Kaiko

Weekly Chartbook

Your go-to cryptocurrency market reference with 40+ updating charts and analytics.

March 6, 2023

The Future of Fiat On-Ramps

Welcome to the Data Debrief! Markets are steady to start the week after a volatile Friday in reaction to the closure of SEN, Silvergate's instant payment network. In other news, the SEC has its eyes set on Binance.US, the Shanghai upgrade on Goerli testnet got a launch date, and Yuga Labs released an ordinals NFT collection. On the data side, we explore:

- Tether's all time high dominance vs. the dollar.
- Rising interest in altcoins as measured by trade volume.
- Strong inflows into crypto ETFs.

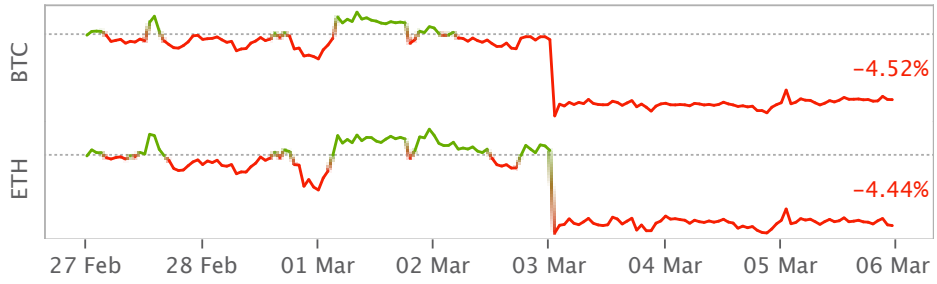
Subscribe to Kaiko's research here.

1. Price Dynamics

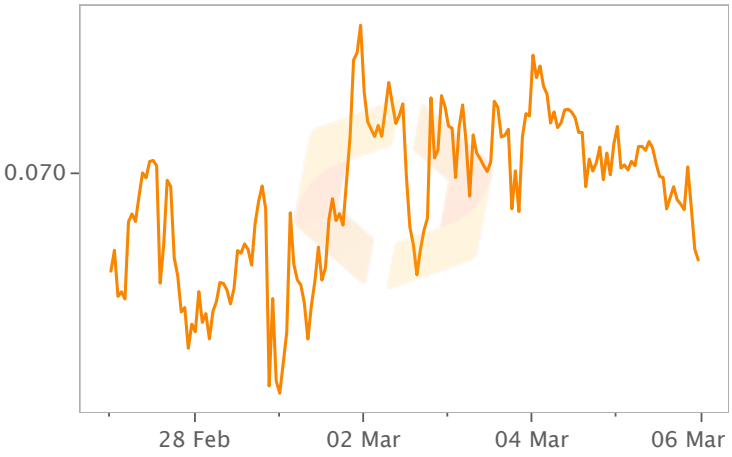
	Bitcoin	Ether
Sunday Close	$22,432	$1,565
All Time High	$68,630	$4,848

7D Returns

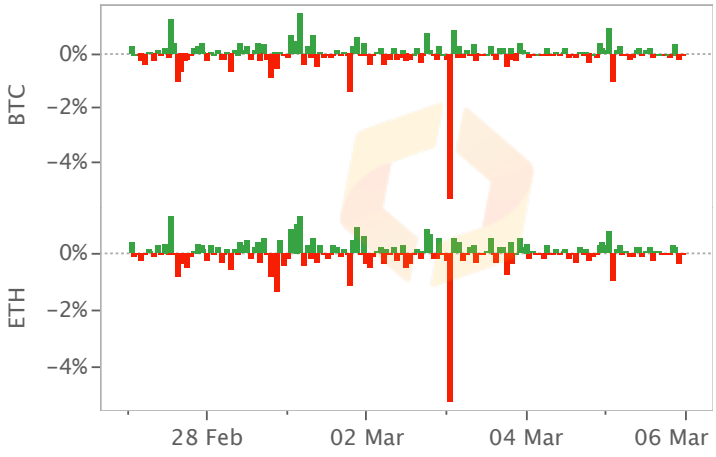
Percentage price change since previous Sunday's close



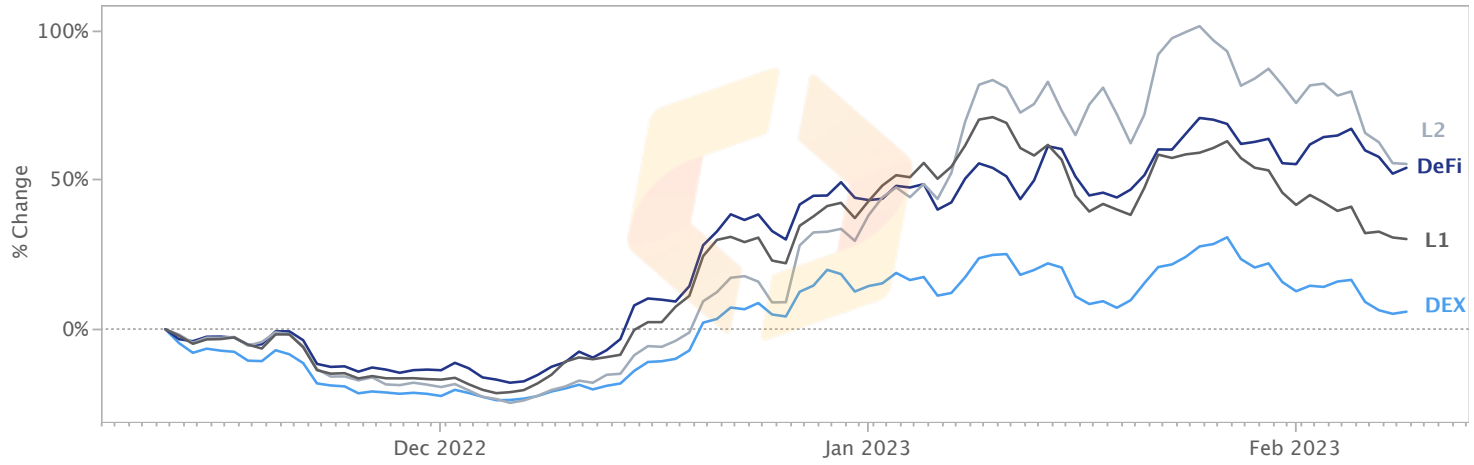
ETH to BTC Ratio



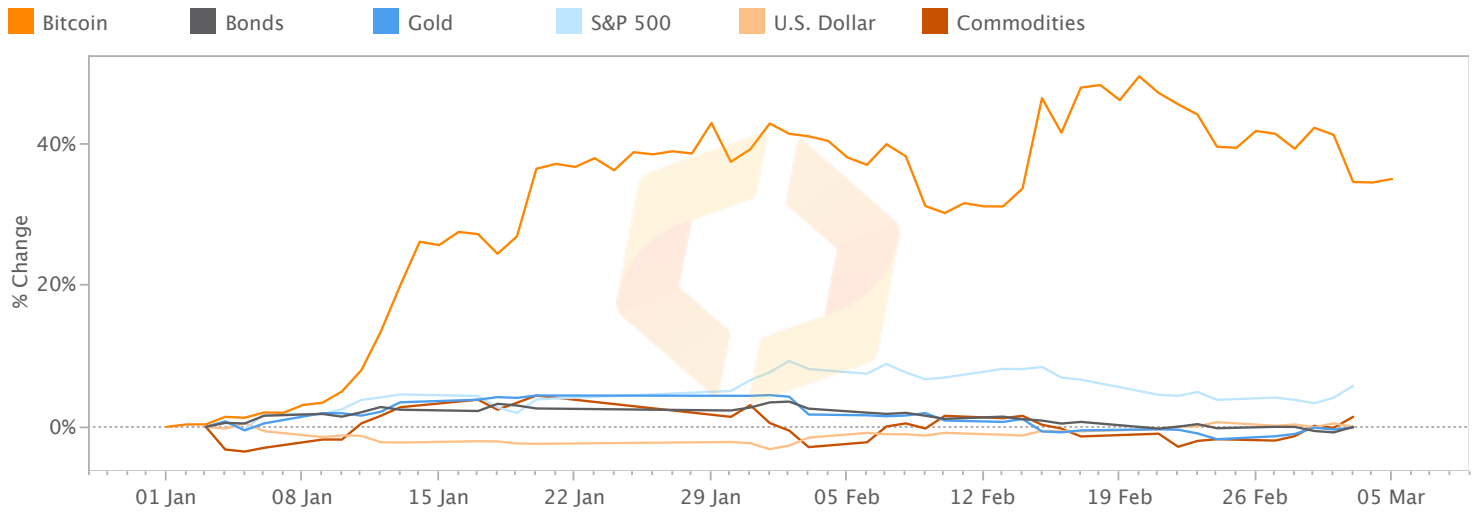
Hourly Returns



90D Crypto Sector Returns

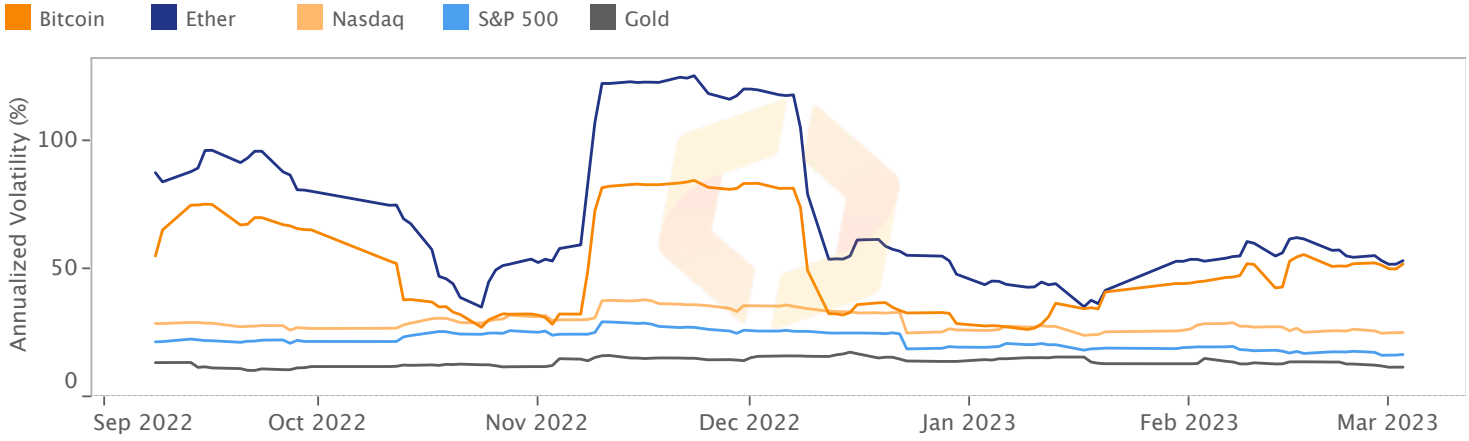


YTD Traditional Asset Returns

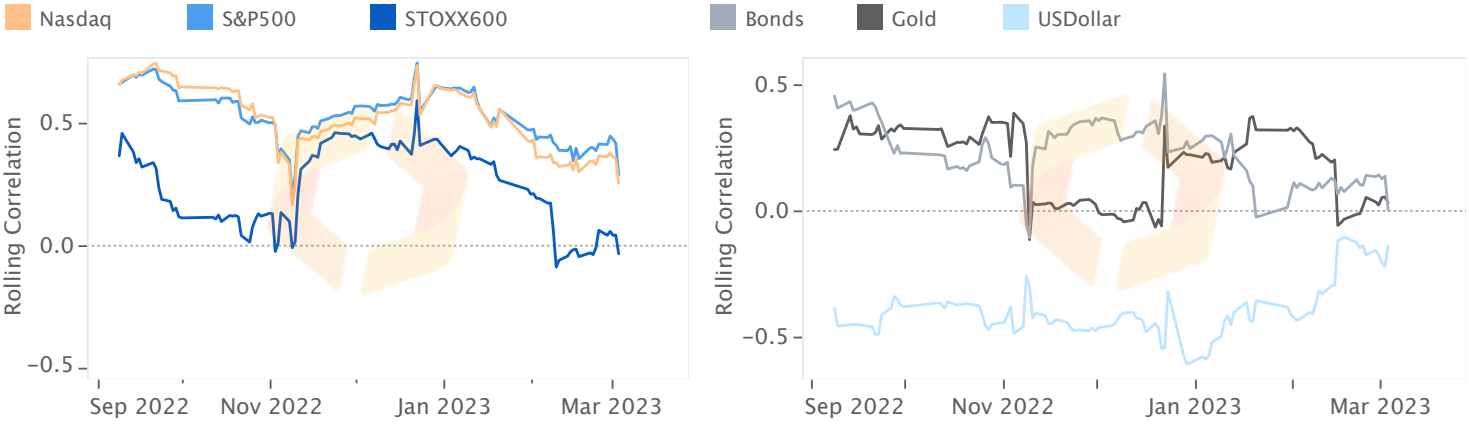


2. Volatility and Correlations

30D Rolling Historical Volatility

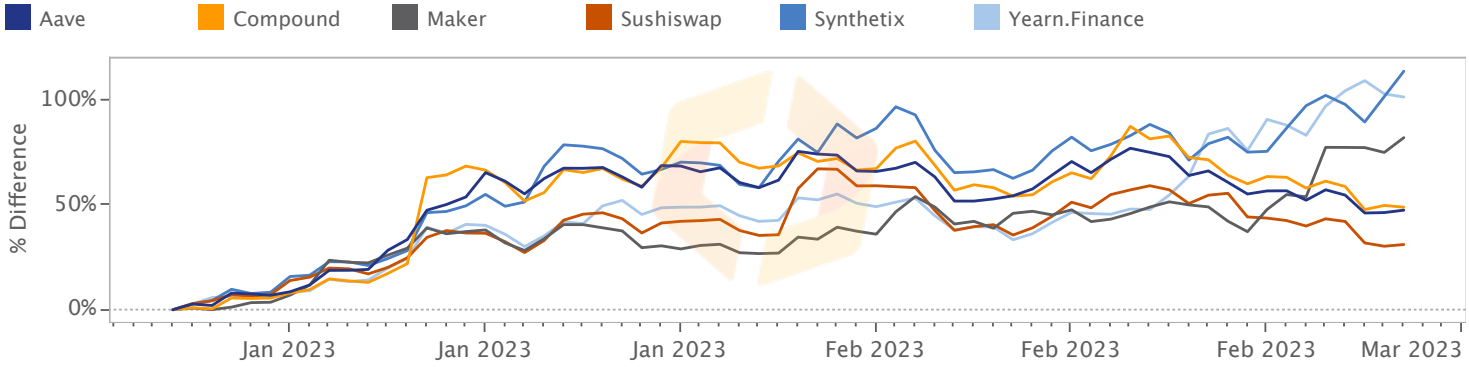


30D Rolling Correlation With BTC Daily Returns

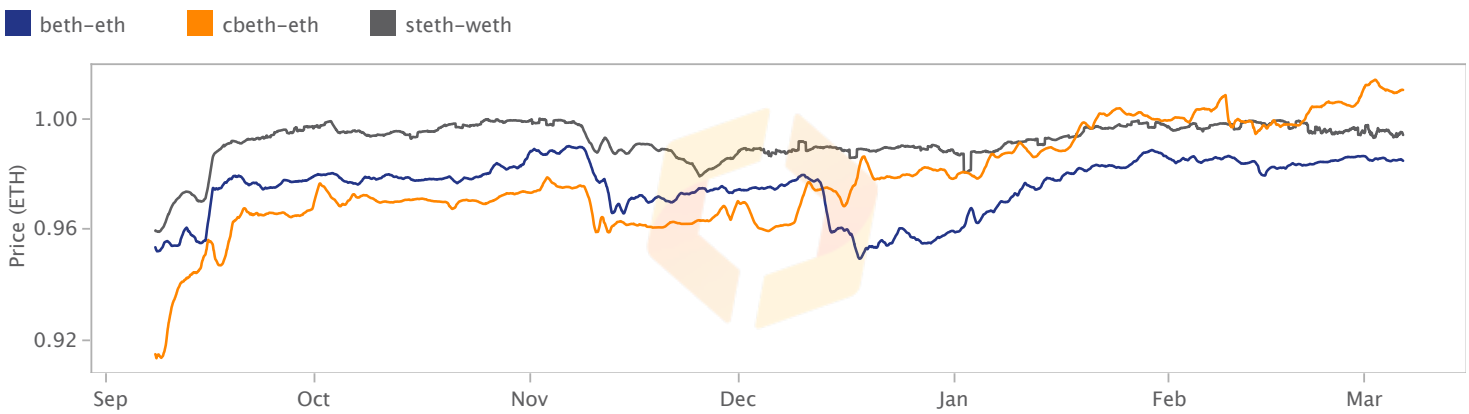


3. DeFi

DeFi Token YTD Returns



Ethereum Staking Token Discount/Premium

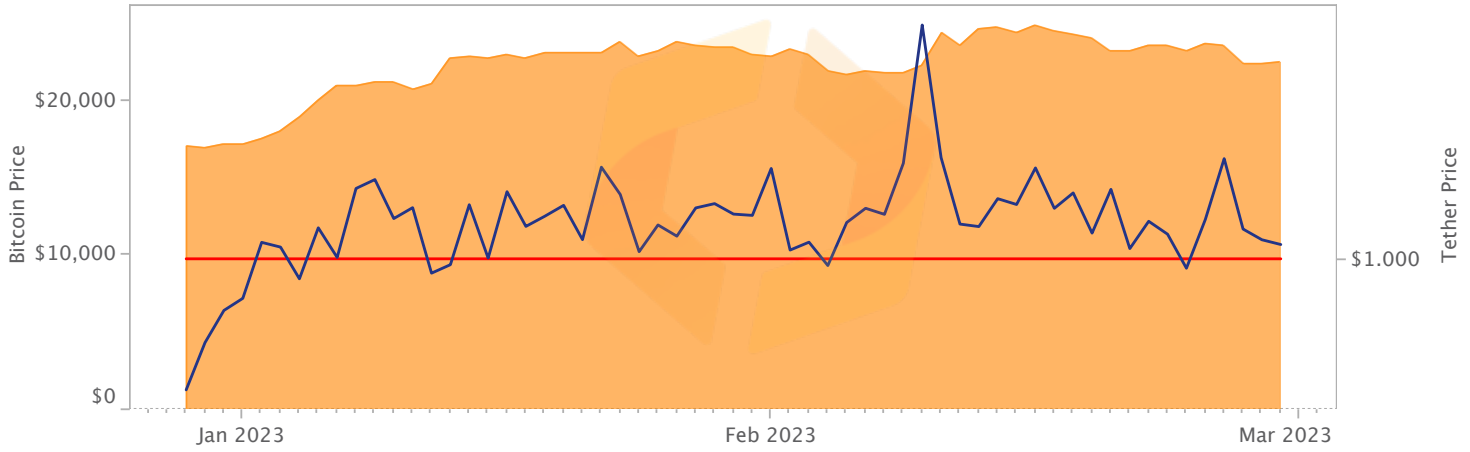


Data sources: Kaiko daily reference rates, Yahoo Finance.

4. Stablecoins

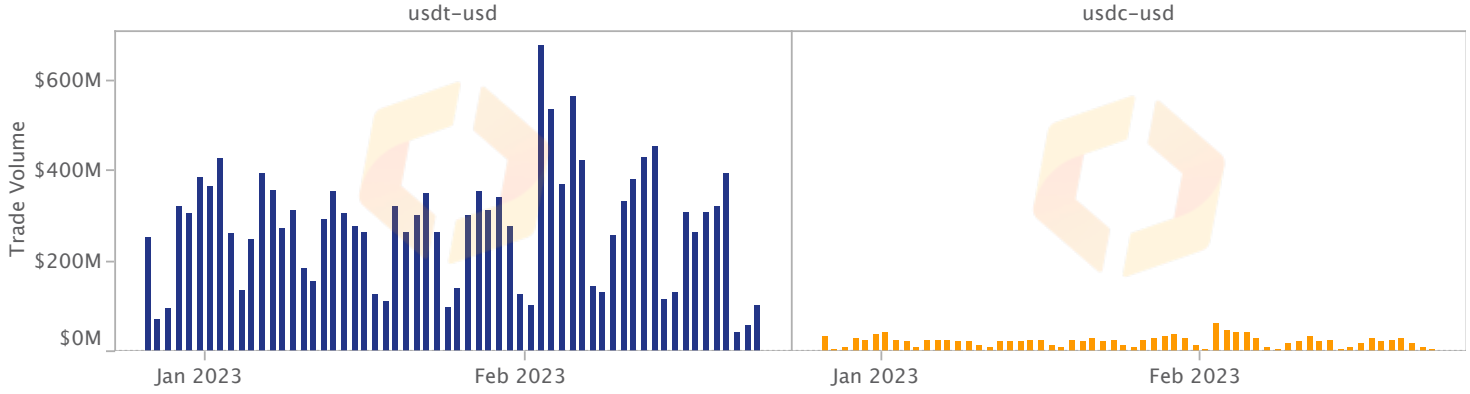
Dollar-Pegged Stablecoin USD Exchange Rate

Tether vs. Bitcoin Price



Daily Trading Volume

Volume aggregated across all USDC-USD and USDT-USD trading pairs

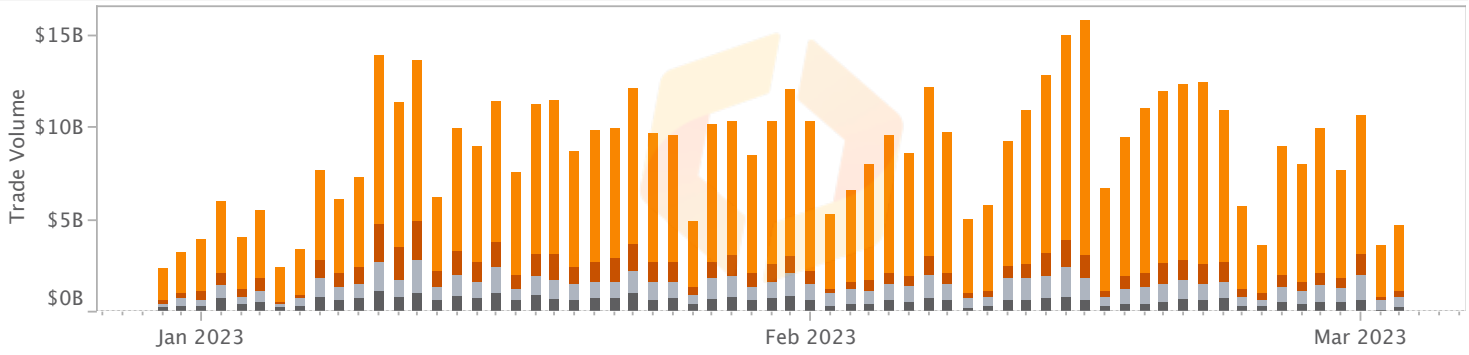


Data Source: Hourly USD exchange rate and aggregated volume

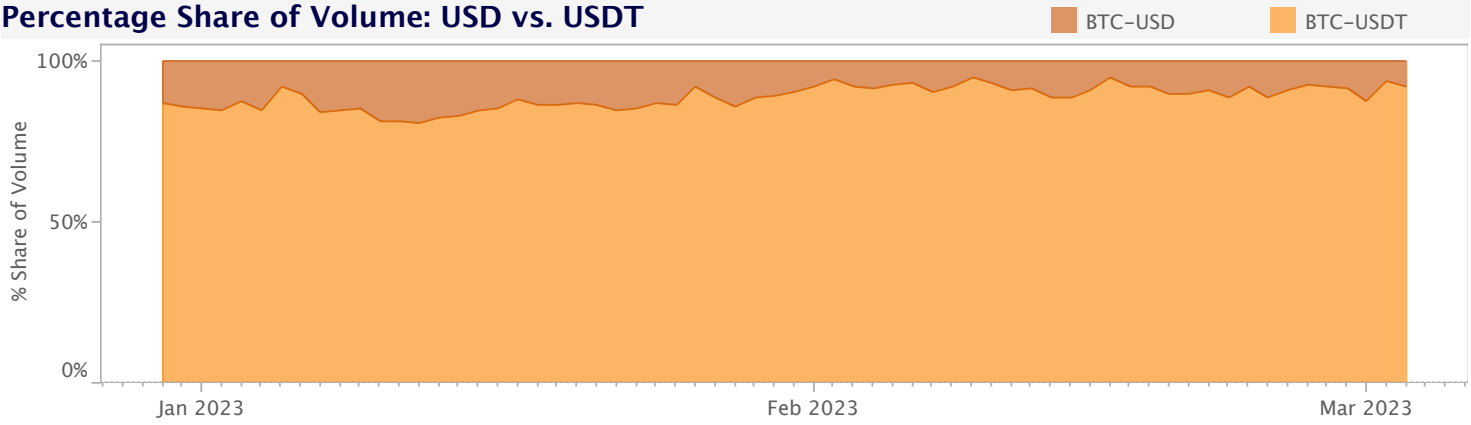
5. Aggregated Volume Dynamics

BTC-USDT BTC-USD ETH-USDT ETH-USD

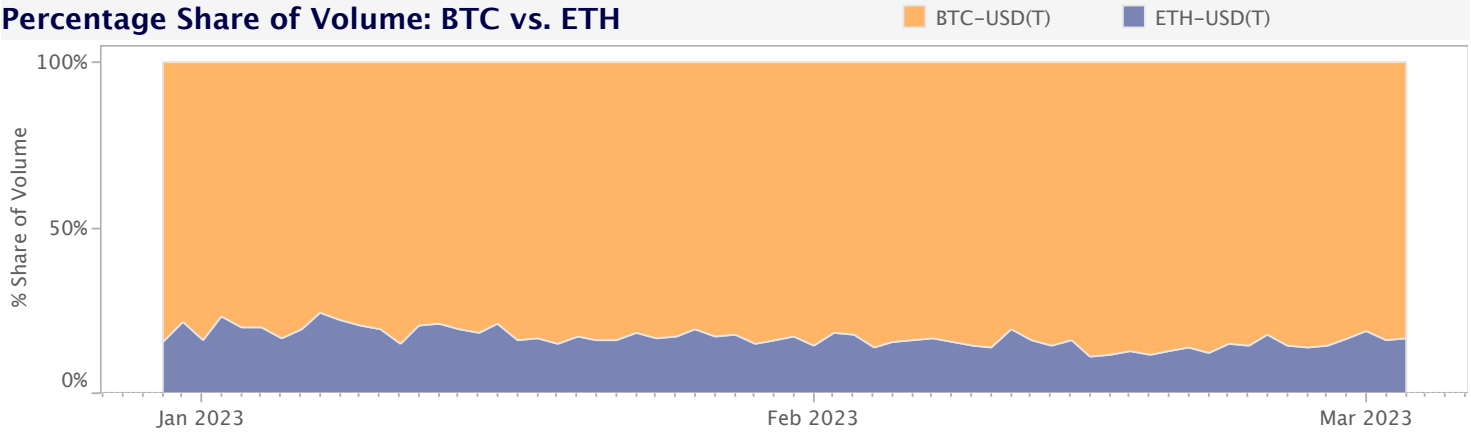
Aggregated Daily Trade Volume



Percentage Share of Volume: USD vs. USDT



Percentage Share of Volume: BTC vs. ETH



Weekly Percentage Difference in Trade Volume

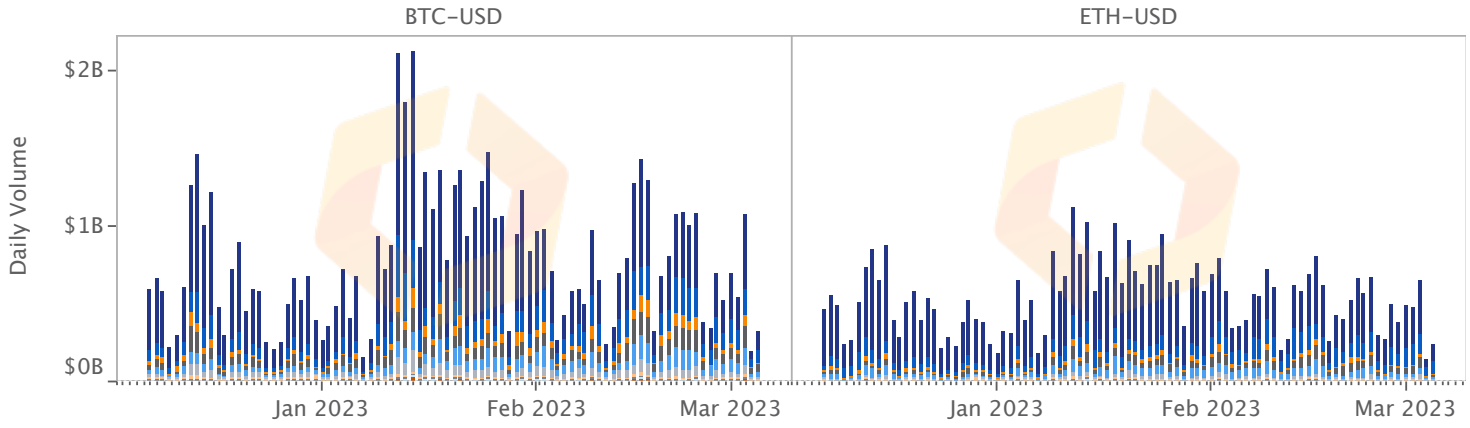
Exchange	BTC-USD		ETH-USD		BTC-USDT		ETH-USDT	
Binance					▲	46.87%	▲	65.85%
Binance US	▼	-2.75%	▲	29.75%	▲	13.74%	▲	63.07%
Bitfinex	▼	-41.09%	▼	-41.28%	▼	-37.33%	▲	5.55%
Bitstamp	▼	-0.41%	▼	-12.67%				
Bittrex	▼	-11.66%	▼	-14.90%	▼	-63.92%	▼	-34.71%
Coinbase	▼	-10.54%	▼	-35.54%				
Gemini	▼	-33.51%	▼	-17.65%	▼	-53.61%	▼	-10.52%
Huobi					▲	13.54%	▼	-11.24%
Itbit	▲	41.85%	▲	10.42%				
Kraken	▼	-53.35%	▼	-51.22%	▼	-22.33%	▼	-68.28%
KuCoin					▼	-24.64%	▲	4.79%
OkCoin	▼	-50.78%	▲	16.00%				
Poloniex					▼	-22.26%	▲	181.53%

Data Source: daily aggregated volume per trading pair and per instrument

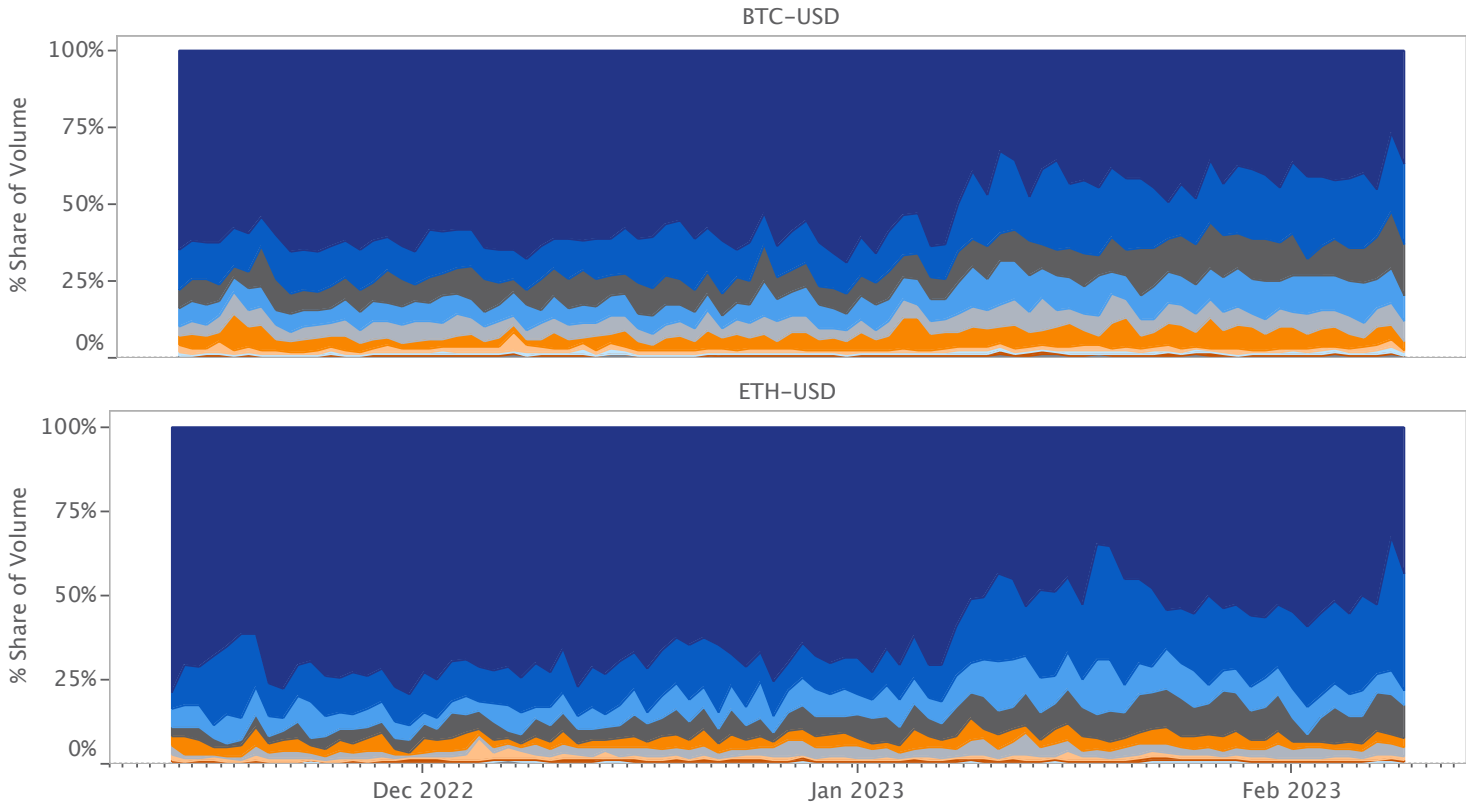
6. Exchange Volume - Fiat Pairs

Coinbase | Bitfinex | Kraken | Gemini | Itbit
Binance US | LMAX Digital | Bitstamp | Bittrex | OkCoin

Daily Trade Volume - 90 Days

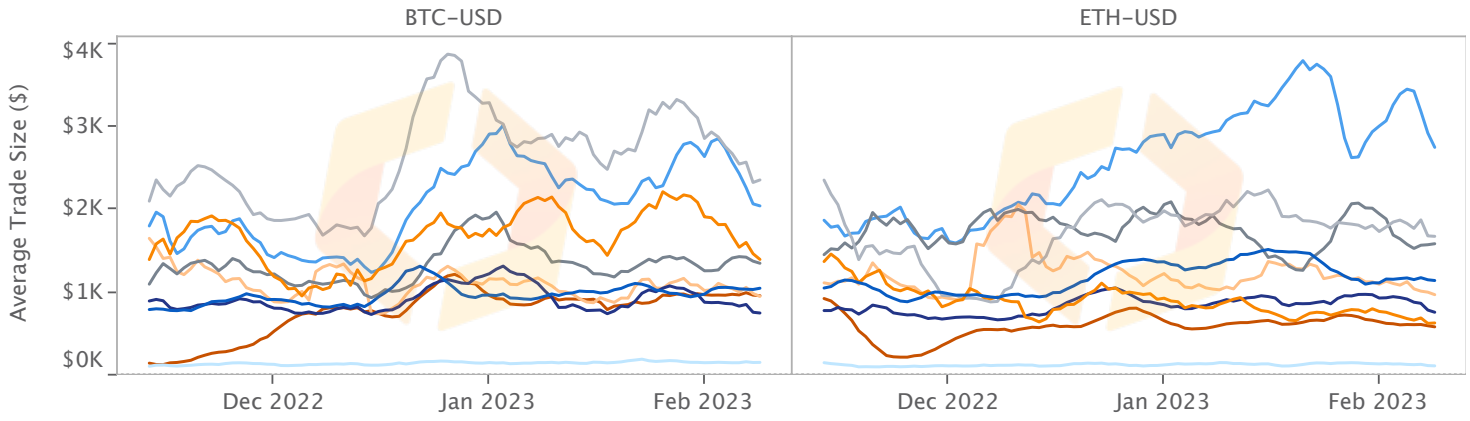


Percentage Share of Volume



Average Trade Size

7D Moving Average

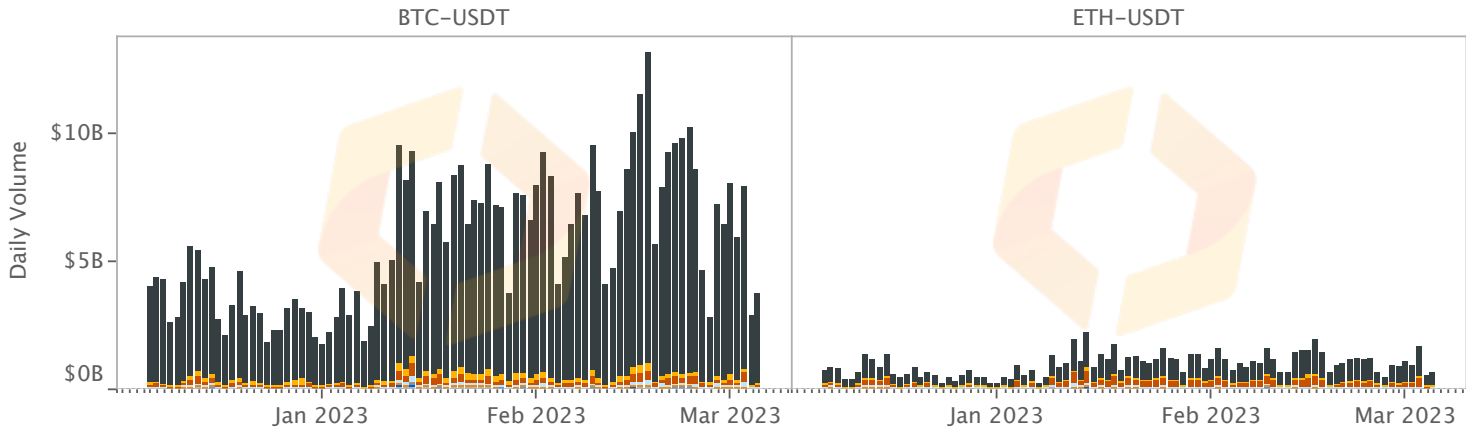


Data Source: Daily aggregated trade volume and count

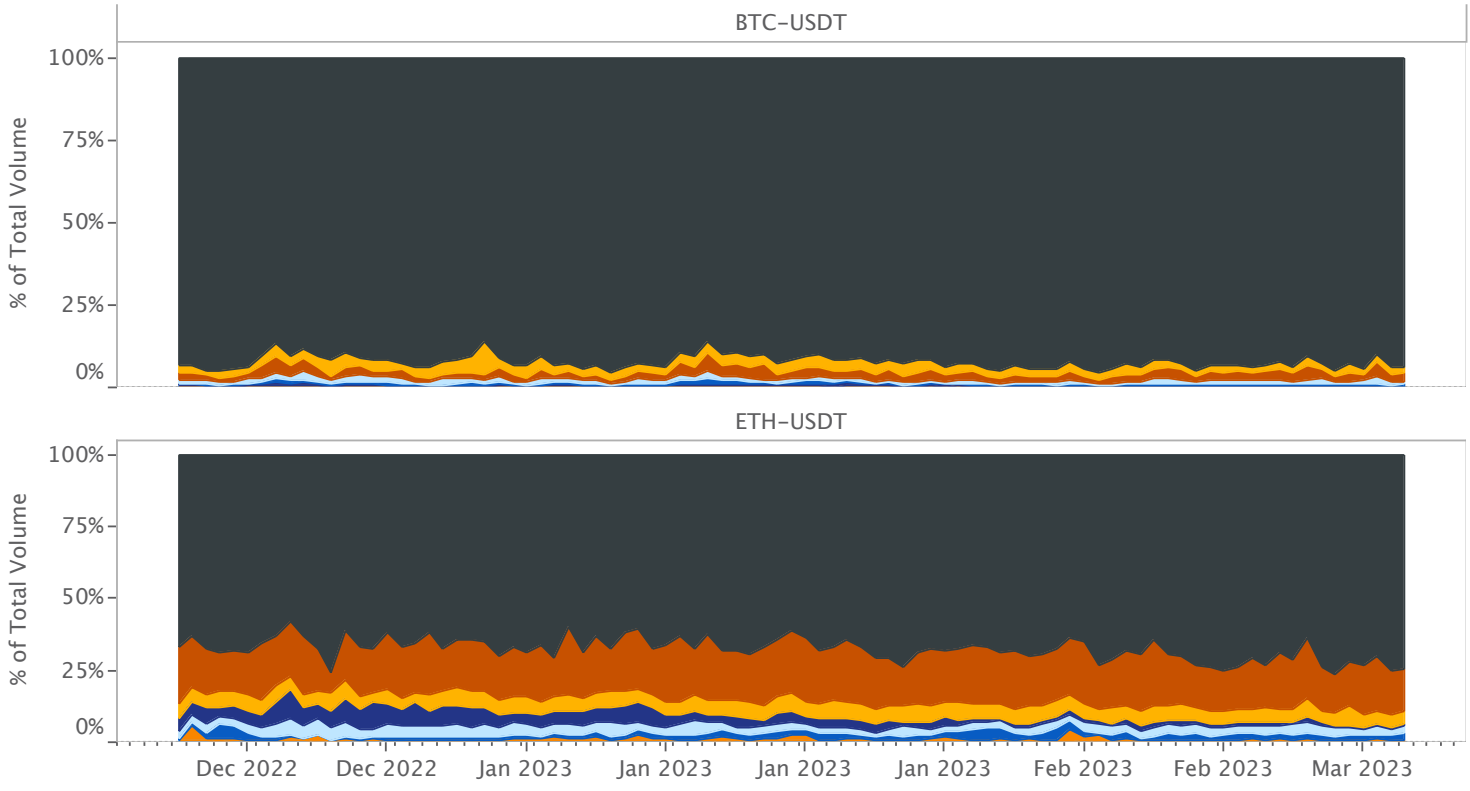
7. Exchange Volume - Tether Pairs

Binance OKX Bitfinex Binance US Gemini
KuCoin Huobi Kraken Bitstamp Coinbase

Daily Trade Volume - 90 Days

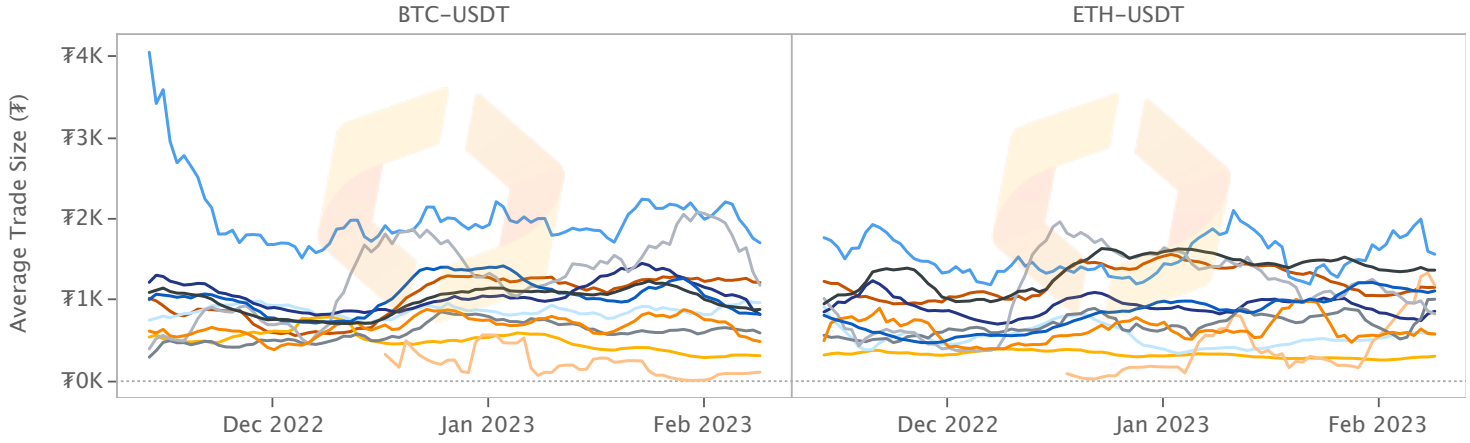


Percentage Share of Volume



Average Trade Size

7D Moving Average



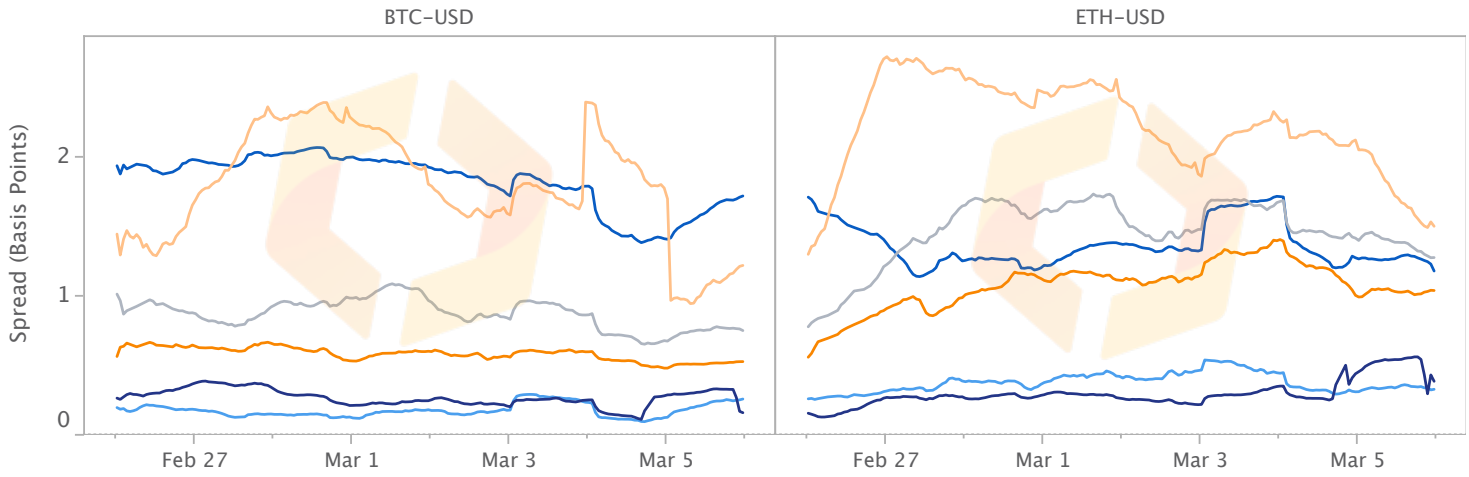
Data Source: Daily aggregated trade volume and count

8. Order Book Liquidity - Fiat Pairs

Coinbase Bitfinex Kraken Bitstamp Gemini Binance US

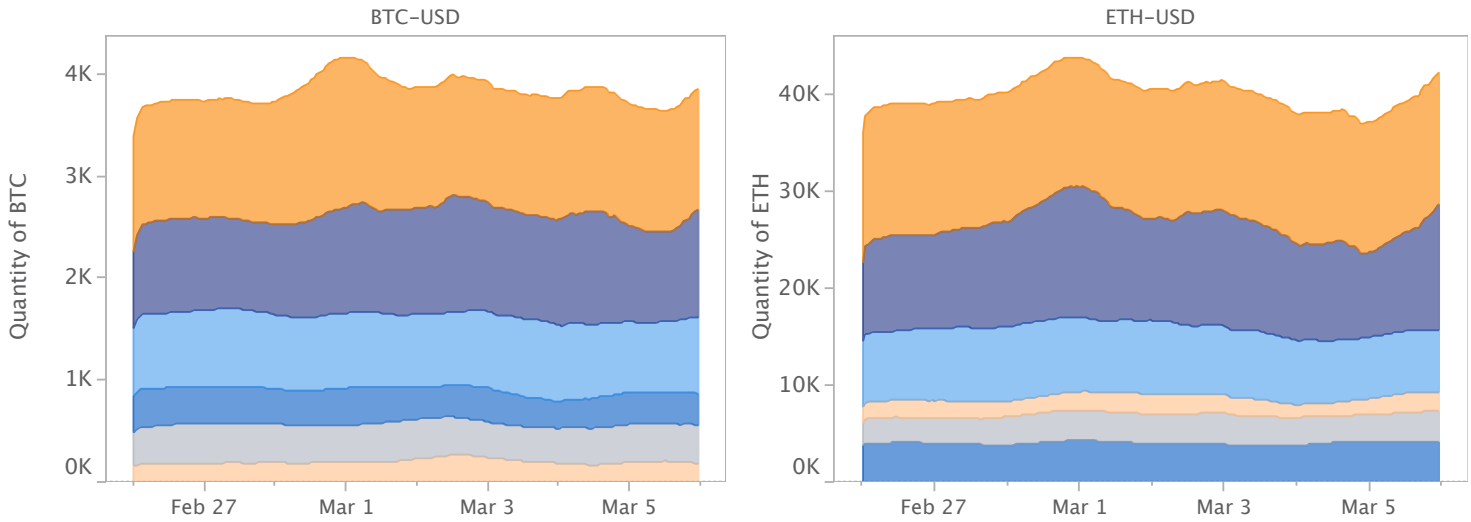
Bid-Ask Spread

The difference between the best ask and the best bid on an asset's order book.



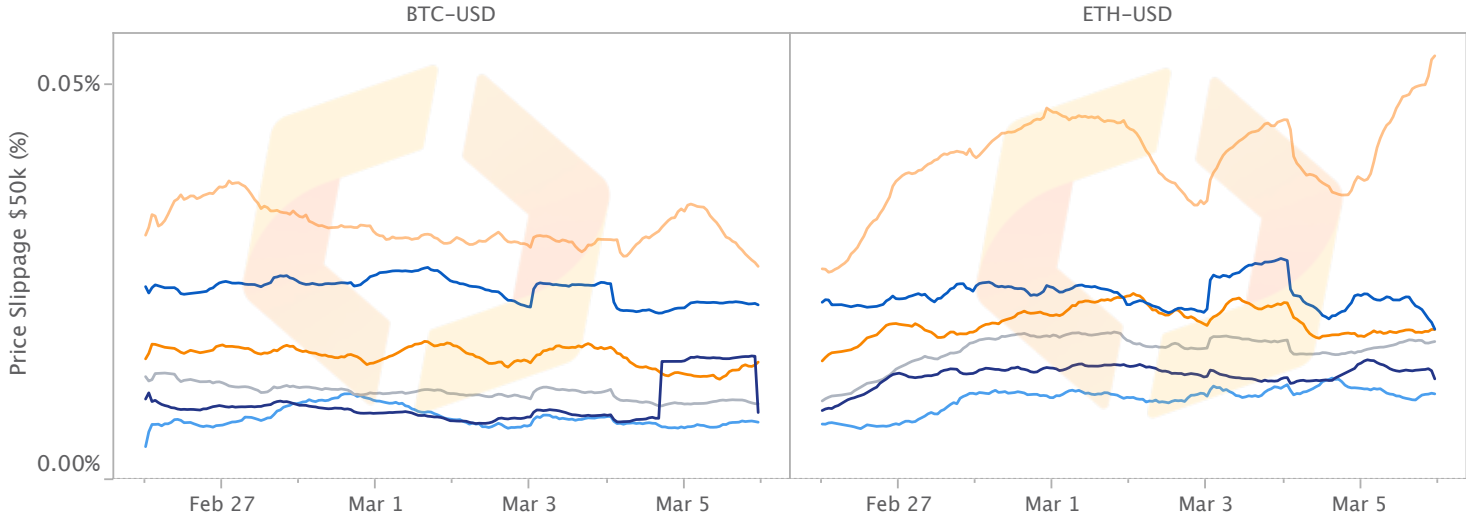
2% Market Depth

The sum of all bids and asks placed within 2% of the midprice on a trading pair's order book.



Price Slippage

The difference between the expected price of a $50k sell order and the price at which the simulated trade is executed.



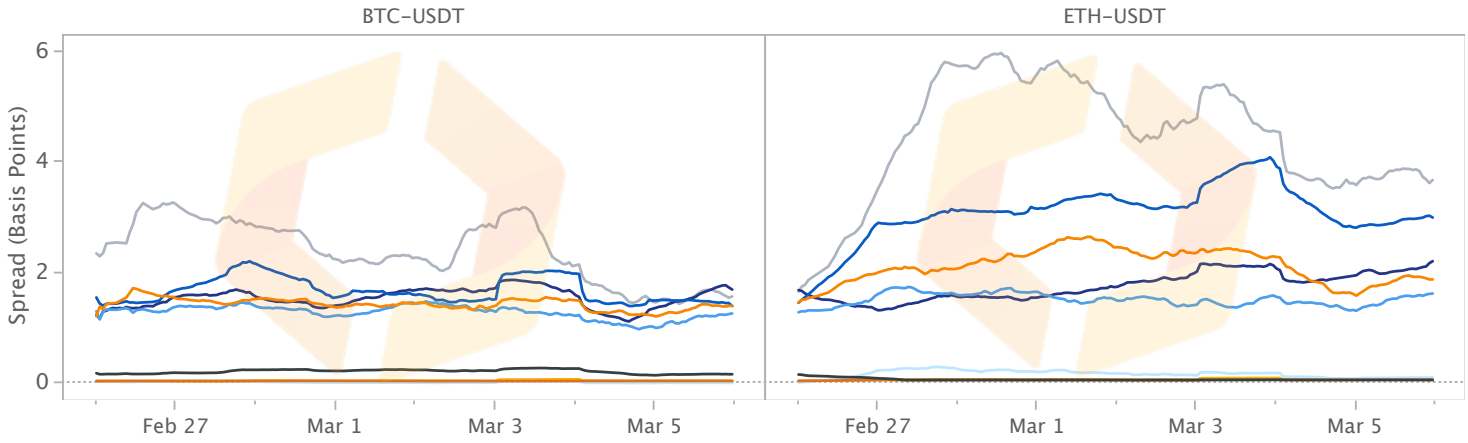
Data Source: Hourly average market depth, bid-ask spread, price slippage

9. Order Book Liquidity – Tether Pairs

Binance OKX Kraken Binance US Bitstamp
Bitfinex Huobi Kucoin Coinbase

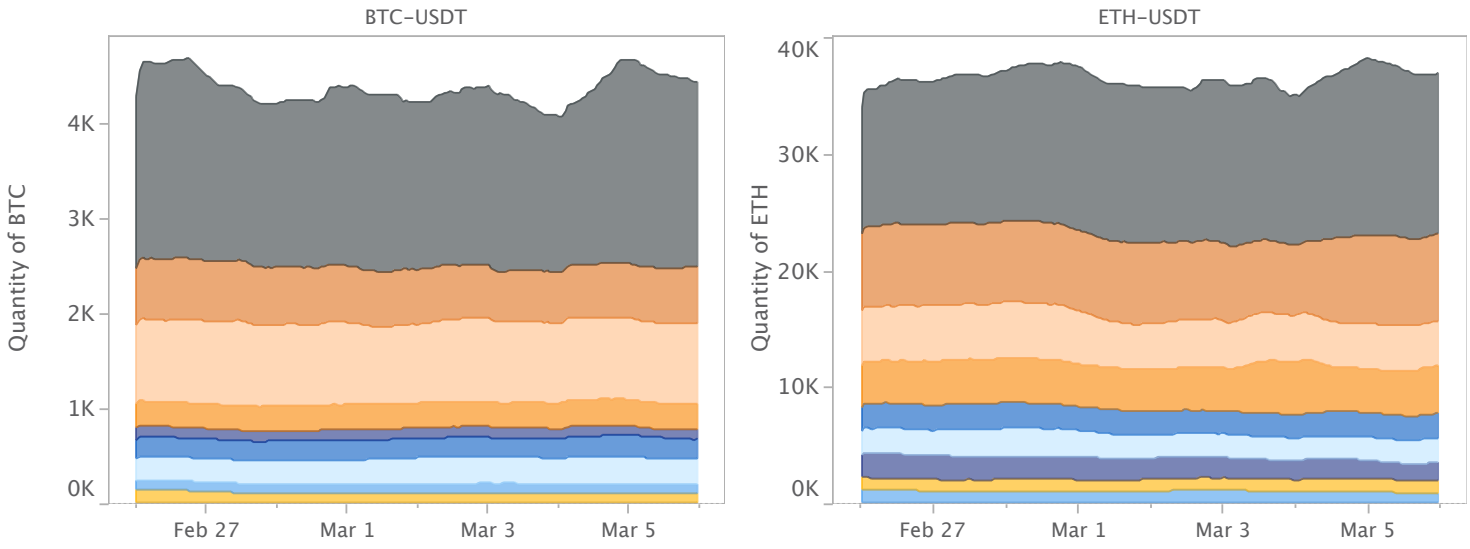
Bid-Ask Spread

The difference between the best ask and the best bid on an asset's order book.



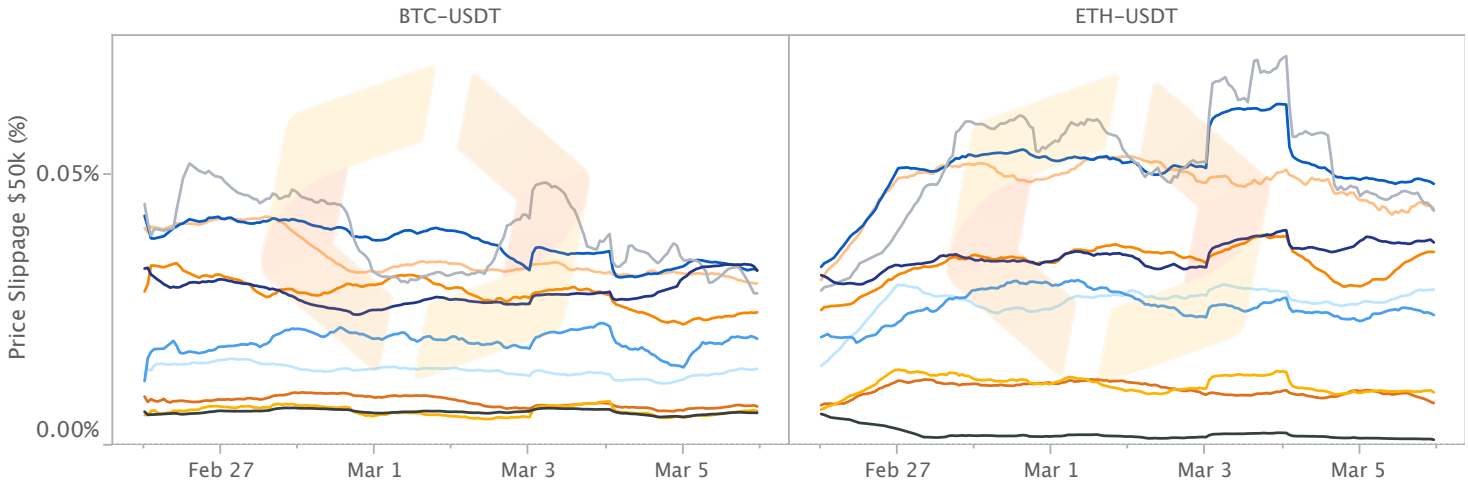
2% Market Depth

The sum of all bids and asks placed within 2% of the midprice on a trading pair's order book.



Price Slippage

The difference between the expected price of a $50k sell order and the price at which the trade is executed.

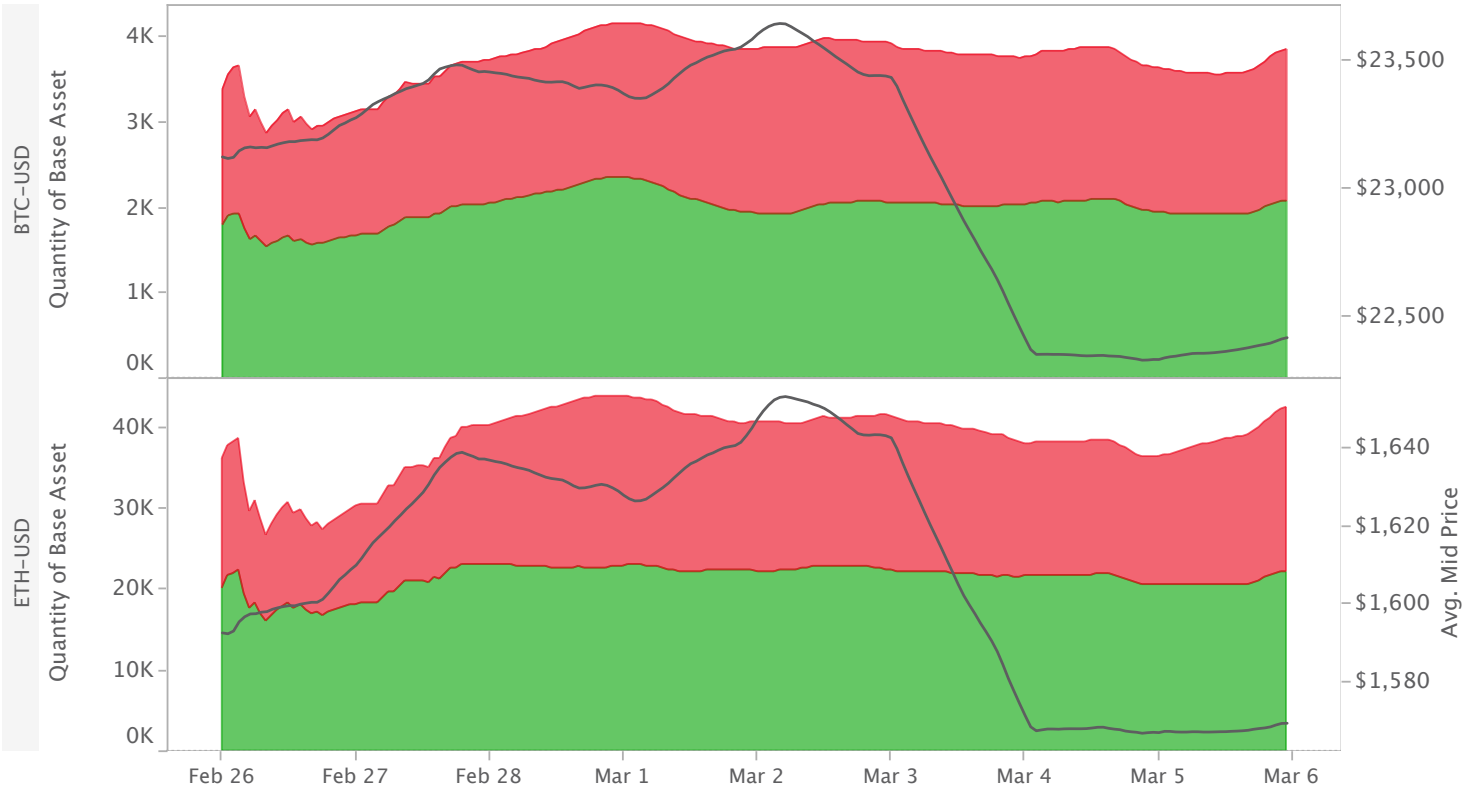


Data Source: Hourly average market depth, bid-ask spread, price slippage

10. Aggregated Order Books

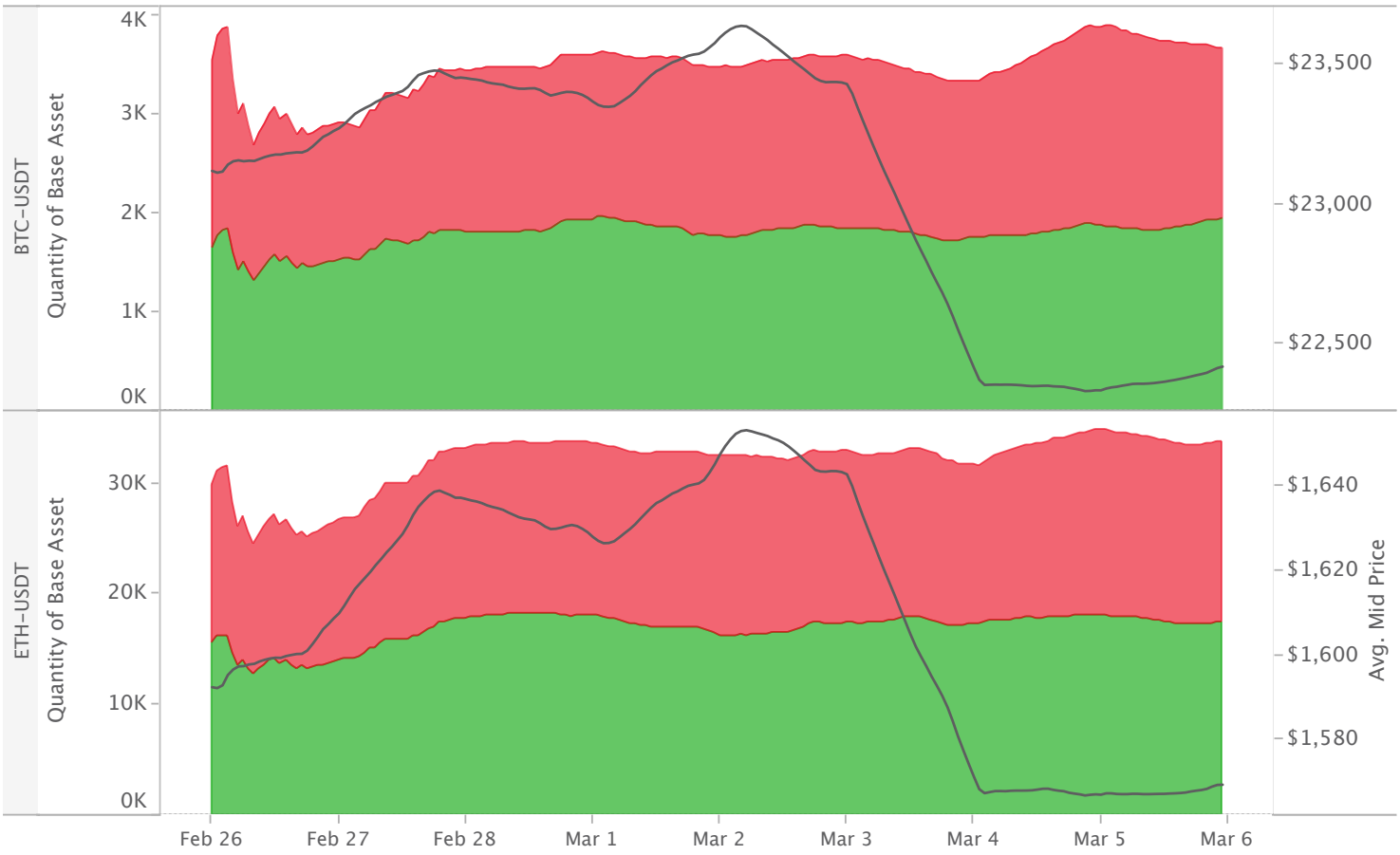
Bid Depth and Ask Depth - USD Markets

The quantity of bids and asks within 2% of the midprice on BTC-USD order books aggregated across Coinbase, Bitstamp, Kraken, Bitfinex, Itbit, Binance US, and Gemini.



Bid Depth and Ask Depth - USDT Markets

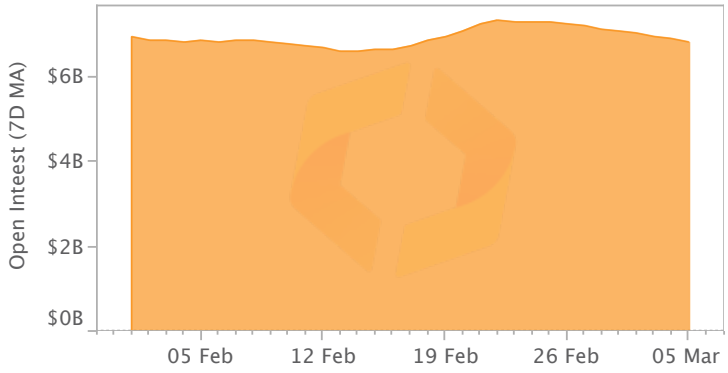
The quantity of all bids and asks within 2% of the midprice aggregated across Binance, Binance.US, Coinbase, Bitstamp, Bitfinex, Kraken, Bittrex, Huobi, OKX and KuCoin.



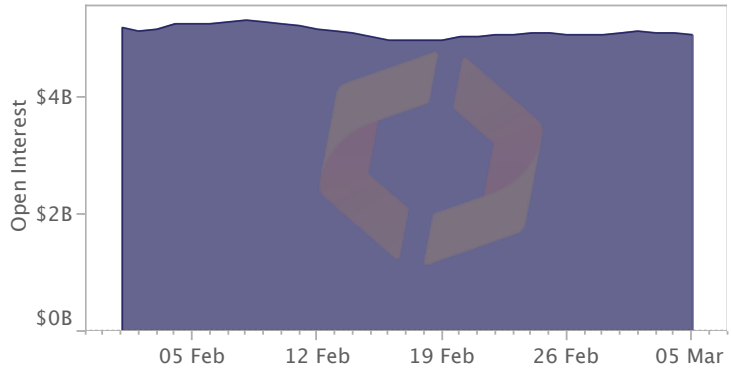
Data source: Average hourly aggregated market depth

11. Derivatives

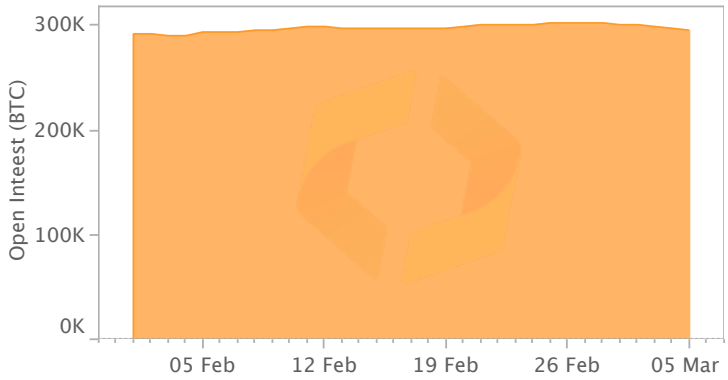
BTC Open Interest (USD)



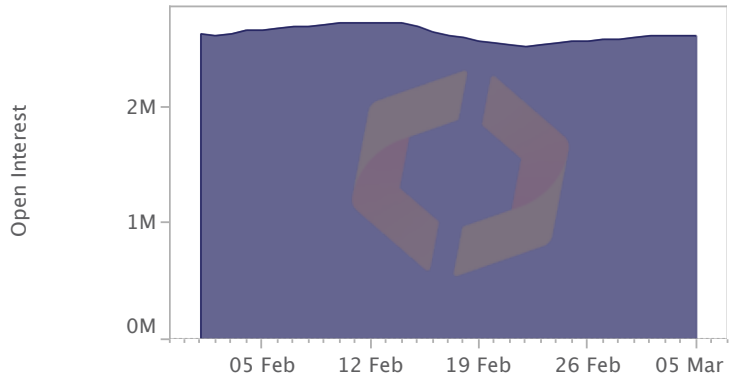
ETH Open Interest (USD)



BTC Open Interest (BTC)

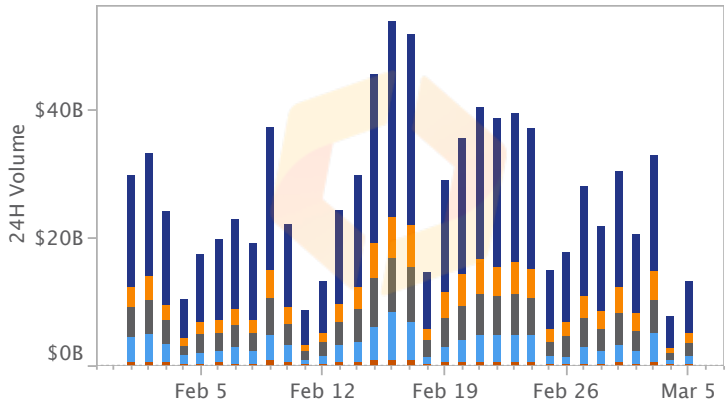


ETH Open Interest (ETH)

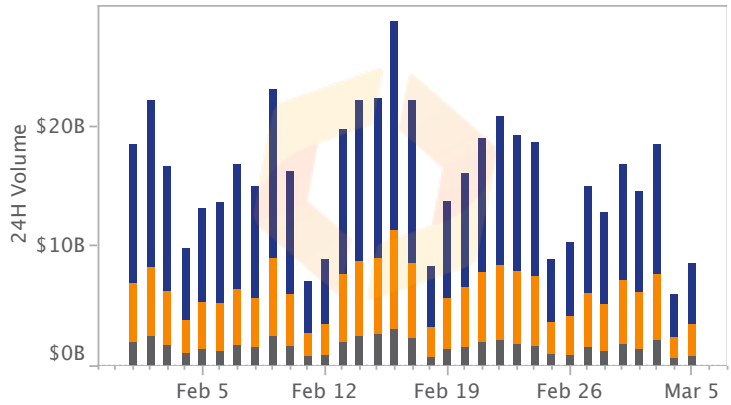


Daily Trade Volume

BTC

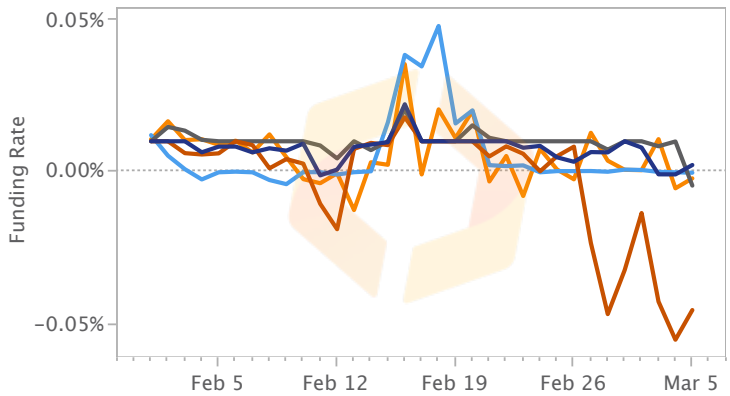


ETH

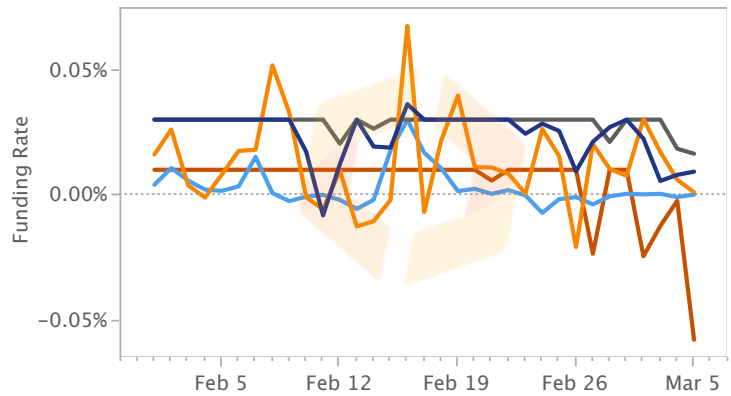


Perpetual Future Funding Rate

BTC



ETH



Data source:Kaiko derivatives data.

This Factsheet was created by Anastasia Melachrinos, Clara Medalie, Jean Mouvilliat, with help from the Kaiko team.

Detailed Methodology

Contact us at hello@kaiko.com or visit www.kaiko.com if you are interested in our enterprise data services.

1. Price Dynamics

Data sources: Kaiko hourly reference rates and valuation data

Returns
Computed as the percentage difference in price since the previous Sunday's close.

Bitcoin/Ethereum Price
The USD price aggregated across the following exchanges: Bitfinex, Kraken, Bitstamp, Coinbase, BitFlyer, Gemini, itBit, Bittrex. The price is derived from our direct exchange rate calculation, which is the volume-weighted average price (VWAP) of all exchange-pair VWAPs at hourly time intervals.

Hourly Returns
The hourly percentage difference in price.

Bitcoin - Fiat Premium
The premium for purchasing Bitcoin with fiat (KRW, EUR, GBP, JPY) versus USD derived from the following example formula:

$$Premium_{KRW} = \frac{BTC/KRW * KRW/USD}{BTC/USD} - 1$$

Valuation Data
We build five equally weighted multi-asset portfolios for the top assets by market cap for each crypto sector using Kaiko's custom valuation tool.
Layer 1: ada, avax, ftm, sol, atom; Layer 2 : op, skl, dydx, lrc, matic ; Top 2: btc,eth; DeFi: mkr, ldo, aave, comp, cvx ; DEX : uni,sushi,bal,crv. Usd pairs. Subject to change depending on market conditions.

More information about our valuation tool can be found here:
https://www.kaiko.com/pages/custom-valuation

2. Volatility and Correlations

Data sources: Kaiko hourly reference rates, FRED St. Louis, Quandl

30D Historical Volatility
The volatility of each asset is calculated by taking the annualized 30 day rolling standard deviation of daily log returns. Data for Nasdaq and S&P 500 comes from FRED St. Louis and Gold from Quandl.

30D Rolling Correlation with Bitcoin Daily Returns
Calculated using the daily log returns over the past 30 days, for selected crypto-pairs and traditional indexes including Nasdaq, S&P 500 and gold. Data for Nasdaq and S&P 500 comes from FRED St. Louis and Gold from Quandl. The correlation coefficient takes a value of 1 when two assets are perfectly correlated, 0 when there is no linear interdependence, and -1 when perfectly anticorrelated.

3. DeFi Data

Data sources: Kaiko daily USD cross exchange rates

DeFi Token Weekly Returns
The percentage price difference since the previous Sunday's daily USD volume-weighted average price. Aggregated USD price data is calculated using Kaiko's USD exchange rate methodology which finds the path of highest liquidity between each DeFi asset and the closest USD trading pair. Not every DeFi asset trades against USD, which requires us to use cross rates to determine a USD price.

DeFi Token YTD Returns
The percentage price difference since January 1st, 2021.

4. Stablecoins

Data sources: Kaiko hourly direct USD exchange rate and aggregated volume

Dollar-Pegged Stablecoin USD Exchange Rate

The hourly USD exchange rate for all stablecoin-USD pairs in Kaiko's data collection (view every instrument used in this calculation here). This is calculated by taking the hourly VWAP for each stablecoin-USD pair (ex. USDT-USD on Bitfinex), and then taking the VWAP for USDT-USD pairs across all exchanges.

Tether vs. Bitcoin Price

The hourly Tether and Bitcoin price averaged across all exchanges that offer a USDT-USD and BTC-USD trading pair.

USDT-USD Trading Volume

Aggregated daily volume across all exchanges that offer a USDT-USD trading pair (full list of instruments used in this calculation here).

5. Aggregated Volume

Data sources: Daily aggregated volume per trading pair and per instrument

Aggregated Trade Volume

Daily aggregated volume across a selection of exchanges for the listed trading pair. Full list of instruments included in the calculation can be viewed here.

Percentage Share of Volume: BTC-USD vs. BTC-USDT

Daily aggregated volume for BTC-USD and BTC-USDT trading pairs (full list of instruments included in this calculation here). Assuming that most institutional traders prefer transacting with USD, when there is a spike in BTC-USD volume this suggests USD inflows or a sell-off.

Percentage Share of Volume: BTC-USD vs. ETH-USD

Daily aggregated volume for BTC-USD and ETH-USD trading pairs (full list of instruments used in this calculation here). Assuming Ethereum is a proxy for altcoin markets, when volume for ETH-USD spikes this suggests that traders are rotating funds out of Bitcoin and into Ethereum and altcoin markets.

Weekly Percentage Difference in Trade Volume

Percentage difference between most recent week of volume and previous week of volume for each listed instrument.

6/7. Exchange Volume - Fiat/Tether Pairs

Data sources: Daily aggregated trade volume and count per instrument

Trade Volume

Daily aggregated volume per trading pair per exchange.

Percentage Share of Volume

Percentage volume of trades for each trading pair per exchange.

Average Trade Size

The total volume of trades (volume of base asset * price) / trade count. For Tether pairs, the average trade size is denominated in USDT. A higher average trade size suggests that more institutional traders are using the exchange.

8/9. Order Book Liquidity - Fiat/Tether Pairs

Data sources: Average hourly bid-ask spread, market depth, price slippage

Bid-Ask Spread

The wider the bid-ask spread, the less liquid the traded instrument. We calculate spread from Kaiko's raw order book snapshots which are taken twice per minute. We take the difference between the best ask and the best bid for each snapshot, and then take the average for all values for spread over the course of 1 hour. To normalize the spread, we divide by the mid price and then multiple by 10,000 to get the spread in *basis points.* One basis point is equal to 1/100th of 1%, or 0.01%, or 0.0001, and is used to denote the percentage change in a financial instrument. A 24-hour moving average is applied.

2% Market Depth

Market depth is an indicator of liquidity: the higher the market depth, the deeper the order books, and the less likely a large market order will move the price of an asset. Market depth is derived from Kaiko's raw order book snapshots which are taken twice per minute. Each of our order book snapshots includes all bids and asks within 10% of the midprice. For this chart, we cut each snapshot down to all bids and asks within 2% of the midprice, which better reflects changes in market dynamics. We then take the average of

2% market depth over the course of 1 hour. Finally, we take the sum of both 2% Bid Depth and 2% Ask Depth for each instrument. A 24-hour moving average is applied.

Price Slippage

We calculate slippage using raw order book snapshots taken twice per minute. Slippage is calculated by running a $50k sell order through the bid side of an order book. The steps below run through an example calculation for placing a $50k sell market order which would give a value for Bid Slippage. The same steps can be followed for buy orders and orders of different values:

Step 1: Run through sorted Bids by price level until $50k sell order is filled, starting from the Best Bid.

Step 2: Compute the Average Sell Price using all Bids needed to fill the $50k order. For example, in an imaginary order book where there are Bids at $10,000 for 3 Bitcoin and Bids at $10,100 for 4 Bitcoin, the Average Sell Price would be ($30,000 + $40,400)/7 = ~ $10,057.

Step 3: Calculate the percentage of variation between the Best Bid and Average Sell Price using the formula: |Average Sell Price — Best Bid| / Best Bid.

A 24-hour moving average is applied.

10. Aggregated Order Books

Data sources: Average hourly aggregated market depth

Bid Depth and Ask Depth

Instead of adding Bid Depth and Ask Depth, we separate depth per side of the order book, and aggregate across multiple exchanges that offer a BTC-USD and ETH-USD trading pair. This is calculated by taking the quantity of all bids and asks within 2% of the midprice on USD order books aggregated across Coinbase, Bitstamp, Kraken, Bitfinex, Binance US, Itbit, Bittrex, and Gemini. The data is an hourly average with a 24 hour moving average applied. The average mid price is also charted with a 24 hour moving average.

Ratio of Bid Depth to Ask Depth

The quantity of aggregated bids divided by the sum of total market depth (sum of both bids and asks). When the ratio is above .5, this means that the quantity of bids is higher than the quantity of asks.

DATA SOURCES

All crypto data is provided by Kaiko.

Data for Nasdaq and S&P 500 is sourced from FRED St Louis API.

Data for gold is sourced from Quandl.

ABOUT KAIKO

Founded in 2014, Kaiko is a market data provider in the digital finance industry providing institutional investors and market participants with enterprise-grade data infrastructure. Kaiko's comprehensive and granular market datasets are sourced from 100+ crypto exchanges, comprising 95,000+ spot and derivatives instruments. All historical and live data is consolidated and accessible through a REST API and livestream WebSocket or in downloadable CSV files.

TERMS AND CONDITIONS

Any redistribution of charts appearing in this Factsheet must mention Kaiko as the sole provider and creator.

INTERESTED IN OUR DATA?

Contact Kaiko at hello@kaiko.com or visit our website at www.kaiko.com to speak to an expert. We provide data solutions for enterprises and will give a response within 24 hours.