long-short ratios across major crypto futures demonstrated concerning sentiment deterioration through early September, with the data revealing widespread bearish positioning before a modest recovery on September 15, as participants navigated increasingly volatile market conditions.

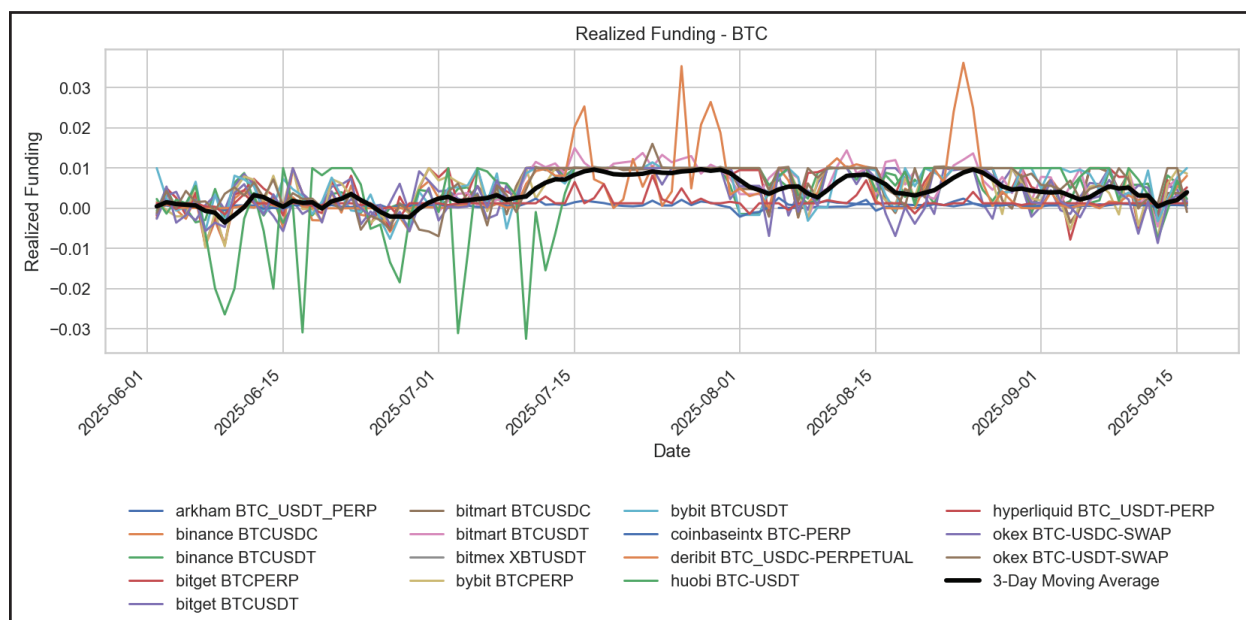
Bitcoin (BTCUSDT) exhibited severe sentiment erosion, declining from healthy levels around 2.30 at the end of August to critically bearish territory below 1.0 by mid-September. The ratio reached a concerning low of 0.987 on September 13, marking the first time Bitcoin futures showed net short positioning in recent months. The slight recovery to 1.08 on September 15 suggests tentative stabilization, though sentiment remains deeply cautious with leveraged traders maintaining defensive positioning amid macro uncertainties.

Ethereum (ETHUSDT) displayed remarkable volatility, swinging from peaks above 2.76 on September 10 to collapse below 1.32 by September 13. This dramatic 52% decline in just three days reflects severe deleveraging and capitulation among Ethereum traders. The modest recovery to 1.55 on September 15 indicates some bottom-fishing activity, though positioning remains well below the bullish levels (above 2.0) maintained through early September.

Solana (SOLUSDT) demonstrated extreme positioning swings, plummeting from elevated levels near 3.0 on September 7 to critically bearish readings of 1.006 on September 12. This represents one of the most dramatic sentiment reversals observed, with the ratio declining 66% in just five days. The recovery to 1.24 on September 15 suggests aggressive accumulation at depressed levels, though sentiment remains fragile.

SUI (SUIUSDT) and XRP (XRPUSDT) showed relative resilience, with SUI recovering to 2.93 and XRP maintaining 3.28 on September 15, indicating these assets retained stronger institutional conviction despite broader market pessimism.

## Bitcoin Funding Rates Signal Cautious Market Recovery



Bitcoin funding rates across major derivative exchanges demonstrated tentative stabilization on September 15, 2025, with the three-day moving average revealing a fragile recovery from critically bearish levels as institutional participants cautiously rebuilt leveraged positions.

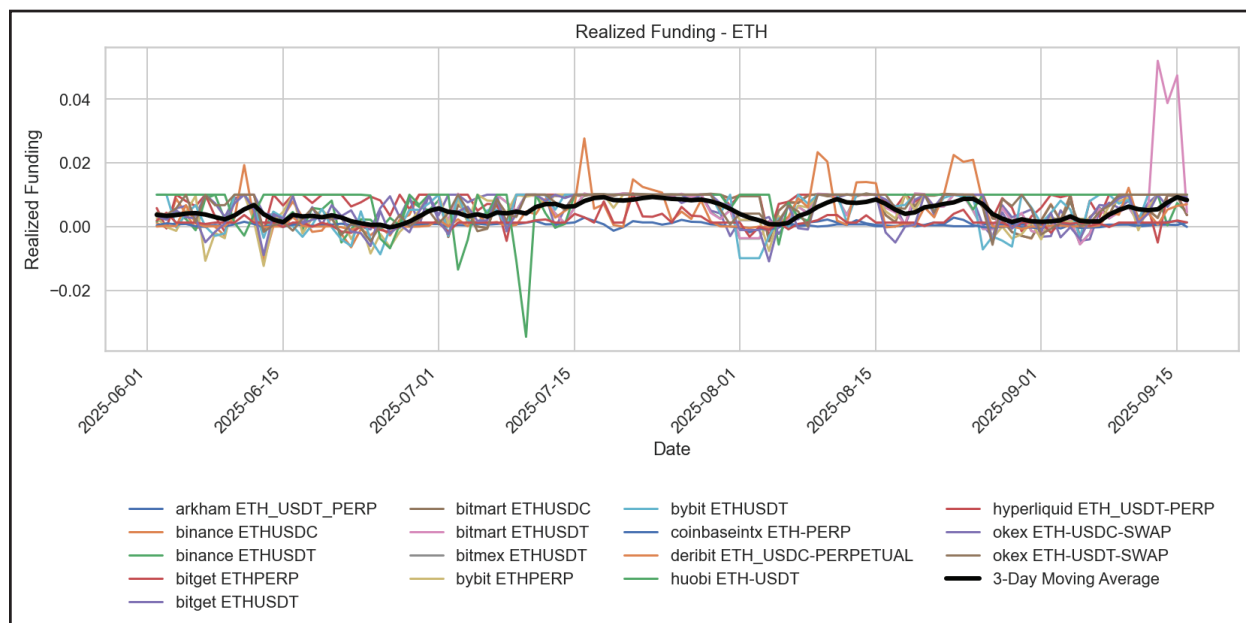
The three-day moving average of BTC funding rates illustrated modest improvement, recovering from extreme lows of 0.0004 on September 13 to reach 0.0020 by September 15, before strengthening to 0.0040 by September 16. While this represents significant progress from the near-capitulation levels, funding remains well below the healthy 0.0050-0.0100 range maintained earlier in the month, indicating persistent market caution.

Individual platform data reveals mixed conviction across trading venues. Binance BTCUSDC and BTCUSDT showed volatile positioning, with BTCUSDC recovering to 0.0037 on September 15 while BTCUSDT reached 0.0062. Notably, both products had experienced negative funding earlier in the week, with BTCUSDC reaching -0.0027 on September 13, reflecting severe deleveraging pressure.

Bitget and Bybit demonstrated stronger recovery momentum, with Bitget BTCPERP climbing from negative territory to 0.0029 on September 15, while Bybit BTCPERP surged to 0.0096. This divergence suggests more aggressive re-accumulation among certain institutional segments despite broader market uncertainty.

OKEx platforms exhibited extreme volatility, with BTC-USDC-SWAP swinging from -0.0087 on September 13 to positive 0.0033 on September 15, while BTC-USDT-SWAP returned to maximum funding at 0.0100, indicating rapid sentiment shifts and potential short covering.

## Ethereum Funding Rates Demonstrate Strong Bullish Recovery



Ethereum funding rates exhibited remarkable resilience on September 15, 2025, with the three-day moving average revealing aggressive institutional re-engagement following brief but severe deleveraging in early September.

The three-day moving average of ETH funding rates staged an impressive recovery, surging from 0.0054 on September 13 to 0.0076 by September 14 and reaching 0.0092 by September 15. This rapid acceleration from mid-week lows indicates strong conviction among Ethereum traders, with funding approaching the maximum 0.0100 levels seen at multiple venues.

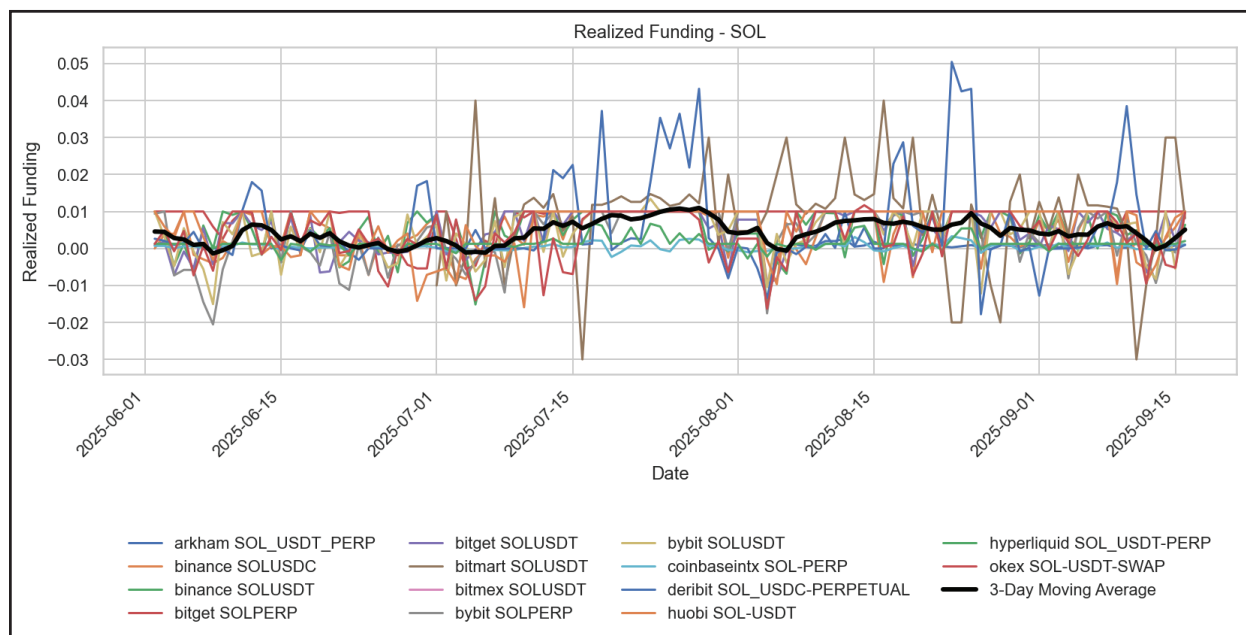
Platform data reveals coordinated bullish positioning across major exchanges. Binance ETHUSDC maintained maximum funding at 0.0100 on both September 14-15, while ETHUSDT reached 0.0074. This return to maximum funding from negative or neutral levels earlier in the week suggests aggressive accumulation during the market weakness.

Bybit demonstrated exceptional strength, with both ETHPERP and ETHUSDT maintaining maximum funding at 0.0100 throughout September 14-16. This unwavering maximum positioning indicates sophisticated participants viewed the early-week volatility as a prime buying opportunity rather than a fundamental shift.

Bitget platforms showed similarly robust engagement, with ETHPERP and ETHUSDT both reaching 0.0100 on September 15, recovering from negative readings just days earlier. The synchronized return to maximum funding across multiple platforms suggests broad institutional consensus on Ethereum's value proposition.

OKEx venues displayed remarkable consistency, with both ETH-USDC-SWAP and ETH-USDT-SWAP maintaining maximum 0.0100 funding throughout the period, indicating sustained leveraged long positioning despite broader market turbulence.

## Solana Funding Rates Reflect Volatile Sentiment Recovery



Solana funding rates demonstrated extreme volatility on September 15, 2025, with the three-day moving average revealing dramatic sentiment swings as traders navigated uncertain market conditions following severe mid-September deleveraging.

The three-day moving average of SOL funding rates illustrated remarkable instability, declining to negative territory at -0.0002 on September 13 before recovering modestly to 0.0008 by September 14 and reaching 0.0029 by September 15. This volatile trajectory from negative to positive funding indicates severe positioning adjustments and tactical uncertainty among Solana traders.

Platform data reveals significant divergence across venues. Binance SOLUSDC showed mixed positioning, reaching 0.0057 on September 15 while SOLUSDT remained negative at -0.0007. This divergence between products on the same exchange suggests fragmented market sentiment and potential arbitrage dynamics.

Bitget maintained relative strength with SOLPERP holding maximum 0.0100 funding throughout the period, though SOLUSDT fluctuated significantly, reaching only 0.0021 on September 15. This disparity indicates core institutional participants maintained conviction while leveraged speculators remained cautious.

Bybit platforms showed extreme volatility, with SOLPERP swinging from -0.0093 on September 13 to -0.0011 on September 15, while SOLUSDT moved from -0.0083 to -0.0055. These persistently negative readings, despite broader market recovery, suggest continued deleveraging pressure specific to Solana.

OKEx SOL-USDT-SWAP exhibited severe swings, reaching -0.0052 on September 15 after touching -0.0044 on September 14, indicating sustained bearish positioning despite attempted recoveries at other venues.

# LINKS

AmberLens: [intelligence.amberdata.com](https://intelligence.amberdata.com)

## Recent from Amberdata

- [Amberdata: DeFi Activity, Stablecoins, and the Impact on Price Volatility: Part 1](#)
- [Amberdata: DeFi Activity, Stablecoins, and the Impact on Price Volatility: Part 2](#)
- [Amberdata: DeFi Activity, Stablecoins, and the Impact on Price Volatility: Part 3](#)
- [Amberdata: How Do On-Chain Metrics Explain Bitcoin Volatility? Part 1](#)
- [Amberdata: How Do On-Chain Metrics Explain Bitcoin Volatility? Part 2](#)
- [Amberdata: Amberdata 2024 Digital Asset Market Intelligence Report: Exchanges & Derivatives](#)
- [Amberdata: Crypto Pairs Trading: Part 1 — Foundations of Moving Beyond Correlation](#)
- [Amberdata: Crypto Pairs Trading: Part 2 — Verifying Mean Reversion with ADF and Hurst Tests](#)
- [Amberdata: Crypto Pairs Trading: Part 3 — Constructing Your Strategy with Logs, Hedge Ratios, and Z-Scores](#)
- [Amberdata: Crypto Pairs Trading: Part 4 — Empirical Results & Performance Analysis](#)

## Spot Market

Spot market charts were built using the following endpoints:

- <https://docs.amberdata.io/reference/market-metrics-exchanges-volumes-historical>
- <https://docs.amberdata.io/reference/market-metrics-exchanges-assets-volumes-historical>
- <https://docs.amberdata.io/reference/get-market-pairs>
- <https://docs.amberdata.io/reference/get-historical-ohlcv>

## Futures

Futures / Swaps charts were built using the following endpoints:

- <https://docs.amberdata.io/reference/futures-exchanges-pairs>
- <https://docs.amberdata.io/reference/futures-ohlcv-historical>
- <https://docs.amberdata.io/reference/futures-funding-rates-historical>
- <https://docs.amberdata.io/reference/futures-long-short-ratio-historical>
- <https://docs.amberdata.io/reference/swaps-exchanges-reference>
- <https://docs.amberdata.io/reference/swaps-ohlcv-historical>
- <https://docs.amberdata.io/reference/swaps-funding-rates-historical>

## DeFi DEXes

DEX charts were built using the following endpoints:

- <https://docs.amberdata.io/reference/defi-dex-liquidity>
- <https://docs.amberdata.io/reference/defi-dex-metrics>
- <https://docs.amberdata.io/reference/defi-impermanent-loss>

## DeFi Borrow / Lend

DeFi lending charts were built using the following endpoints:

- <https://docs.amberdata.io/reference/defi-lending-protocol-lens>
- <https://docs.amberdata.io/reference/defi-lending-asset-lens>

## Networks

Network charts were built using the following endpoints:

- <https://docs.amberdata.io/reference/blockchains-metrics-latest>
- <https://docs.amberdata.io/reference/transactions-metrics-historical>
- <https://docs.amberdata.io/reference/get-historical-transaction-volume>

# LOOKING TO ENTER DIGITAL ASSETS?



Global Financial Infrastructure for Digital Assets

## USE CASES

ASSET MANAGEMENT | CENTRAL BANKS | CORPORATE TREASURY | INVESTMENT BANKING | TRADING | WEALTH MANAGEMENT



AMBERDATA PLATFORM

## DIGITAL ASSETS

SPOT AND DERIVATIVES MARKETS | BLOCKCHAINS | DEFI

Request a demo to learn how Amberdata's end-to-end solutions for digital asset data and analytics can address your use cases so you succeed in digital assets.

REQUEST A DEMO >



[amberdata.io](https://amberdata.io)

[docs.amberdata.io](https://docs.amberdata.io)

[hello@amberdata.io](mailto:hello@amberdata.io)