CRY01: US Crypto Exchange Market Structure

Technical Analysis Report | February 01, 2026

1. Data Overview

Subject: Coinbase (COIN)
Analysis Period: 2021-04-14 to 2026-01-30 (~4.8 years)
Total Observations: 19,325 rows across 4 datasets
Stock Data: 1,206 daily OHLCV observations
Data Sources: Yahoo Finance API, CoinGecko, exchange APIs (synthetic operational data)

2. Methodology

2.1 Metrics Computed

- Market share analysis by exchange
- Trading volume aggregation (spot)
- Bid-ask spread analysis
- Regulatory action tracking
- Fee structure comparison
- User growth metrics
- Institutional vs retail mix

2.2 Risk Analytics (CFA Standards)

- **Sharpe Ratio:** (Return - Rf) / Volatility (Rf = 0)
- **Sortino Ratio:** Return / Downside Deviation
- **Value at Risk (VaR):** Historical 95% and 99% confidence
- **Maximum Drawdown:** Peak-to-trough decline

2.3 Crypto-Specific Indicators

- **Volume Analysis:** On-chain vs exchange volume
- **Volatility:** Rolling 30-day realized volatility
- **Correlation:** BTC/ETH correlation, equity beta

3. Risk Metrics Summary

Ticker	Total Return	Ann. Return	Volatility	Sharpe	Max DD
COIN	-40.7%	-10.3%	85.6%	-0.12	-90.9%

4. Detailed Risk Profile

Return Distribution

Metric	Value
Positive Days	46.7%
Best Day	31.11%
Worst Day	-26.40%
Sortino Ratio	-0.20

Value at Risk

Confidence	Daily VaR
95%	-7.86%
99%	-12.09%

5. Data Quality Assessment

Completeness: All trading days covered for analysis period
Stock Data: Yahoo Finance adjusted prices (splits, dividends)
Market Data: Synthetic/illustrative for portfolio demonstration

6. Key Observations

• Crypto equities exhibit extreme volatility compared to traditional assets

• High correlation with Bitcoin price movements

• Regulatory developments significantly impact valuations

• Trading volume and liquidity vary significantly across exchanges

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