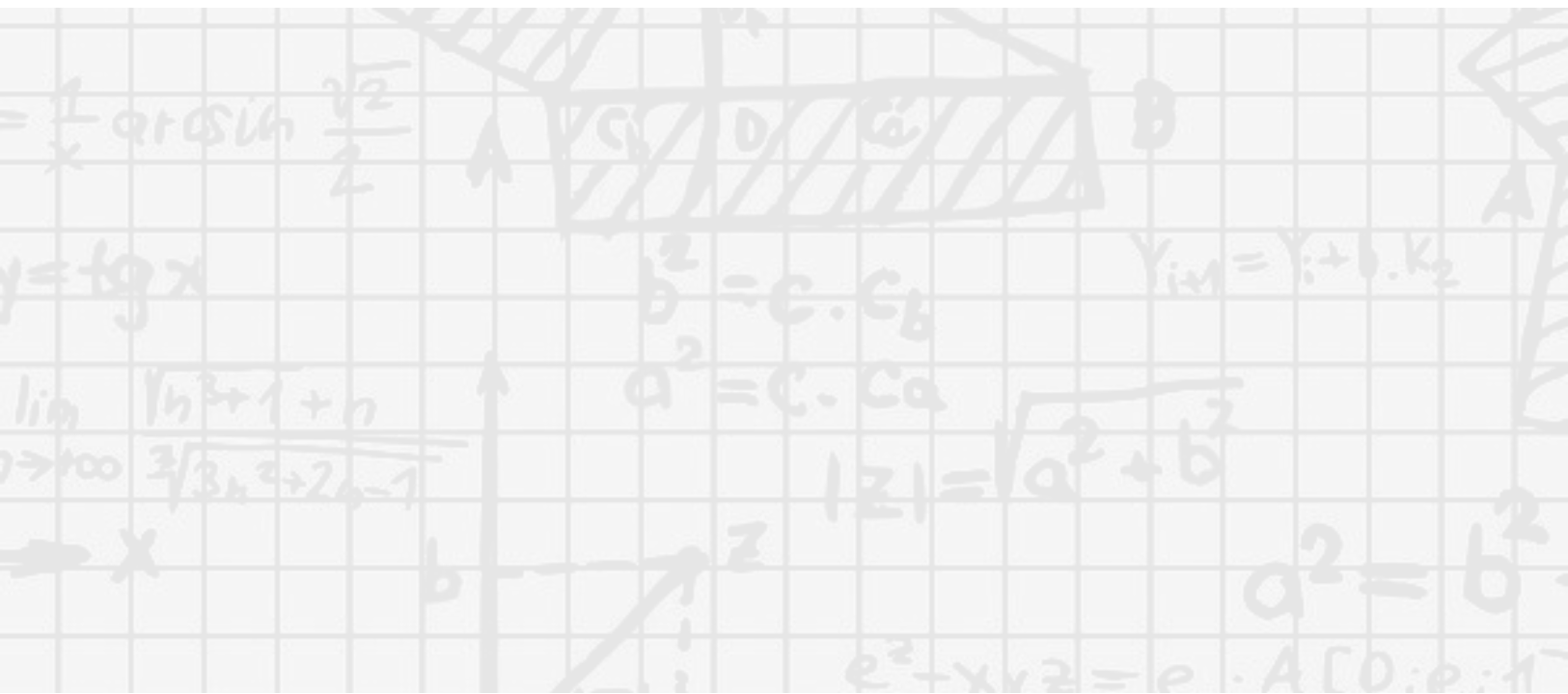


Digital Asset Markets Report

August 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 +19.2% and +4.8% YTD, respectively, while the NASDAQ is up 23.6%.
- Despite credit conditions, US retail sales 0.7% (M/M) vs. 0.4% forecasts continue to signal unexpected economic strength.
- Headline CPI data (Y/Y) rose from 3.0% to 3.2% in July - below economists' estimates of 3.3%, while (M/M) matched forecasts of 0.2%.
- US10Y and US2M yield spreads remain negative but have compressed from their May inversion extremes of -1.74 to -0.67.
- July Manufacturing PMI 49.0 declined to 47.0 in August while signaling the sector remains in a contraction period < 50.0.
- July PCE and Core PCE price index data (Y/Y) were in line with 3.3% and 4.2% estimates. CME Group 30d futures forecast 92% odds of a pause at the September FOMC and 53.0% odds of a potential increase in interest rates at the November meeting.

Macro Performance

Page 1

- Digital assets' total market cap trended lower in August from July's peak of \$1.23 tn to \$1.02 tn.
- GLD (Gold ETF) price action remains within its current sideways range while remaining positive +5.2% YTD.
- Iran, Saudi Arabia, and the UAE join BRICS furthering concerns over global supply constraints - price has risen to \$84.88.
- The GSG commodity index remains in positive territory after remaining flat in August +5.4% YTD.

On-Chain Analysis

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- **SOPR Ratio (Monthly/Annual):** We apply a 30d SMA and a 365d SMA to calculate short-term holders' monthly/annual SOPR, which can signal shifts in Bitcoin price trends. If the ratio can reclaim > 1.0, it may confirm a resumption in upside for price.
- **Ethereum and Stablecoin Net Capital Flows:** Broader ETH price trends increase and decrease with positive stablecoin inflows (DeFi 2020 summer - March 2022) and decline with negative outflows - currently stablecoin outflows > inflows.

Technical Levels

Page 3

- **Bitcoin:** August was characterized by low volatility and short, strong sell-offs. Price is currently at our caution level of \$25.7k.
- **Ethereum:** Ethereum remains tightly correlated with BTC while the 50d MA has crossed the 200d MA to the downside.

Momentum & Sentiment

Pages 4-5

- **Alt-season Indicator:** The index signals strength in BTC under the current conditions.
- **S2F Momentum Model:** The momentum model pivoted back into cash on the monthly close.
- **Delta Risk:** The indicator signals increasing risk-off conditions for BTC and ETH.

Market Radar

Pages 6-7

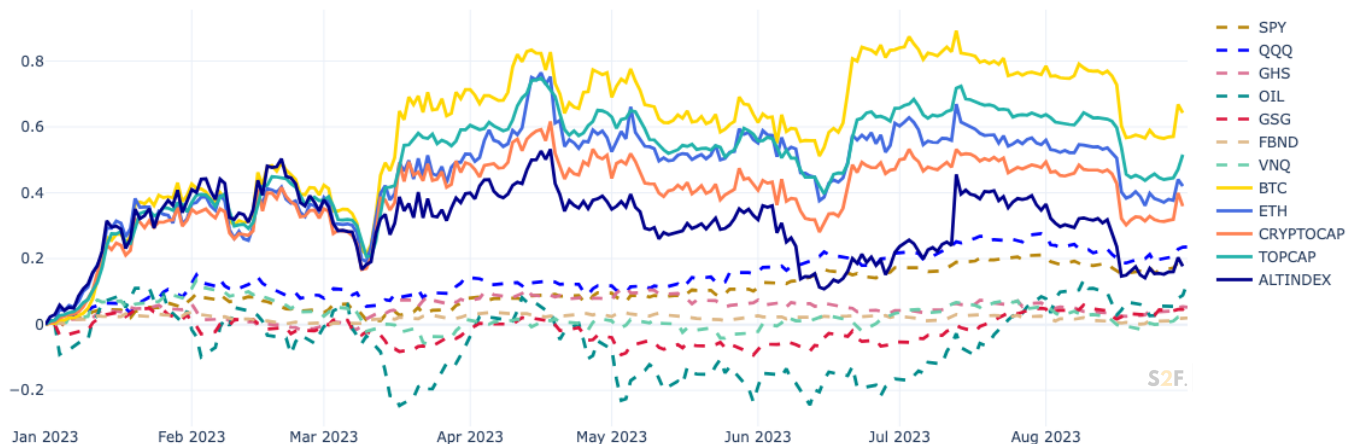
- **Inflation Cycle Echo:** July's uptick in CPI data raises investor concerns about inflation expectations potentially unanchoring. During the 1970s market cycle, oil prices served as an inflationary headwind, which may offer a warning signal for this cycle.
- **Liquidity Flows:** Uncertainty surrounding the Fed's outlook on monetary policy led to \$91.1 billion in investor capital flowing into money-market funds since mid-July. MMFs offer comparable yields to government bonds without policy exposure.
- **Unrealized Financial Sector Losses:** As rates increase, unrealized losses on balance sheets trend higher. Regional banking sector credit downgrades lead to fears that monetary policy could impact larger institutions with long-duration bond exposure.
- **Housing Debt + Labor Markets:** The Fed remains committed to softening labor market conditions and preventing excess wage inflation, but their efforts could result in hardship for households with nominal household debt reaching 4.71 trillion.

Notable News

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

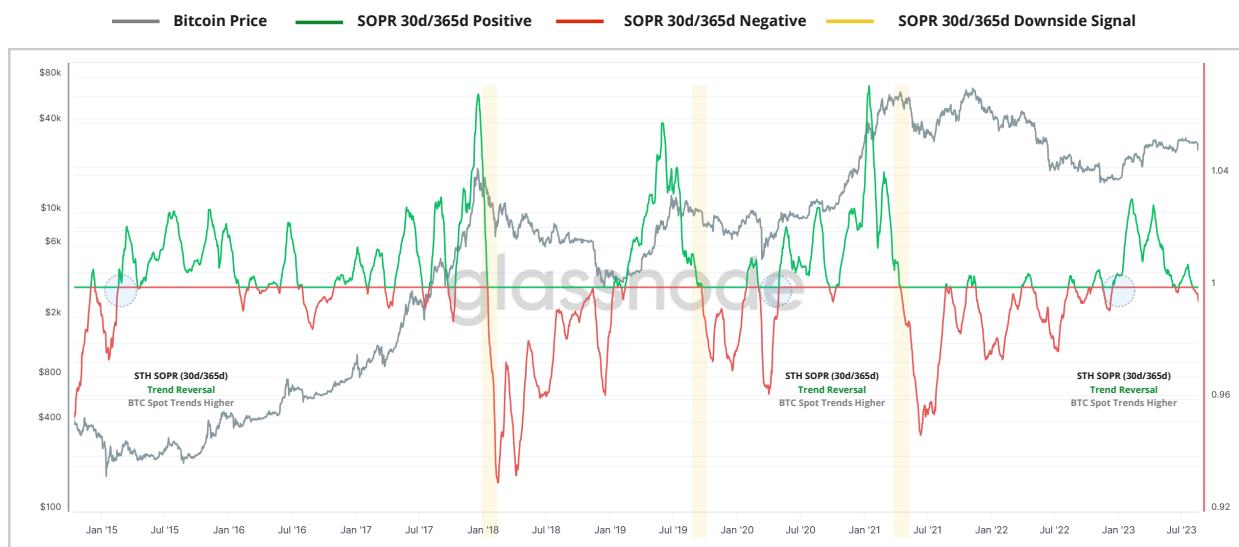
2023 Asset Returns



Asset	MtD*	QtD	YtD	Volatility (annualized)*	Sharpe (annualized)*	Correlation (to Bitcoin)**
Bitcoin	-12.6%	-15.2%	56.0%	0.45	0.99	1.00
Ethereum	-12.1%	-14.5%	37.1%	0.46	0.42	0.86
ALTS	-16.5%	-7.8%	14.1%	0.51	-0.29	0.55
TOPCAP	-7.4%	-8.6%	51.6%	0.30	1.17	0.93
CRYPTOCAP	-9.0%	-9.4%	35.9%	0.44	0.44	0.96
SPY	-1.3%	1.5%	19.2%	0.17	1.62	0.45
QQQ	-2.7%	1.3%	23.6%	0.22	1.57	0.46
GLD	-0.2%	0.9%	5.2%	0.16	0.76	0.02
UCO	4.7%	36.0%	12.9%	0.73	0.30	-0.02
FBND	0.1%	-0.2%	2.0%	0.08	-0.35	0.40
VNQ	-3.2%	-2.4%	1.9%	0.23	-0.32	0.55
GSG	0.7%	11.5%	5.4%	0.24	0.41	0.00

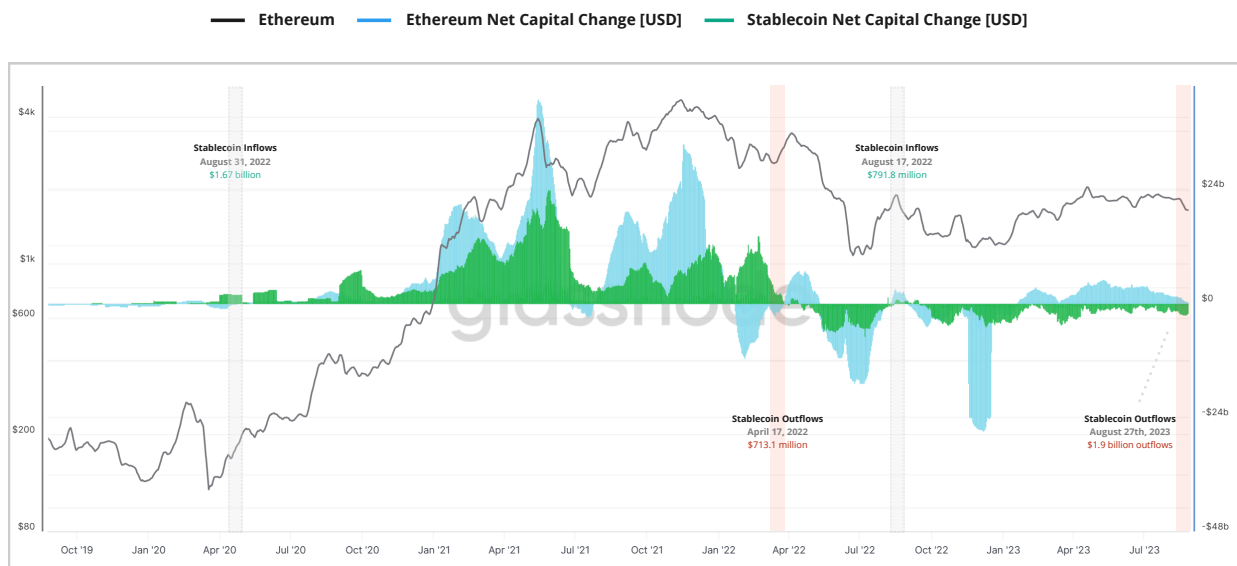
Sources: AlphaVantage, TradingView
 Assets: SPY = S&P500, QQQ = NASDAQ, GLD = Gold, UCO = Crude Oil, FBND = Total Bond Market, VNQ = Vanguard Real Estate Index Fund ETF, GSG = S&P Commodity Indexed-Trust, S2FALTINDEX = Altcoin Index, TopCap = Marketcap of top 20 coins excluding stablecoins and wrapped tokens, CryptoCap = total crypto sector
 *as of August 31, 2023 - last 180 days
 **as of August 31, 2023 - last 90 days

SOPR Monthly/Annual Ratio (Short-Term Holders)



- The SOPR (spent output profit ratio) indicator measures the profitability of coins less than 155 days old when they are spent. Above 1.0 is a short-term holder spending in profit while below 1.0 is a coin that is spent at a loss.
- A 30d SMA and a 365d SMA is applied to the indicator. Upside in BTC price occurs when **30d/365d ratio turns positive** and finds support at its 1.0 line while downside occurs when **30d/365d SOPR ratio turning negative** and 1.0 becomes resistance,

Ethereum and Stablecoin Net Capital Flows

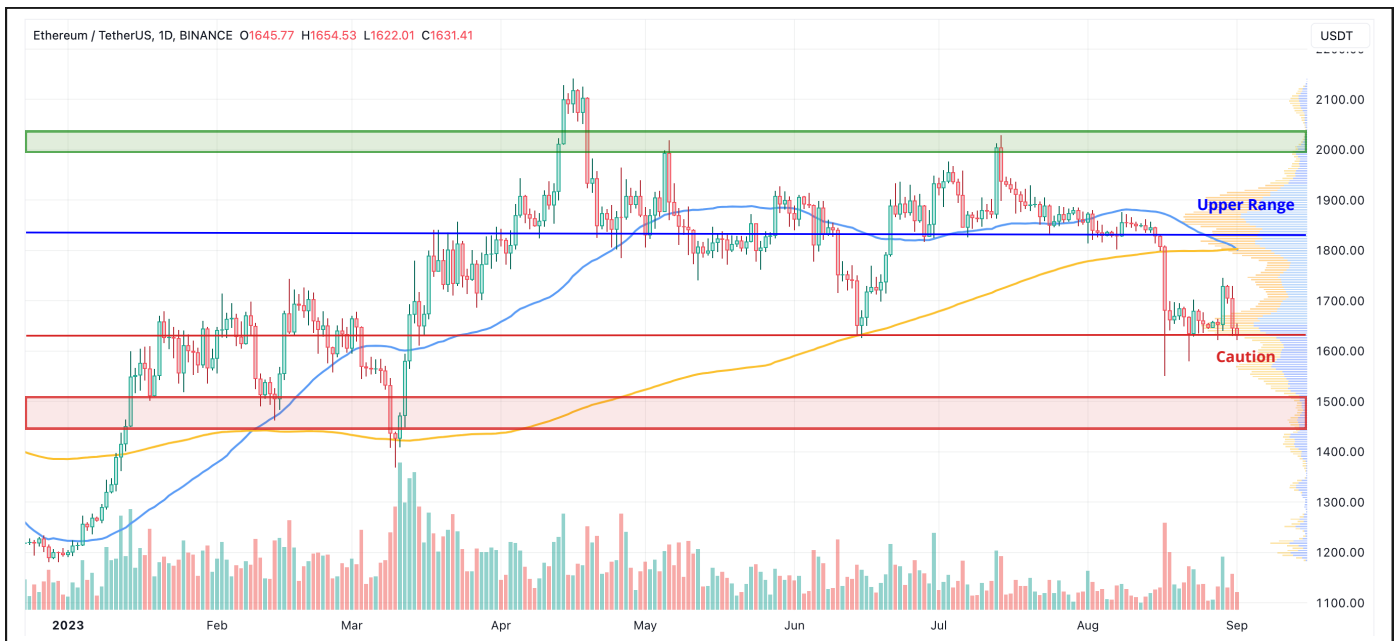


- The chart illustrates the 30-day net position change of major stablecoins (USDT, USDC, and BUSD) and ETH. Positive **net capital change of ETH** relies on realized cap increasing and aligns with positive inflows in **net capital change of stablecoins**.
- **ETH price** increased alongside positive stablecoin inflows from DeFi 2020 summer - March 2022, when the trend pivoted to the downside and entered negative territory. Despite a brief recovery last summer, positive inflows remain a pivotal factor for price action.

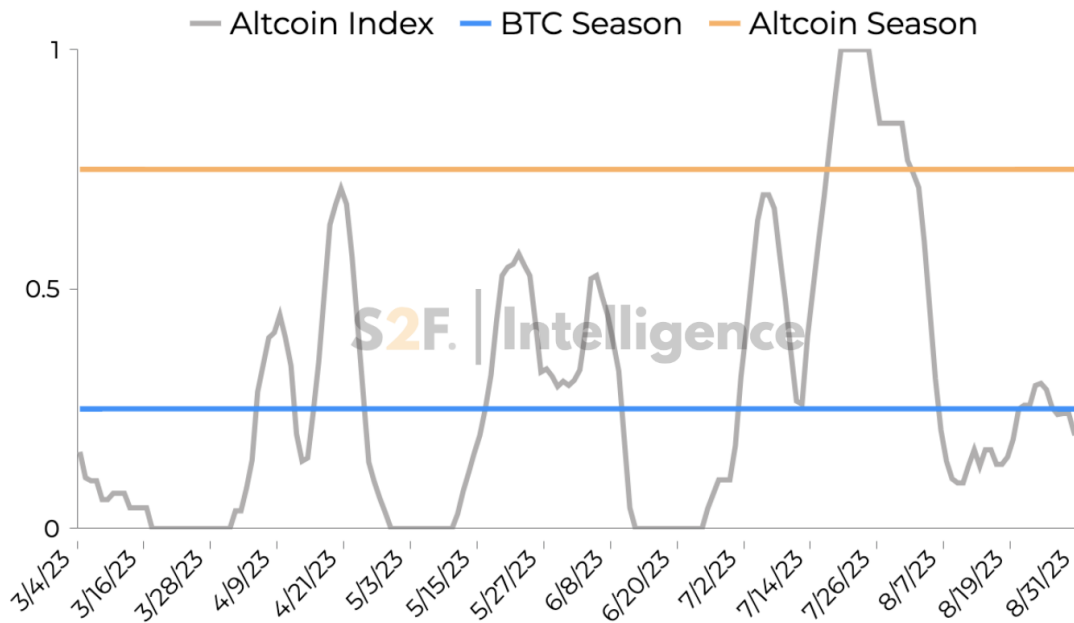
- August was characterized by low volatility with the exception of short, strong sell-offs.
- Price briefly broke above the **200d MA** (\$27.8k) on the news of a federal appellate court overturning the SEC decision barring Grayscale from converting into a spot BitcoinETF.
- BTC is sitting above our caution level (\$25.5k) as the **50d MA** and **200d MA** are starting to converge.



- Ethereum remains highly correlated with Bitcoin and has failed to sustain any bid beyond the overall movement of the crypto markets.
- The upper resistance level of ~\$1.85k remains a long-term target as ETH is currently at levels not seen since March of this year.
- The **50d MA** has crossed the **200d MA** to the downside. If this current level is lost, support could be established at 1.5k next.

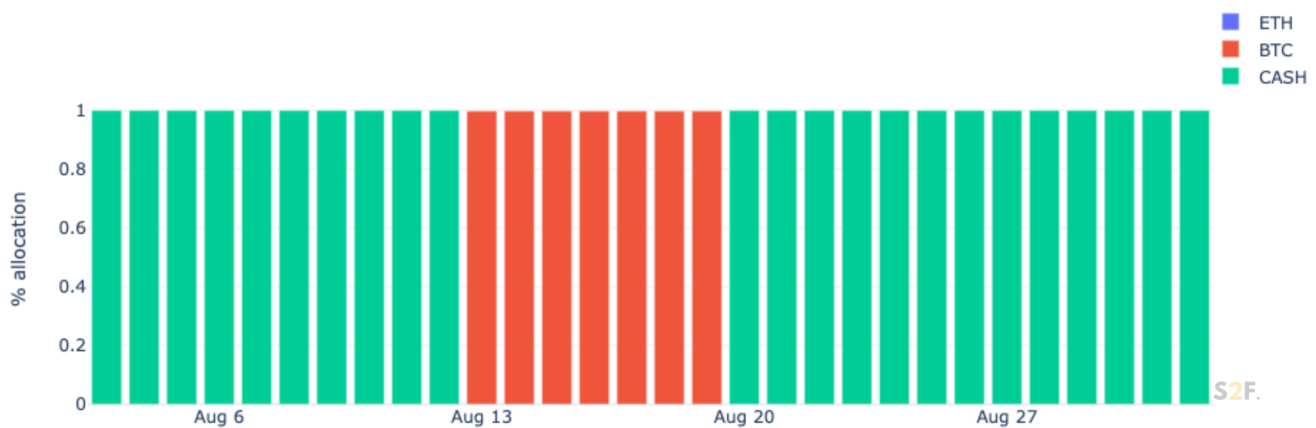


S2F Alt-Season Indicator



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.

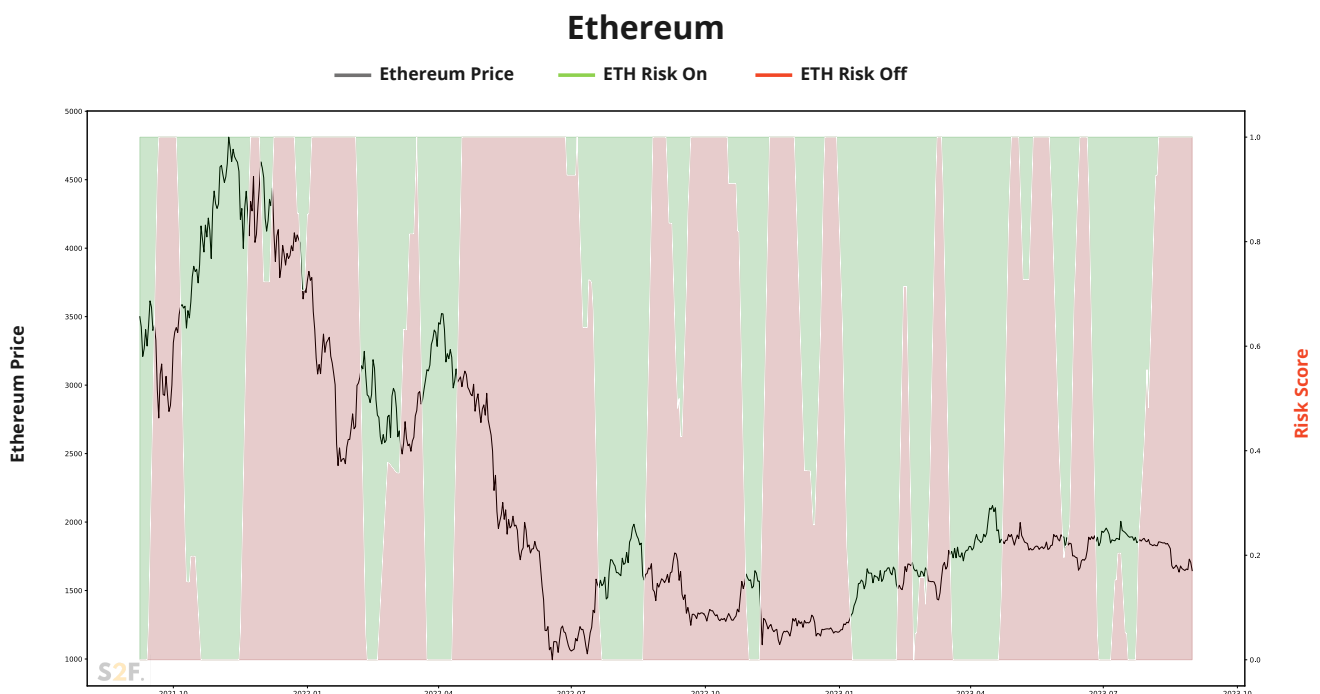
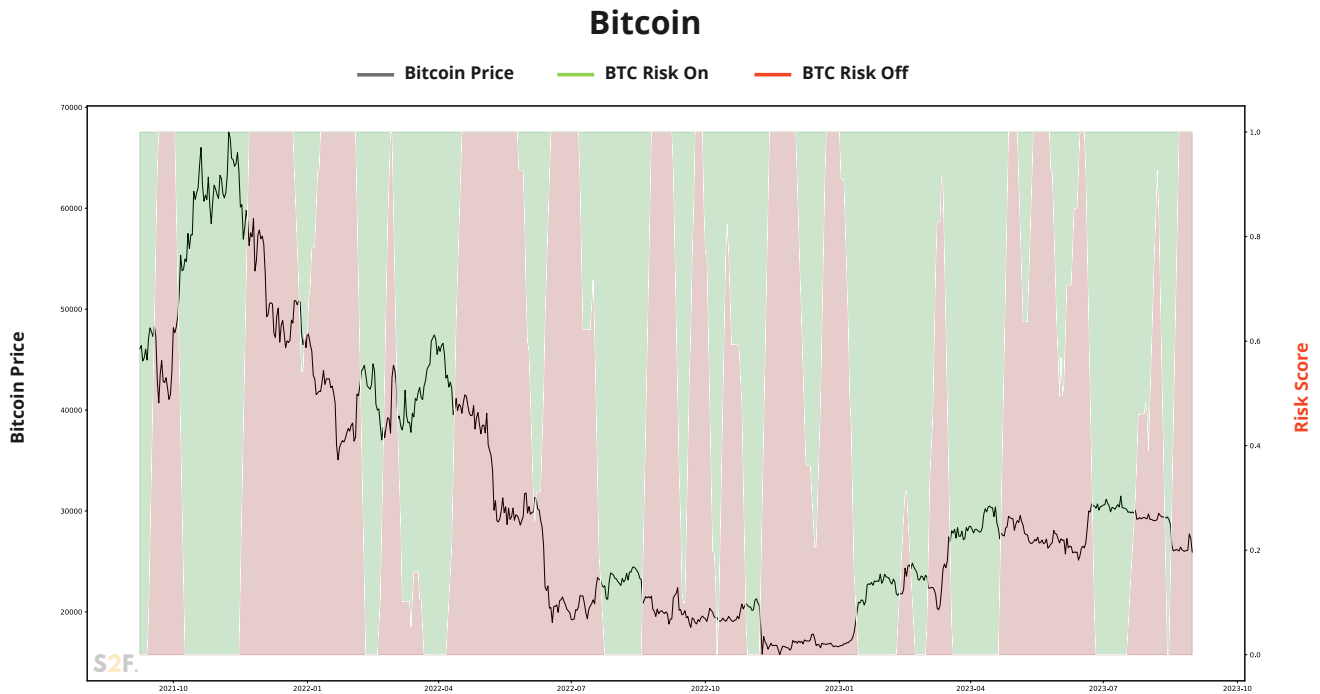
S2F Momentum Model



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.

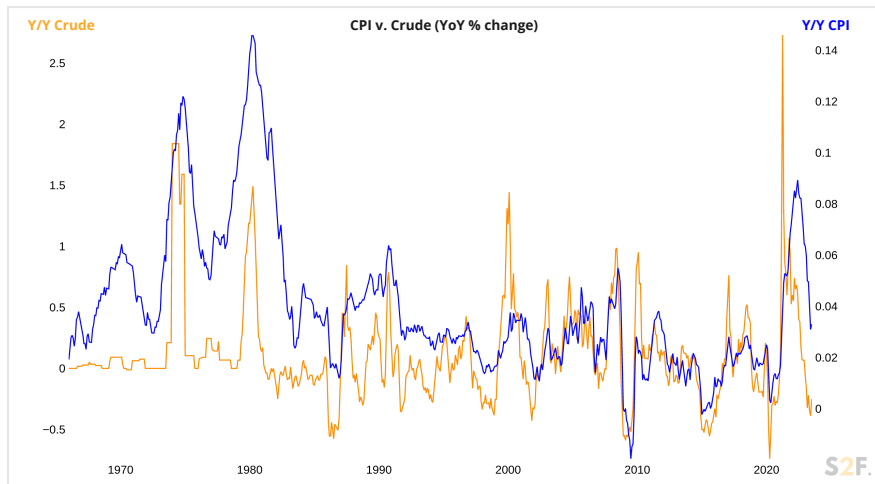
Delta Risk Score

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.



Inflation Cycle Echo

At the Jackson Hole Symposium, Chairman Powell noted how current monetary policy conditions are preventing an unanchoring in inflation expectations. Below we explore similarities between the present-day Y/Y CPI trajectory of inflation data and the prior 1970's market cycle.



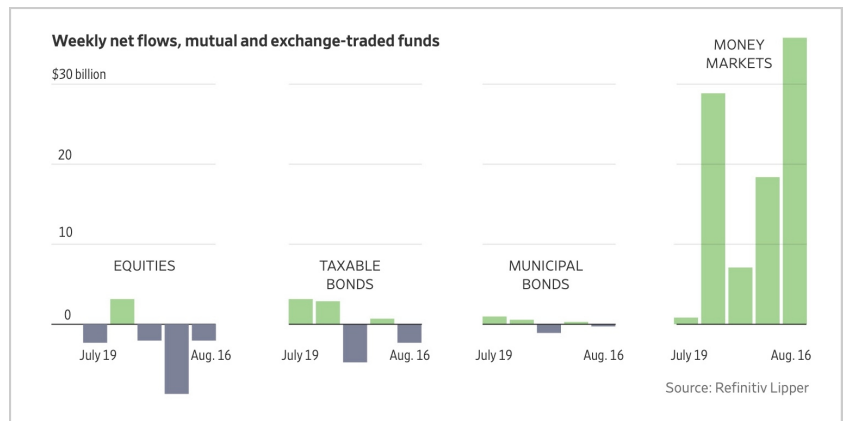
- July's Y/Y CPI uptick was the first increase in more than a year and raised concerns about a possible resurgence in the trend of inflation.
- Y/Y headline CPI data declined from its 2022 peak of 9.1% to 3.0% in June. July CPI data came in slightly above its forecasts at 3.2%.
- The correlation between **Y/Y crude price** and **Y/Y CPI** signals how elevated energy costs can impact inflation, potentially compressing profit margins and retail demand.

An inflationary headwind during the 1970s was the elevated price of oil. Similar price volatility might materialize once again if the oil supply is restricted by the BRICS economics group which now controls 80% of global production after admitting Iran, Saudi Arabia, and the UAE.

Liquidity Flows

After a delayed response from the Federal Reserve to rising inflation in 2022 led to historically aggressive interest rate hikes, investors trust the Fed to guide the economy to a soft landing. Below we examine the impacts of a potentially "higher for longer" outlook.

- The Atlanta Fed revised their GDP forecast for Q3 2023 up from 5.8% to 5.9% (SAAR). Consumer demand and retail trade data supported these resilient projections and may impact the Implied Fed Funds Rate trajectory that is beginning to apply strain to market liquidity.¹
- Recent uncertainties in monetary policy have led to a sector shift in fixed-income markets. While treasury yields rose to 5.5% on short and 4.3% on long duration, the WSJ reported that \$91.1 billion in investor capital has flowed into money-market funds (MMF) since mid-July.²



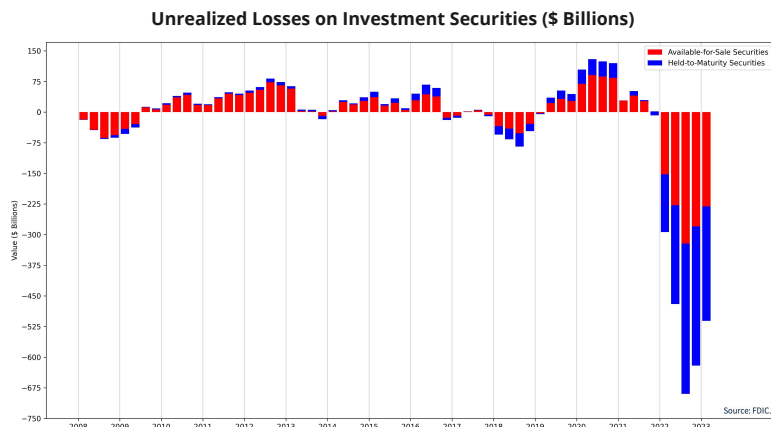
Uncertainty surrounding the Fed's decisions to pause or further increase interest rates at the September FOMC has made the liquidity and limited exposure to market risk of MMF yields preferable to risk-on assets and longer-duration government bonds.

¹ Federal Reserve Bank of Atlanta, Economic Research GDPNow <https://www.atlantafed.org/cqer/research/gdpnow>

² The Wall Street Journal, Where Investors Are Finding Returns in a World of Yield <https://www.wsj.com/finance/investing/where-investors-are-finding-returns-in-a-world-of-yield-eba82767>

Unrealized Financial Sector Losses

In our March report, we examined the Fed's BTFP program, enacted to backstop institutional liquidity by allowing eligible institutions to borrow at par value against underlying eligible debt securities. As rates increase, the trend in unrealized losses on balance sheets accelerates.



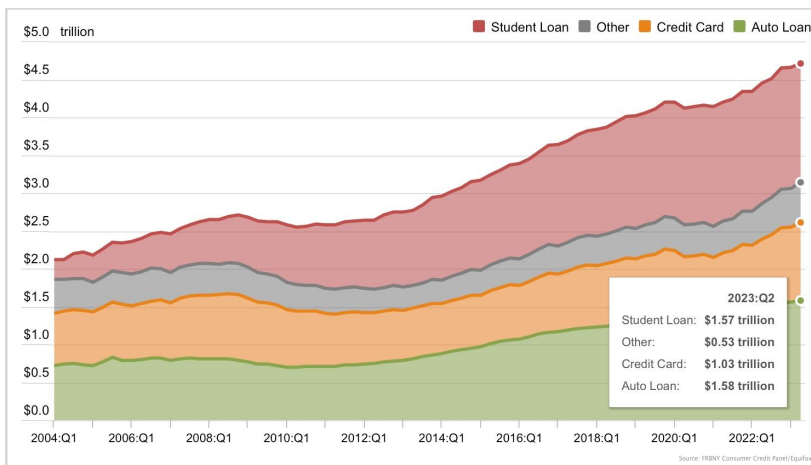
- The BTFP had issued \$119.12 billion in total advances, with \$144.37 billion in securities pledged as collateral. While the \$2 trillion program cap is not currently at risk of being breached, elevated interest rates create hardship for ineligible market participants.¹
- Many regional banks are ineligible for primary credit under the Fed's discount window, which prohibits them from applying for the Bank Term Funding Program. Since March, \$KRE, the S&P 500 Regional Banking ETF, has declined (-27.0%).

- In August, Moody's downgraded the credit ratings of several small and mid-sized banks while revising their outlook to negative across the regional sector.²
- A potential concern is fixed income exposure spilling over into larger financial institutions' balance sheets. In Q2, the FDIC reported that Bank of America had unrealized losses of \$105.8 billion due to low yields on long-dated securities.³

Household Debt and Labor Markets

Powell noted that market credit conditions are assisting in restoring balance to labor markets. When we examine U.S. household debt and spending data, it's clear why some Fed officials have expressed caution about current policy inflicting unnecessary economic pain.

- Further extremes in monetary policy under the guise of softening labor markets may cause hardship, given that nominal household debt has risen to 4.71 trillion.
- Household credit card debt surpassed \$1 trillion for first time in history as July personal spending data 0.8% was above estimates 0.7%. Current trends in spending are rising as personal income data declines.
- Job openings recently declined from 9.2 million in June to 8.8 million in July coupled with (Y/Y) August average hourly earnings falling from 4.4% in 4.3%.



While the near-term trajectory of the hiking cycle remains unclear, the currently elevated interest rate environment is taking its toll. Pressures are mounting as liquidity constraints, elevated unrealized losses on institutional balance sheets, and historic levels of household debt grow. The overly aggressive policy approach to stabilizing inflation while August unemployment rises from 3.5% to 3.8% could destabilize markets.

1 Federal Reserve, Periodic Report: Update on Bank Term Funding Program <https://www.federalreserve.gov/publications/files/13-3-report-btftp-20230811.pdf>
 2 CNBC, Moody's cuts ratings of 10 U.S. banks <https://www.cnbc.com/2023/08/08/moodys-cuts-ratings-of-10-us-banks-and-puts-some-big-names-on-downgrade-watch.html>
 3 Bank Reg Data - FDIC, Appreciation (Depreciation): Held to Maturity <https://bankregdata.com/allSCmet.asp?met=APPh>

Bitcoin

- SEC delayed its decision on BlackRock's Bitcoin ETF - they will have until October 17th before they can approve, deny, or again delay their decision.
- Wall Street Journal reports private company SpaceX wrote down the value of bitcoin it owned by a total of \$373 million last year and in 2021 - it did not specify how much or when the sales occurred.
- The Bitcoin network reached a new ATH of 55.62 TH/s as mining difficulty rose 6.17% in August.
- Judge rejects SEC's claims that Grayscale's spot ETF proposal could be predominantly influenced by fraud or manipulative practices and found the agency violated the Administrative Procedures Act (APA).

Ethereum

- PayPal, the online payments processor with 426 million users, announced the launch of its \$USD stablecoin pyUSD. Paxos Trust Company will issue PayPal USD on Ethereum using the ERC 20 token standard.²
- Restaking protocol EigenLayer reached its liquid staking derivative cap within hours of raising the deposit threshold to 100K ETH - since going live in June, TVL has surged to \$249.2 million.
- Following the L2 rollup mainnet launch of Coinbase's BASE chain, transaction volumes briefly surpassed market leaders Arbitrum and Optimism while generating an annualized \$56.2 million in protocol revenue.
- Bloomberg reports that the SEC will not block the first exchange-traded fund products based on Ether futures. Bitwise, Roundhill, and ProShares plan to launch ETF products pending regulatory approval.³

Layer 1's

- Circle, the regulated financial issuer of the \$USDC stablecoin, announced plans for the stablecoin to natively launch on the Polkadot \$DOT, Cosmos \$ATOM, Near \$NEAR protocol, and Polygon \$MATIC blockchains.
- Solana Pay, a peer-to-peer payments protocol built on the Solana \$SOL blockchain, will be available to millions of businesses as an approved app integration with Shopify Inc.
- The Fantom Foundation is investigating and considering the integration of optimistic rollups with Ethereum - effectively converting the Fantom \$FTM blockchain into an L2 rollup built on top of Ethereum.
- Aptos Labs announced its Aptos blockchain \$APT is leveraging Microsoft's infrastructure to create new product offerings leveraging AI technologies. Microsoft and Aptos labs are collaborating on exploring blockchain-based financial service products, including payment options for central bank digital currencies.⁴

Other Headlines

- Law Professors from (Yale, U of Chicago, UCLA, Fordham, Boston University, and Widener) filed a legal amicus brief challenging the current Coinbase v. SEC lawsuit after Coinbase filed for legal dismissal.
- Biden administration unveils new crypto tax reporting rules, which include a new reporting tool called Form 1099-DA. The Treasury Department said Form 1099-DA will help crypto users avoid complicated calculations to determine their capital gains.⁵
- Mastercard creates an industry forum to discuss and collaborate for its CBDC Partner Program, which already includes Ripple, Fireblocks, and Consensus.
- Coinbase granted National Futures Association (NFA) approval to offer crypto futures, allowing Coinbase to offer BTC and ETH futures directly to eligible U.S. customers rather than only institutional clients.

¹ The Wall Street Journal, A Rare Look Into the Finances of Elon Musk's Secretive SpaceX <https://www.wsj.com/tech/behind-the-curtain-of-elon-musk-secretive-spacex-revenue-growth-and-rising-costs-2c828e2b>

² PayPal Newsroom, PayPal Launches U.S. Dollar Stablecoin <https://newsroom.paypal-corp.com/2023-08-07-PayPal-Launches-U-S-Dollar-Stablecoin>

³ Bloomberg, SEC Set to Greenlight Ether-Futures ETFs in Win for Crypto Industry <https://www.bloomberg.com/news/articles/2023-08-17/sec-said-to-be-poised-to-allow-us-debut-of-ether-futures-etfs-eth>

⁴ CoinDesk, Microsoft, Aptos Labs Team Up on New Blockchain AI Tools <https://www.coindesk.com/web3/2023/08/09/microsoft-and-aptos-labs-partner-on-new-ai-blockchain-solutions/>

⁵ Reuters, Biden administration unveils new crypto tax reporting rules <https://www.reuters.com/markets/us/biden-administration-unveils-new-crypto-tax-reporting-rules-2023-08-25/>

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