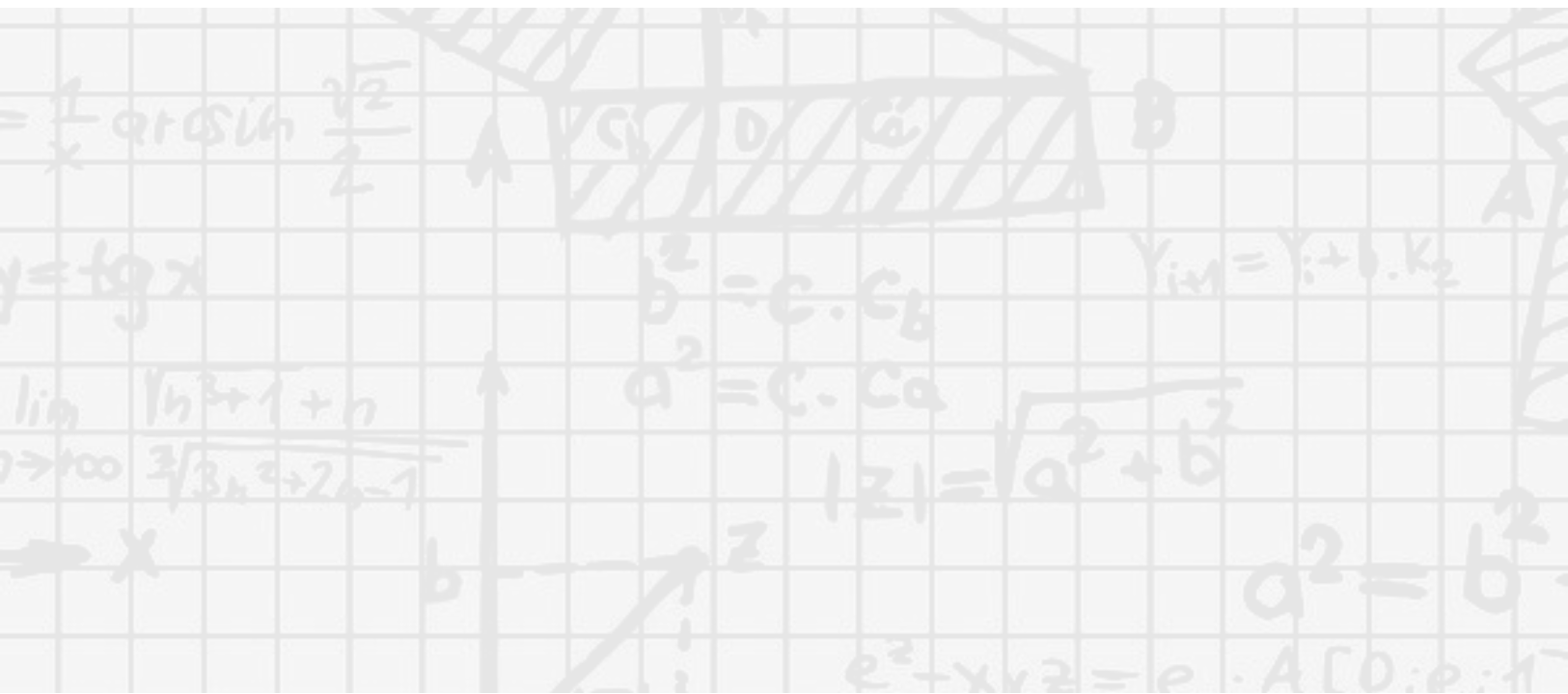


# Digital Asset Markets Report

March 2023



The S2F Intelligence report examines network fundamentals using on-chain analysis, technical tools, and proprietary indicators. We aim to provide insight into how digital assets perform during these unprecedented times. By recognizing trends in both momentum and volatility, we seek to identify opportunities while navigating uncertain market conditions.

## Macro Overview

- S&P500 and Dow indices are currently up 9.2% and 2.3% YTD, respectively, while the NASDAQ is up 13.2%.
- European Central Bank raised interest rates by 50 bps at the March meeting bringing the euro-zone benchmark to 3%.
- Federal Reserve raised interest rates by 25 bps at the March FOMC, which brings US interest rates to 4.75% - 5%.
- March CPI (Y/Y) data came in below expectations of 5.1% at 5.0%, while Core CPI (M/M) data aligned with expectations at 0.4%.
- CME Group Fed Funds futures are pricing in an 83.5% likelihood of another 25 bps hike and a 16.5% chance of a pause at the May FOMC.
- The US10Y and US3M yield spread declined to a new inversion extreme in March before extending further to -1.67 in April.

## Macro Performance

Page 1

- Digital assets' total market cap hit a new yearly high of \$1.24tn before closing March at \$1.14tn.
- GLD (Gold ETF) marched higher in March/April as the asset currently trends in positive territory, +8.9% on the year.
- OPEC's unexpected announcement of production cuts pushed oil back above \$80/barrel, currently \$80.26/barrel.
- The GSG commodity index continues to underperform against traditional indices and is flat -0.2% YTD.

## On-Chain Analysis

Page 2

- **LTH SOPR (Monthly/Yearly)** : When the long-term holder 30d SOPR > is greater than the 365d SOPR for long-term holders, it can signal potential upside in markets - the ratio recently entered positive territory for the first time since August 2020.
- **ETH Supply Distribution (Post-Withdrawals)** : Since the Beacon chain launch, the total supply of ETH on exchanges has fallen from 26% to 15.1%. Post-withdrawals, there is currently 18.7mm ETH staked (15.5% supply), which now exceeds the total exchange supply.

## Technical Levels

Page 3

- **Bitcoin**: BTC has appreciated 28.6% since 50d MA crossed 200d MA - current price action has the chance to establish support above previous resistance.
- **Ethereum**: ETH has appreciated 20.1% since 50d MA crossed 200d MA but has underperformed BTC YTD.

## Momentum & Sentiment

Pages 4-5

- **S2F momentum model**: The model rebalanced to a full market allocation.
- **Alt-season indicator**: The indicator shows strength in BTC vs. all other assets.
- **Delta risk**: This indicator remains risk-on as both BTC and ETH have pushed higher.

## Market Radar

Pages 6-7

- **Bank Run Fears** : Depositor outflows due to higher yields from other fixed-income investments can pressure bank balance sheets with exposure to long-duration fixed-income assets, resulting in their forced conversion to a realized loss.
- **Bank Term Funding Program** : The Fed enacted a new lending facility to backstop the realized losses of distressed securities on bank balance sheets - eligible BTFP participants may deposit securities and receive cash at the asset's par value.
- **Fed Balance Sheet Expansion & Contraction**: As a result of this intervention, the Fed balance sheet has grown by almost ~\$400bn (unwinding ~60% of its 2022 QT), although there are hopes capital outflows in the banking sector are stabilizing.
- **Lending Conditions & Inflation** : While bond markets are signaling a potential reduction in interest rates from the Fed before the end of 2023, this action might be brought on by a weaker economy due to stricter lending conditions.

## Notable News

Page 8

- Bitcoin, Ethereum, Layer One, and Other Headlines.

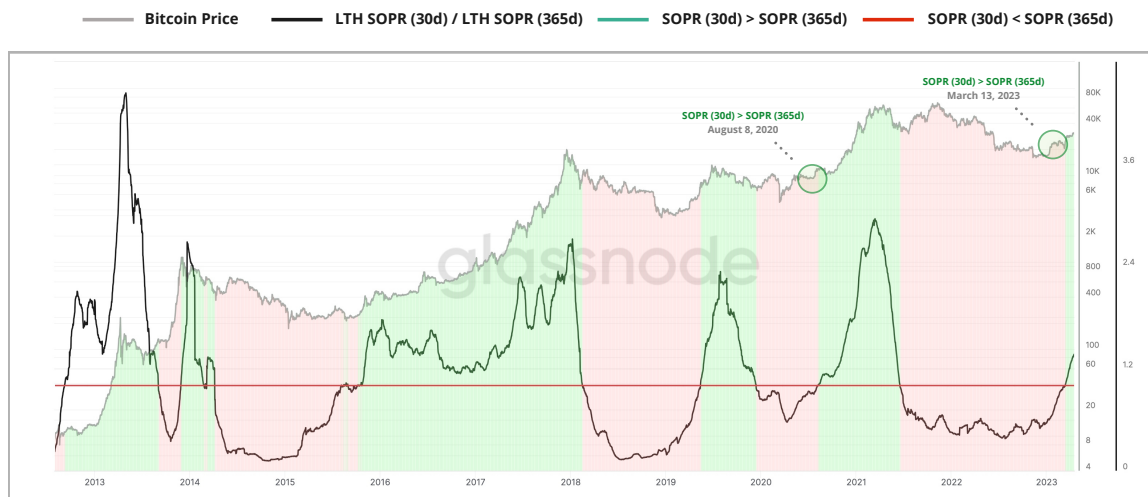
## 2023 Asset Returns



Asset	MtD*	QtD	YtD	Volatility (annualized)*	Sharpe (annualized)*	Correlation (to Bitcoin)**
<b>Bitcoin</b>	6.7%	82.7%	82.7%	0.54	3.06	1.0
<b>Ethereum</b>	15.5%	75.3%	75.3%	0.56	2.48	0.95
<b>Altcoin Index</b>	9.5%	53.2%	53.2%	0.56	1.72	0.59
<b>TopCap</b>	6.0%	71.1%	71.1%	0.52	1.91	0.95
<b>CryptoCap</b>	4.9%	55.8%	55.8%	0.54	2.10	0.98
<b>GLD</b>	0.9%	8.9%	8.9%	0.16	1.90	0.79
<b>UCO</b>	1.6%	4.1%	4.1%	0.59	0.95	-0.23
<b>FBND</b>	-0.7%	2.6%	2.6%	0.07	-0.16	0.44
<b>GSG</b>	1.1%	1.5%	1.5%	0.20	0.63	-0.27
<b>VNQ</b>	0.4%	1.1%	1.1%	0.22	-0.16	-0.62
<b>SPY</b>	0.8%	9.2%	9.2%	0.16	0.95	0.28
<b>QQQ</b>	-0.6%	13.2%	13.2%	0.21	1.11	0.43

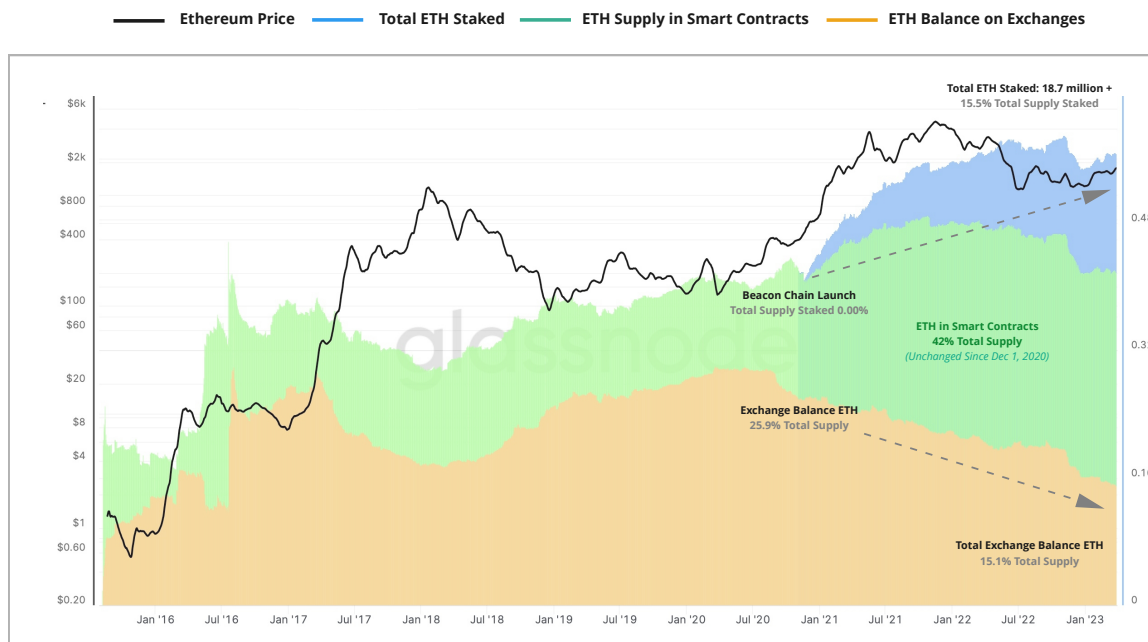
Sources: AlphaVantage, TradingView  
 Assets: SPY = S&P500, QQQ = NASDAQ, GLD = Gold, UCO = Crude Oil, FBND = Total Bond Market, VNQ = Vanguard Real Estate Index Fund ETF, GSG = S&P Commodity Indexed-Trust, S2FALTIINDEX = Altcoin Index, TopCap = Marketcap of top 20 coins excluding stablecoins and wrapped tokens, CryptoCap = total crypto sector  
 \*as of April 18, 2023 - last 90 days

## LTH SOPR (30d / 365d) Ratio



- When we divide LTH SOPR (30d avg) by the yearly LTH SOPR (365d), we get the monthly / yearly LTH SOPR ratio (**black**). Historically, this ratio has helped identify positive and negative market trends for Bitcoin markets.
- When LTH SOPR (30d) SOPR > LTH SOPR (365d), it signals a positive condition (**green shading**), while LTH SOPR (30d) < LTH SOPR (365d) can signal broader downside conditions (**red shading**). On March 13th, the monthly/yearly LTH SOPR ratio turned green for the first time since August 2020.

## ETH Supply Distribution (Post-Staking Unlock)



- Since the Beacon Chain launched in December 2020, the Total ETH Staked (**blue**) has surpassed more than 18.7 million ETH (15.5% of the total ETH supply), with more than 586,000 validators and over 104,000 unique depositors.
- Nearly 26% of ETH was held on exchanges (**orange**) before PoS launched. Following the successful Shapella hard fork on April 12th, the current supply of ETH on exchanges has declined to only 15.1% (currently less than total supply staked).

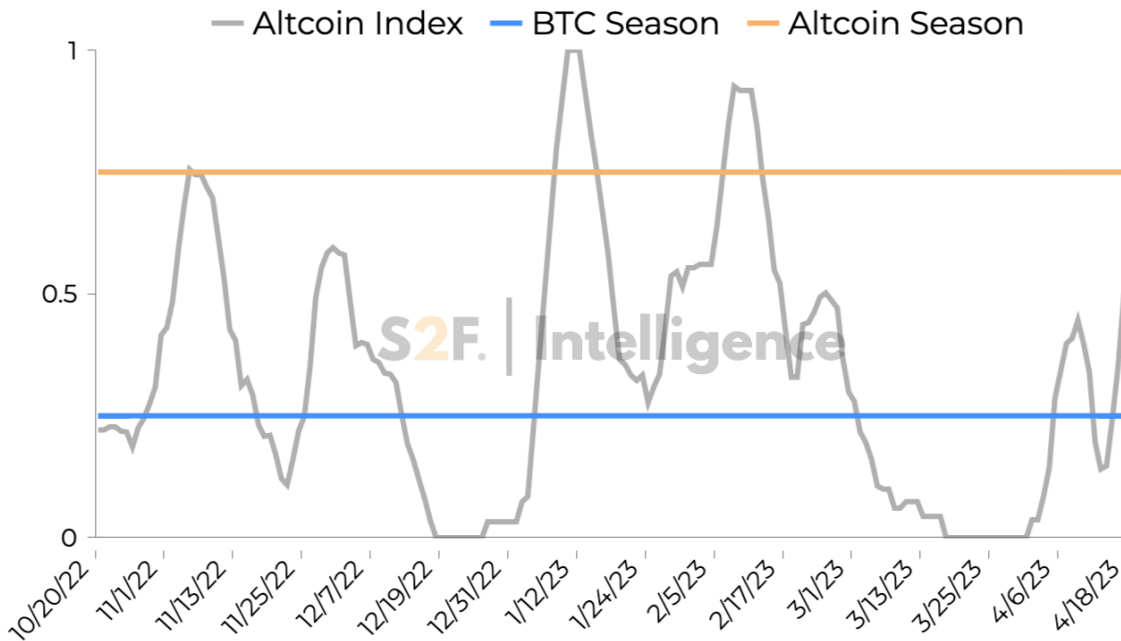
- Bitcoin remains well above its 50d MA and 200d MA.
- Since the 50d MA crossed the 200d MA, BTC price has appreciated approximately 34%.
- BTC holders saw price break above significant resistance levels at 28k - 30k but has since pulled back from the 31k price level. Currently, price has the opportunity to establish support at previous resistance levels, if it fails BTC could revisit the 50d MA level of 26.7k.



- Ethereum continues to hold above its 50d MA and the 200d MA.
- Since the 50d MA crossed the 200d MA, ETH price has appreciated 20.1% but has underperformed BTC by 6.5% YTD.
- Following Ethereum's Shapella upgrade on April 12th, the price surpassed levels not seen since last August 2022 - we would like to see price action establish trend support at its current levels.

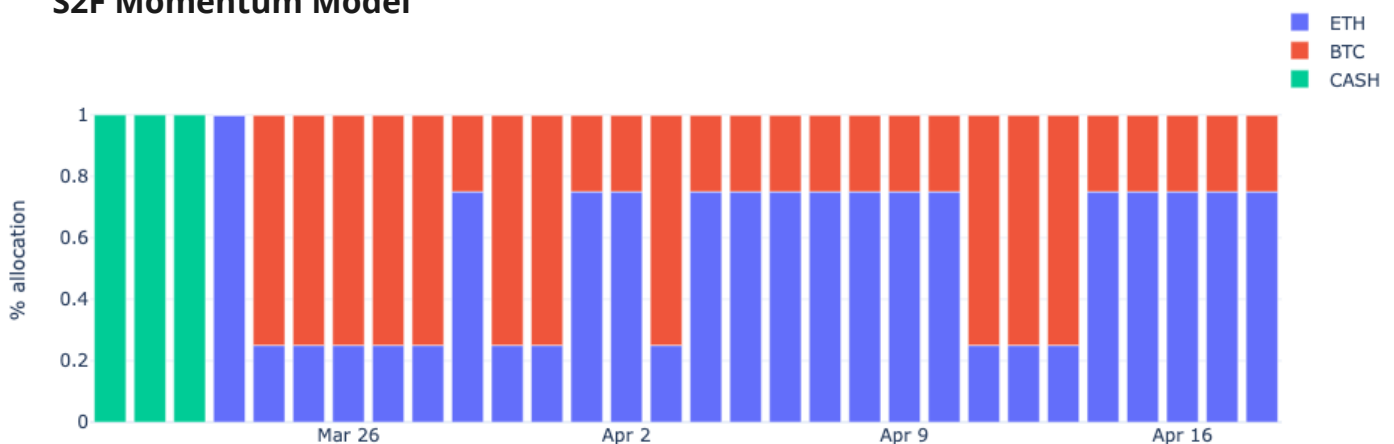


## S2F Alt-Season Indicator



The S2F Alt-Season Indicator is a proprietary model that measures the capital flows between Bitcoin and a basket of major Altcoins. This indicator is especially helpful in **identifying where strength resides** in the cycle and can **potentially indicate what may happen next**. When the Index line (gray) is below the **orange line**, it generally signals strong momentum favoring Bitcoin vs. Altcoins.

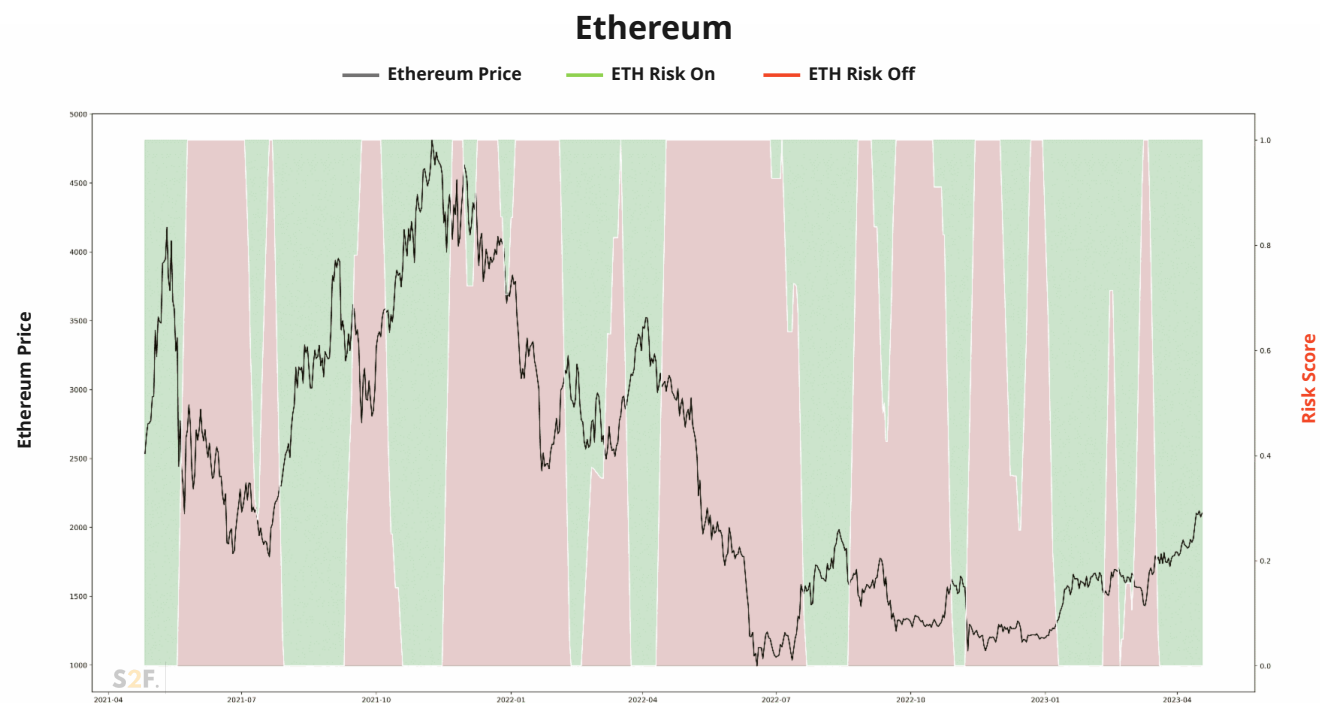
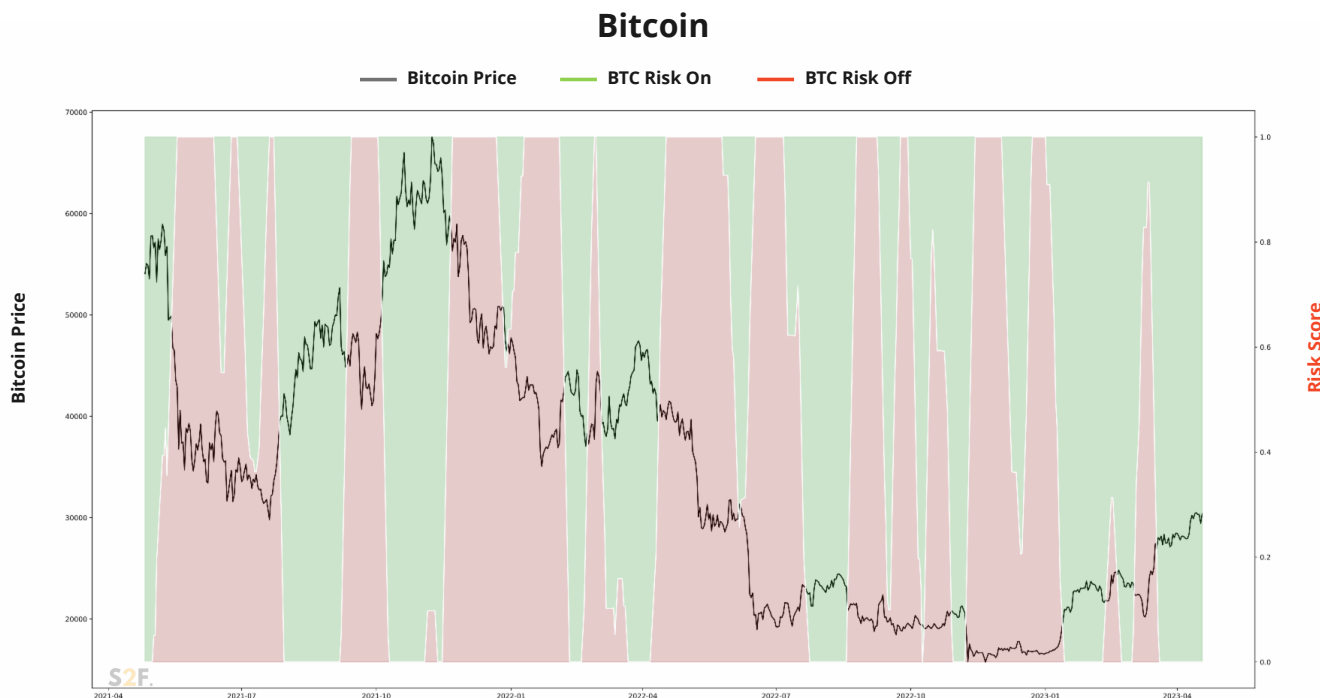
## S2F Momentum Model



The S2F Momentum Model is a proprietary model for portfolio optimization. The **entry and exit signals rely on a risk indicator**, while the **ETH and BTC weights are based on price momentum**. The chart above shows the suggested daily allocation over the last 30 days.

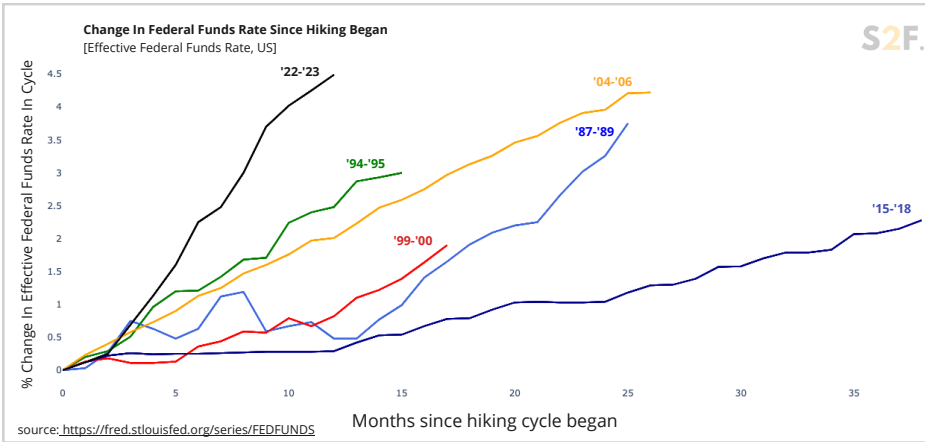
## Delta Risk Score

The Delta Risk Score is a proprietary model that **measures the probability of an imminent retracement in price**. The indicator's value oscillates between 0 and 1, with the former signaling low-risk (**green**) while the latter determines high-risk conditions (**red**). The chart below shows both indicators and the underlying asset's price (**black line**) since Q3 2021.



## Bank Run Fears

The high-profile collapse of Silicon Valley Bank and Signature were the 2nd and 3rd largest bank failures since the Great Financial Crisis in 2008. These institutional failures resulted in aggressive capital outflows from regional and national banks and were met with regulatory interventions from the Swiss National Bank and the Federal Reserve.



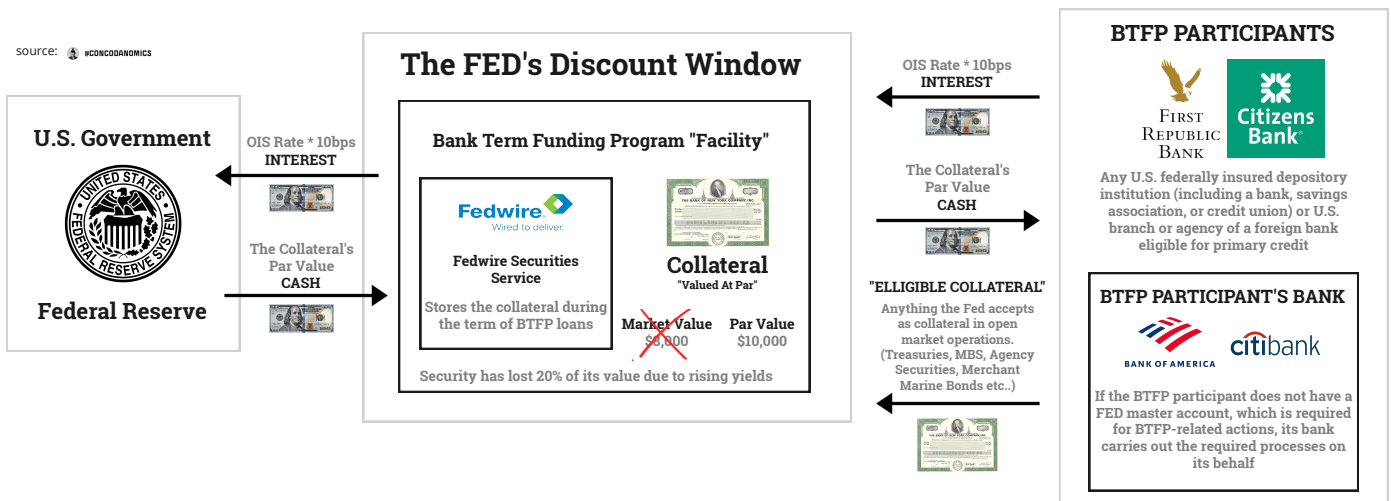
- While trying to meet withdrawal requests, Silicon Valley Bank sold \$40bn in securities, resulting in a realized loss of \$1.8bn, resulting in an unanticipated run on the bank from depositors.
- Trading of SVB shares was halted the next day, and the FDIC took control of the bank before the market close. Exposure to duration risk and bond assets poses a systemic risk to the banking sector and has prompted intervention from regulators.

- The historic pace of interest rate hikes increased bank depositor outflows as traditional yields underperform 'risk-free' treasuries and money markets. This impacted bank balance sheets, many of which currently hold long-duration fixed-income securities that risk conversion into realized losses should the bank face elevated capital outflows.

## Bank Term Funding Program (BTFP)

To backstop the realized losses of distressed securities on bank balance sheets, the Federal Reserve enacted the BTFP. Any US Federally insured depository institution would be eligible for primary credit at this temporary lending facility.

- Since its inception, more than \$54bn (as of 3/27/23) has been issued to institutional participants and the program, which features a convenient accounting mechanism for borrowers.
- Institutions deposit 'eligible collateral' and receive cash at the asset's **par value**. The collateral is then digitized and the Fedwire Securities Service takes custody of the asset for the duration of the loan. BTFP participants receive cash from the Federal Reserve but must pay interest on the loan (max duration is one year) at the OIS (overnight index swap) rate plus an addition to a ten bps spread.

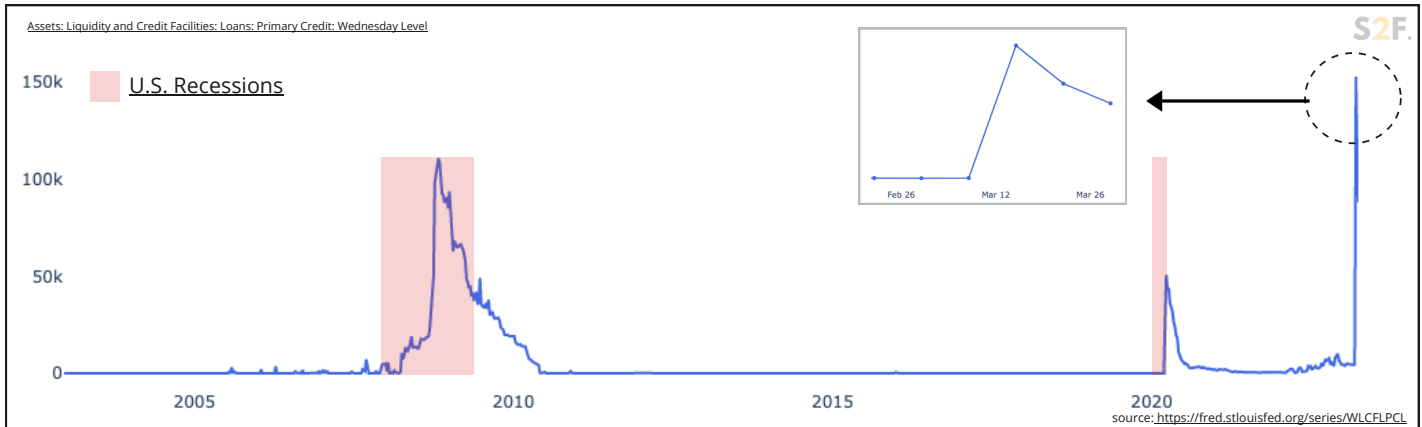


The controversy surrounding the BTFP raises questions about the program's sustainability and impact on the broader money supply. While the issuance of newly printed cash by the US Government aligns with the traditional mechanics of Q/E, if banks prevent this liquidity from reaching households or entering the economy, the BTFP might succeed in mitigating the impact of the interest rate hikes on banks' balance sheet, while avoiding upward pressure on already overheated inflation numbers.



## Fed Balance Sheet Expansion & Contraction

Recent intervention from the Federal Reserve resulted in its balance sheet growing by almost ~\$400bn over the last two weeks. Essentially unwinding ~60% of the quantitative tightening measures of 2022 as the sector continues to struggle with capital outflows.



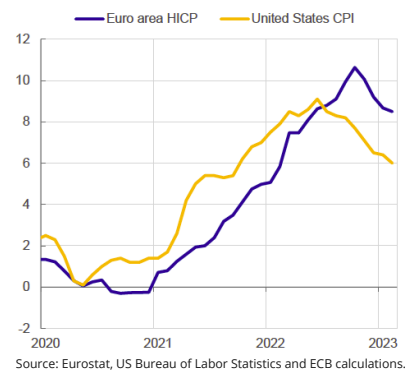
- Despite the recently aggressive expansion of the Federal Reserve's balance sheet, their most recent publication showed a reduction of (\$17.6bn) - resuming the contraction and continuation of its downtrend.
- As this decline continues, it signals to markets that the threat of an accelerated banking crisis may have stabilized, and the need for prolonged financial support past a year may not be necessary.
- While the measures taken by the Federal Reserve and Swiss central bank of using taxpayers to backstop depositors may have been unsavory, it could have been necessary to avoid systemic financial failures in the banking sector.

## Lending Conditions and Inflation

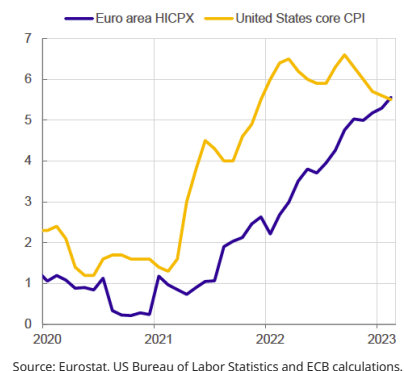
Amidst a backdrop of financial uncertainty, central banks continue to enact tighter monetary policies to combat inflation. Recent data (PCE, CPI, and PPI) suggests the US is trending in the right direction, but risks to an already fragile banking sector could increase at this pace in hikes.

- For the first time since 1960, the Y/Y M2 money supply contracted by 2.4% as central banks forecast further quantitative tightening and rate hikes to encourage disinflation.
- The bond markets predict the Fed will reduce interest rates by the end of 2023, but this may be due to a weaker economy resulting from stricter lending conditions.
- Worries over smaller banks' health caused regional assets to shift to larger banks with more regulatory insurance, but bigger banks' lending policies may not cater to specific industries.
- Imbalanced investment exposure in troubled fixed-income assets may lead to more cautionary lending policies - delayed loan approvals and insufficient access to credit and funding could stoke fears of a recession.
- Lowering interest rates could boost the asset value of held-to-maturity bonds as they approach par value. However, it could also indicate an economic downturn and more adversity for businesses and labor markets.

### Headline Inflation



### Core Inflation



## Bitcoin

- Opening oral arguments were heard on March 7th by a panel of judges as Grayscale Investments' lawsuit against the SEC over their rejection to approve a Bitcoin spot exchange-traded fund.
- Fidelity Investments expands Bitcoin trading to retail trading accounts - the Fidelity Crypto platform was previously only available to institutions and waitlisted customers.<sup>1</sup>
- According to court documents, the U.S. Government sold 9,861 for \$215 million on March 14th. The sale was part of 51,351 BTC seized during a criminal investigation last November - authorities shared they plan to sell the remaining coins in four batches throughout 2023.
- MicroStrategy purchases an additional 6,455 BTC bringing the company's holdings to 138,955 BTC at an average price of \$29,817.

## Ethereum

- The highly anticipated Ethereum Shapella network upgrade was successful on April 12th and resulted in validator's ability to withdraw staked ETH and claim their network rewards.
- Lido, the leading ETH liquid staking protocol, announced delays for its stETH token withdrawals due to ongoing audits of its V2 platform. Lido has spent \$1.2 million in smart contract audits and is targeting mainnet withdrawals by mid-May.<sup>2</sup>
- Leading ETH Layer 2, Arbitrum set a new record for the total daily transactions of 1,312,052. Network thresholds were pushed to their limits during the claiming process of the native \$ARB governance token airdrop - server demand caused both the block explorer and website to crash.
- ZK Sync launches its L2 rollup 'Era' on public mainnet - the first EVM-compatible ZK rollup on Ethereum.

## Layer 1's

- Cosmos community votes to pass its v9 Lamda 2.0 proposal after the network upgrade was rejected last November - Cosmos 2.0 went live March 15th and now features inter-chain network security.
- Leading AMM Uniswap v3 goes live on the BNB blockchain after 66% of the Uniswap community DAO voted in favor of last February's proposal.
- The Filecoin Virtual Machine (FVM) is now live on mainnet - the blockchain will now support smart contracts and user programmability with the capacity to unlock an open data economy.<sup>4</sup>
- Fantom blockchain launches its ecosystem vault - the 250,000 \$FTM within the fund is designed to be a decentralized channel for funding ideas, projects, and developers.

## Other Headlines

- Microsoft announced it is developing a built-in crypto wallet for its browser, Microsoft Edge, allowing users to transfer and receive digital assets and NFTs.
- CFTC files suit against Binance and claim the defendants committed "wilful evasion of U.S. law" by allowing U.S. customers to trade crypto derivatives products on its platform illegally.<sup>4</sup>
- E.U. Parliament voted to pass the Data Act, which could challenge the immutability of smart contracts by requiring the technology to have new access controls, including the function to stop or reset the contract.
- The SEC issued a Wells notice to Coinbase Global, Inc. - the company noted there could be potential enforcement actions tied to aspects of its spot markets as well as its Earn, Prime, and Wallet products.<sup>5</sup>

<sup>1</sup> Forbes Digital Assets, Amid Crypto Bank Crisis, Fidelity Expands Bitcoin, Ether Trading To Most Retail Accounts <https://www.forbes.com/sites/digital-assets/2023/03/16/amid-crypto-bank-crisis-fidelity-opens-bitcoin-ether-trading-for-retail-accounts/?sh=3f4446e731670>

<sup>2</sup> CryptoSlate, Lido expects staked Ethereum withdrawals in May <https://cryptoslate.com/lido-expects-staked-ethereum-withdrawals-in-may/>

<sup>3</sup> The Defiant, Filecoin Launches Ethereum-compatible Smart Contracts <https://thedefiant.io/filecoin-smart-contracts>

<sup>4</sup> The Guardian, US regulator sues crypto exchange Binance and boss Changpeng Zhao <https://www.theguardian.com/technology/2023/mar/27/us-regulator-sues-crypto-exchange-binance-and-boss-changpeng-zhao>

<sup>5</sup> Reuters, U.S. SEC threatens to sue Coinbase over some crypto products <https://www.reuters.com/legal/coinbase-issued-wells-notice-by-sec-2023-03-22/>

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