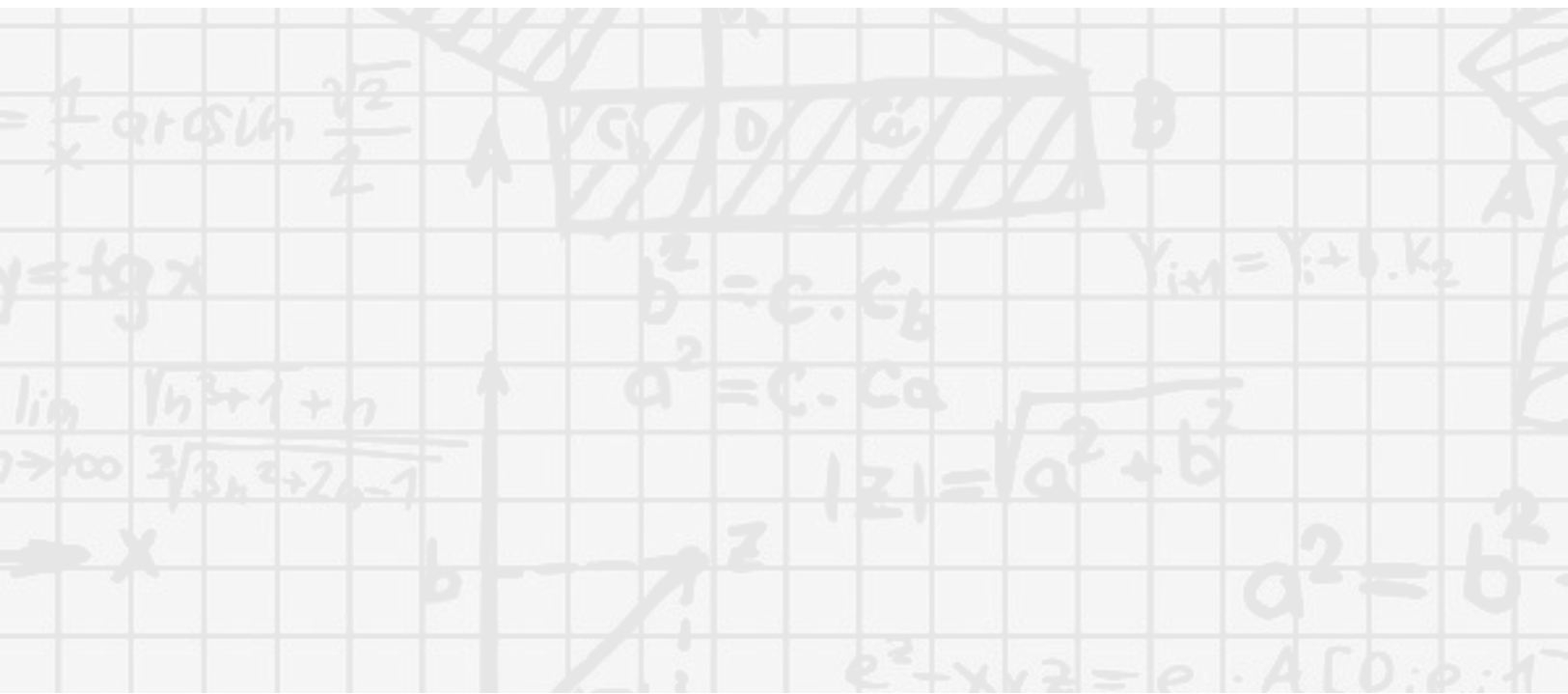


Digital Asset Markets Report

1H June 2022



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 can identify opportunities while properly navigating uncertain market conditions.



Macro Overview

- The S&P 500 and DJIA indexes have fallen -22.1% and -17.0% YTD, while the NASDAQ has declined by 31.61% in 2022. Equities markets continue to face unrelenting headwinds as real GDP estimates trend closer to flat or 0% for the year. Federal Reserve guidance surrounding monetary policy has remained hawkish as the US continues to battle inflation and the historical oil prices.
- May YoY 8.6% CPI data exceeded market expectations of 8.3% as consumer staples, fuel costs, rent, and transportation experience the most dramatic YoY climbs in 40+ years. The Eurozone also saw record inflation figures of 8.1% in May from 7.4% in April, beating expectations of 7.7%. The Fed reiterated its priority in restoring inflation levels to 2% as justification for the recent 75 bps hike.
- Federal Reserve officials estimated a revised median federal funds rate of 3.4% by year-end, which would signal at least three additional 50 bps across the four remaining FOMC meetings (July, Sept, Nov, and Dec). Positive job report numbers, excessive inventory levels, and monthly sell pressure of \$30B in US Treasuries and \$17.5B in MBS continue to make risk-off assets unattractive.
- Since the start of May, digital assets have wiped out more than \$4.3 billion in global open interest. As a result, the total cryptocurrency market cap recently fell below \$1 Trillion for the first time since January of 2021, and Ethereum tests prior bull market ATHs.



Macro Performance

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- U.S. crude oil is \$114 per barrel and, while expected to move higher, it is starting to look "top-ish"
- Gold remains flat (0.43%) YTD
- Grain prices are up 36.2% YTD
- Treasury yields continue rising with the 2Y at (3.35%), the 10Y at (3.43%), and the 30Y at (3.44%). The YTD rise in yields continues on Jerome Powell's reiterated support for continued 50 bps hikes to achieve an end-of-year level more aligned with the projected neutral rate between 3-3.5%.



On-Chain Analysis

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- **BTC Realized Losses/Realized Market Cap:** BTC realized losses relative to the current market cap reveal we are aligned with similar levels of loss to prior historical cycle bottoms - only during Q1 of 2018 did the realized loss/realized market cap ratio exceed current conditions.
- **Bitcoin Reserve Risk:** We currently show price action is at a historically low level of Reserve Risk — this signals a potentially good buying opportunity.



Technical Levels

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- **Bitcoin:** Currently BTC is sitting right at the 200 week moving average, which has historically been a region where lows are put in during bear markets. That said, price tends to overshoot this level before mean reverting back.
- **Ethereum:** ETH has broken multiple support levels in recent weeks and now sits at the very important 1k level. If there are more macro shocks, we could see a liquidation cascade push ETH below this level but it would likely be short lived.



Momentum & Sentiment

Pages 4-5

- **pMV momentum model:** The model remains in cash currently after pivoting out of the market just before the recent BTC selloff.
- **Alt-season indicator:** The indicator is currently in a neutral position between BTC and Altcoins.
- **Delta risk (Bitcoin):** Delta Risk recently pivoted to the upside for Bitcoin signaling risk-off conditions.
- **Delta Risk Score (Ethereum):** Cautionary conditions remain for Ethereum price action.



Money Flows & Themes

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- **Bear Market History:** The historical windows of opportunity to accumulate during bear markets has lasted an average of ~145 days.
- **Optimal Accumulation Model:** The model features a weighted-realized price of three separate cohorts of coin holders and their unrealized losses. (3-6 month holders), (6-12 month holders), and (1-2 year holders). There have only been three prior instances in Bitcoin price history where all three groups have shown aligned unrealized price spikes.
- **Caution & Accumulation Channel:** The accumulation channel indicator identifies clear buying opportunities as well as caution channels for taking profits. We are in a rare period of accumulation.
- **Bitcoin Power Law:** The Bitcoin power law can be derived by taking a linear regression of the fair value of BTC since the network's inception. When percentile bands deviate to extremes in price action, we see the model fire a (red dot) signaling overbought conditions and a (blue dot) during oversold conditions - it's currently blue, which has aligned with cycle bottoms.

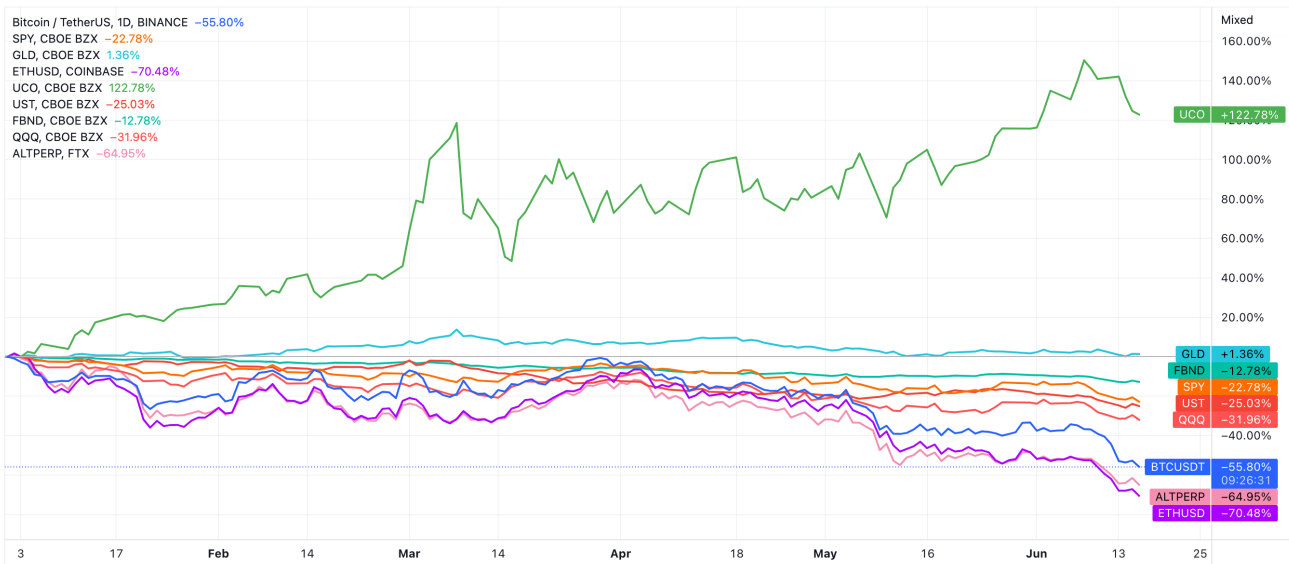


Notable News

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

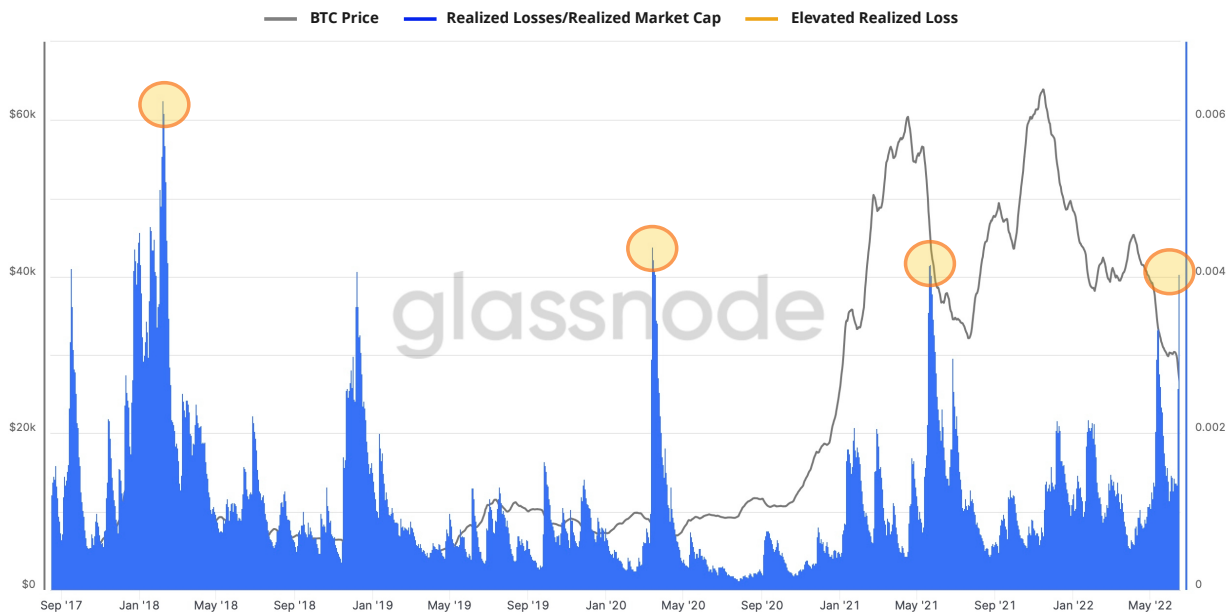
2022 Asset Returns



Asset	MtD*	QtD	YtD	Volatility (annualized)*	Sharpe (annualized)*	Correlation (to Bitcoin)**
Bitcoin	-28.7%	-54.1%	-55.4%	70.0%	-2.10	1.0
Ethereum	-38.3%	-67.3%	-70.1%	82.8%	-2.87	0.95
Altcoin Index	-26.6%	-59.4%	-64.7%	83.1%	-2.29	0.99
SPY	-7.4%	-16.3%	-20.4%	24.8%	-1.90	0.95
QQQ	-6.5%	-18.3%	-25.5%	32.2%	-1.90	0.94
GLD	-0.8%	-4.9%	1.4%	15.3%	0.15	0.85
UCO	3.9%	27.3%	124.6%	79.4%	2.69	-0.67
FBND	-3.0%	-6.5%	-11.3%	7.2%	-3.80	0.85
UST	-6.1%	-13.1%	-23.9%	18.2%	-3.33	0.71

Sources: Glassnode, AlphaVantage
 Assets: SPY = S&P500, QQQ = NASDAQ, GLD = Gold, UCO = Crude Oil, FBND = Total Bond Market, UST = 7-10 YR Treasury, Alt-Perp (FTX) = Altcoin Index
 *as of June 15, 2022
 **last 90 days

BTC Realized Losses/Realized Market Cap



- Realized Losses help us recognize the general state of investor pain. As network adoption grows and BTC market cap appreciates, it is important to maintain realized price and realized market cap to understand the scale of loss relative to prior market conditions.
- BTC realized losses relative to the current market cap (blue) with a 14D moving- average applied, reveals we are aligned with similar levels of loss to prior historical cycle bottoms. The only realized loss/realized market cap ratio that exceeded current levels was Jan/Feb of 2018 Q1 realized losses - at that time, many investors had access to spot leverage and unregulated perpetual swaps.

Bitcoin Reserve Risk



- The Bitcoin Reserve Risk indicator (orange) aims to measure confidence in Long Term Holder investors relative to the current price of Bitcoin. The ratio between the current price of BTC (incentive to sell) and this cumulative 'opportunity cost' quantifies the strength of investors who have resisted the temptation.
- When confidence is high while the price is low, there is an attractive risk/reward to invest — see current market conditions (green circle). When confidence is low while the price is high, risk/reward is unattractive.

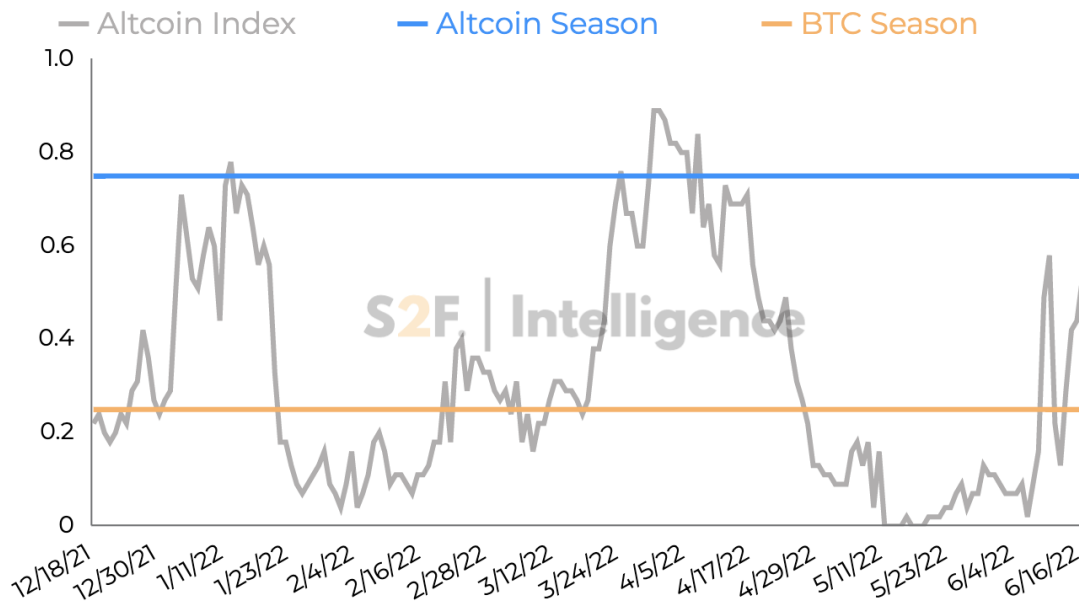
- **Bitcoin failed to reclaim the 50d MA (blue) and has sunk to the low \$20k range.** Since losing the 200 SMA on the weekly timeframe, Bitcoin is on the verge of revisiting the previous cycle's 2017 ATH.
- Bitcoin continues to weather the storm of rate hikes and institutional insolvency across the space.



- **Ethereum has continued to sell off and is close to the \$1k level.**
- ETH recently fell below both its realized price and the prior 2018 cycle ATH - we have failed to see relief as the price is hammered amidst negative news, unwinding collateral, and over-leveraged markets.
- We believe ETH is entering great long term accumulations as the merge from PoW to PoS inches closer.

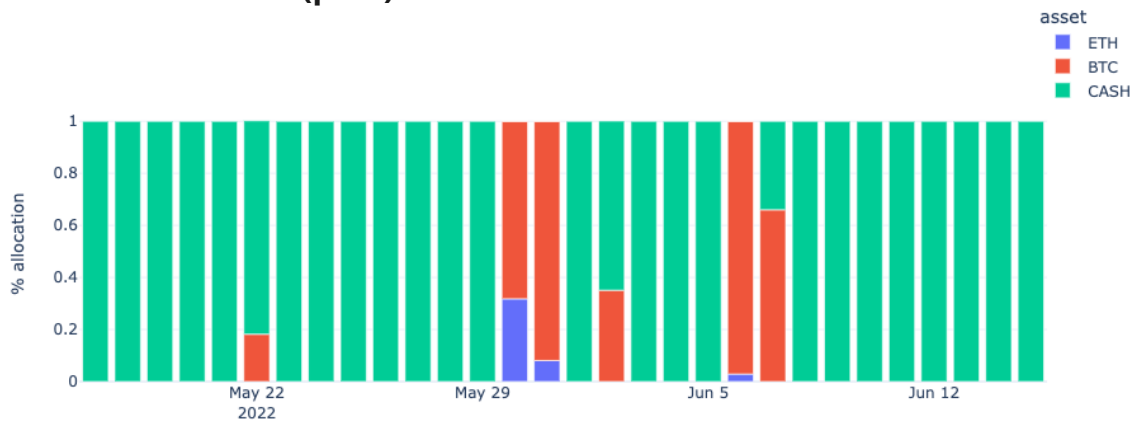


S2F Alt-Season Indicator



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 **indicate what may happen next**. When the Index line (gray) is below the **orange line**, it signals relatively strong momentum favoring Bitcoin vs. Altcoins.

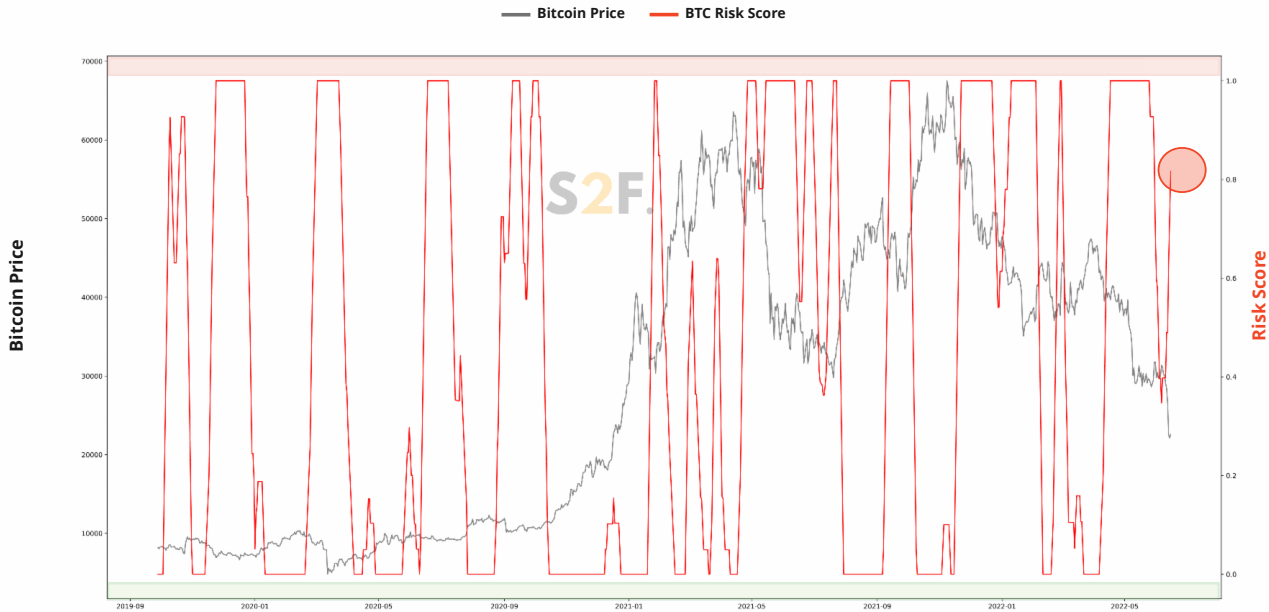
S2F Momentum Model (pMV)



The S2F Momentum Model is a proprietary model that **compares the price momentum of BTC vs. ETH vs. USD** over a rolling window to suggest an optimal allocation of capital to each of these three assets. The entry and exit signals rely on two momentum indicators, one slow and one fast, to help determine portfolio over- or underweight-ness in each of the three assets. The chart above shows the suggested daily allocation over the last 30 days.

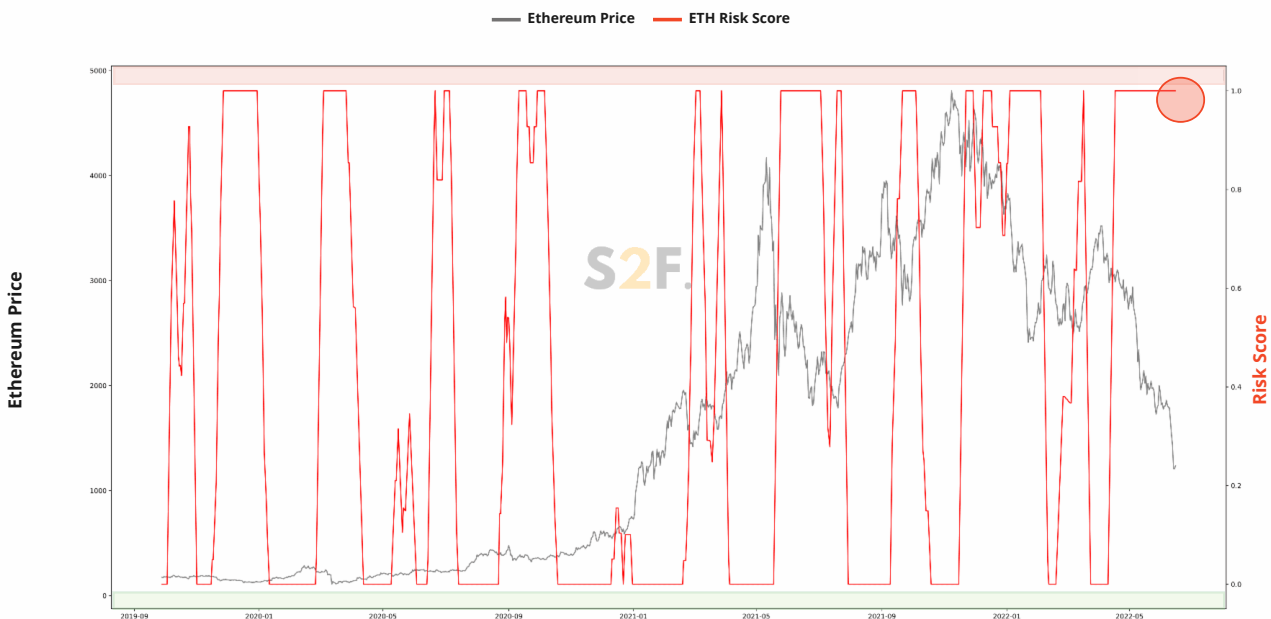
Delta Risk Score (Bitcoin)

The Delta Risk Score is a proprietary model that **measures the probability of an imminent retracement in price**. The indicator's value (**red line**) oscillates between 0 and 1, with the former signaling low-risk while the latter determines high-risk conditions. The chart below shows both indicators and the underlying asset's price (**grey line**) since Q4 2019.



Delta Risk Score (Ethereum)

The Delta Risk Score is a proprietary model that **measures the probability of an imminent retracement in price**. The indicator's value (**red line**) oscillates between 0 and 1, with the former signaling low-risk while the latter determines high-risk conditions. The chart below shows both indicators and the underlying asset's price (**grey line**) since Q4 2019.



Bear Market History

- Since early 2013, Bitcoin has experienced roughly 50 price drawdowns between all-time highs. The duration of these price drawdowns varies, but by looking at historical price data and investor profit and loss, we can identify the most optimal windows of opportunity to accumulate.
- We can see where investor losses align by examining unrealized loss conditions across several on-chain cohorts ranging from 3-month to 2-year holders.
- These historical windows of opportunity to accumulate **last an average of 145 days** and mark a bottom signal in price every time thus far.

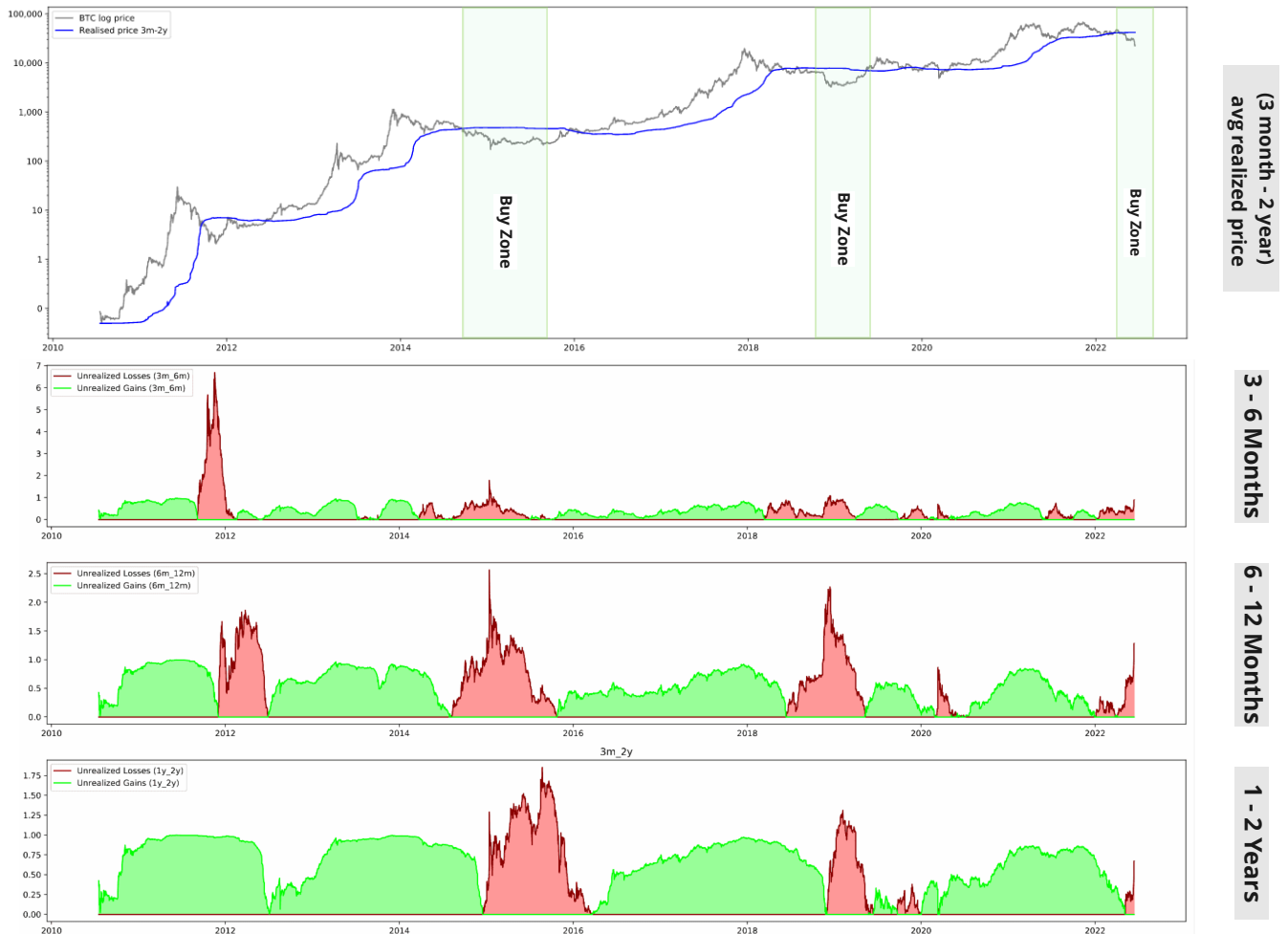
Windows of Opportunity	
12/17/2014 - 10/13/2015 > 300 days	(Optimal Accumulation)
11/26/2018 - 04/02/2019 > 127 days	(Optimal Accumulation)
03/12/2020 - 03/19/2020 > 7 days	(Optimal Accumulation)
05/07/2022 - ??? > 41 days so far	(Optimal Accumulation)

We are currently in **day 41** of the current optimal accumulation window.

S2F Optimal Accumulation Model

- The Optimal Accumulation Model features the weighted-realized price from three separate cohorts of coin holders. (3–6 month holders), (6–12 month holders), and (1–2 year holders). Weighted **realized price of 3-month - 2-year coins (blue)** vs. **current price of BTC (gray)**.

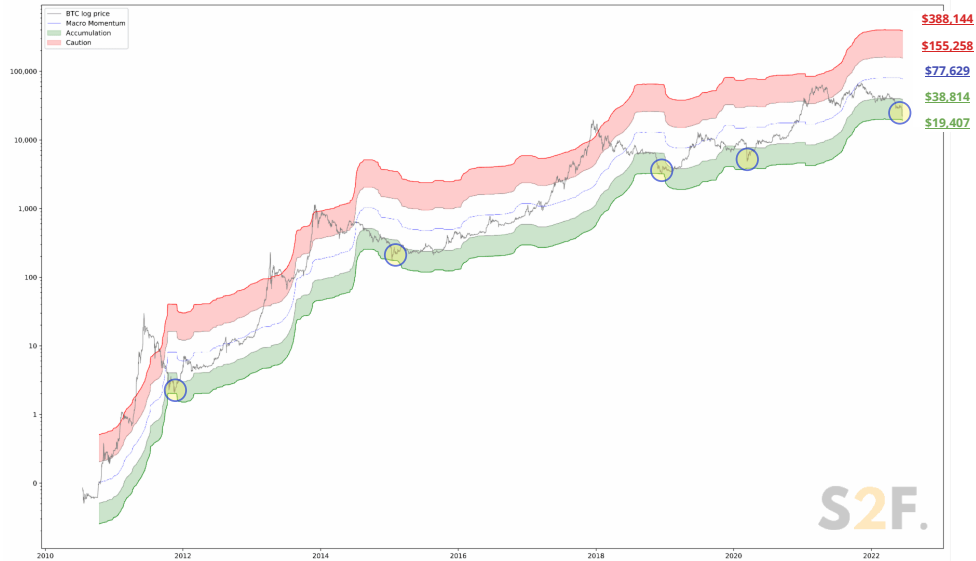
S2F Optimal Accumulation



- Opportunities for optimal accumulation occur when the current price of BTC falls below the realized price. Therefore, we have marked these as **buy zones (green)**. There have only been three prior instances in Bitcoin price history where all three groups have shown aligned unrealized price spikes. We are currently experiencing the fourth such occurrence in Bitcoin's history.

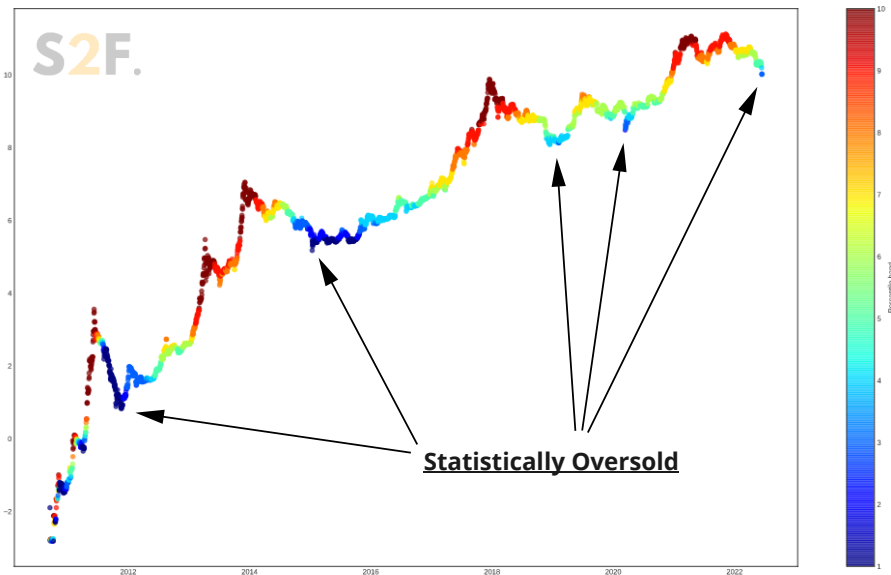
Caution & Accumulation Channel

From the inspiration of the S2F Optimal Accumulation model came the Caution & Accumulation Channel indicator. When we consider the realized cost basis across the various lifespans of holders, we can now identify further potential opportunities.



- Optimal accumulation periods to dollar-cost average and take profit conditions are represented by the different colored channels. The accumulation channels (**green**) offer buying opportunities, and the caution channel (**red**) indicates overheated conditions.
- Notice the duration of these windows and how infrequent they are - often only presenting themselves several years apart. It appear that we are currently experiencing one of these optimal accumulation opportunities.

Bitcoin Power Law



- The Bitcoin power law can be derived by taking a linear regression of the fair value of Bitcoin since the network's inception. The power law represents the correlation between the historical price of Bitcoin and the time since the first block was mined.
- Over time, the market price of BTC deviates from the "power law," and when the delta of spot price is too high relative to historical levels, we see percentile bands reach extremes. The **red percentile band signals overheated periods** of price action, while **dark blue can indicate we are entering a new historical bottom** in price action.

Bitcoin

- Stripe, one of the largest payment processors globally, announced businesses would be able to convert any amount of payments into Bitcoin via a new app from OpenNode. The Lightning Network infrastructure-based application will be available on Stripe's app marketplace in a few weeks.
- JPMorgan Chase analysts note that the fair price of Bitcoin is \$38,000 and that crypto is now the financial institution's preferred alternative asset pivoting from real estate. "We thus replace real estate with digital assets as our preferred alternative asset class along with hedge funds."
- Grayscale hires a former Solicitor General ahead of the July 6 deadline for the SEC to approve or reject Grayscale's application to convert their Bitcoin Trust (639.39K BTC under custody) into an NYSE-traded ETF.
- Influential musical icon Jay-Z and former Twitter CEO Jack Dorsey unveil plans to offer Bitcoin-focused financial literacy courses beginning this summer for children, teens, and adult residents of the Marcy Houses.

Ethereum

- Coinbase Cloud, Figment backs a new liquidity staking protocol called Alluvia. The protocol will allow institutions to get exposure to staking (KYC).
- GameStop releases their self-custody Ethereum-based wallet, which utilizes Loopring's L2 ZK-rollup technology to provide "fast and fairly priced transactions."
- Ethereum completed the Ropsten testnet merge - this is the first testnet merge as the protocol prepares to transition from PoW to PoS consensus. There will be two more testnet merges before a mainnet merge announcement date can be set.
- Ethereum core developers announced proposal EIP 5133 to delay the difficulty bomb to August 2022. This timeframe suggests the earliest date for the merge would be September of this year or possibly Q4.

Layer 1's

- Terra 2.0 (LUNA) launched over Memorial Day weekend. Previous LUNA holders received an airdrop following the recent collapse in early May, after the Terra community voted for the genesis of a new blockchain.
- The founder and CEO of Terraform Labs, Do Kwon, was ordered to comply with a recent SEC subpoena after the company and its founder may face legal liability following the recent implosion and failure of the blockchain's stablecoin, UST.
- Solana released \$100M to fund and help expand gaming, non-fungible token (NFT), and DeFi projects in the South Korean Web3 ecosystem.
- The U.S. SEC announced it is investigating whether Binance Holdings Ltd. breached securities laws when it conducted an initial coin offering (ICO) for its native Layer 1 \$BNB token.

Other Headlines

- Russia's Deputy Minister of trade and industry, Vasily Shpak, says, "mining accounts for more than 2% of the overall map of electricity generation in our country". Russia is actively discussing whether or not to allow crypto for international payments.
- Chipotle announced its partnership with the Flexa payment platform, which supports 98 digital currencies, to accept cryptocurrency payments at any restaurant across the US.
- PayPal announced it would finally be adding a feature to let users move their crypto to external wallets and hardware devices from the PayPal platform.
- The most recent "Responsible Financial Innovation Act" highlights a modified version of the Digital Exchange Act (DCEA), a bill proposed to make the CFTC the primary spot market regulator for crypto. In addition, the bill aims to refine the classification of cryptocurrencies as securities or commodities by defining them as "ancillary assets," which would be overseen by the CFTC.
- Lending platform Celsius halts user withdrawals amidst rumors of insolvency due to over-leveraged stETH positions and under-collateralized DeFi loans.

Alt-Season Indicator: This indicator is based on a proprietary model that helps us identify the current market phase and adjust the allocation accordingly.

Beacon Chain: Is the current ETH 2.0 proof-of-stake blockchain. It was launched Dec 2020 and is the first iteration towards the new Ethereum 2.0 blockchain upgrade.

Bitcoin Halving: Is the process of halving the rewards of mining Bitcoin blocks. This event occurs after each set of 210,000 blocks is mined (blocks are mined every 10 minutes, so around 4-years).

Consensus: A consensus mechanism is a method for validating entries into a distributed database and keeping the database secure.

Delta Gradient: Metric measures the difference between the gradient of both spot price and the realised price. Shows the relative change in momentum between speculative value and true organic capital inflows.

Epoch: Ethereum 2.0 progresses in epochs, not blocks. An epoch is a bundle of up to 32 blocks that actors on the network (called validators) propose and attest to over a period lasting roughly 6.4 minutes.

Ethereum Validator: A validator is an entity that participates in the consensus of the Ethereum protocol. Users stake 32 ETH to become a validator. Validators are chosen at random to create blocks and are responsible for checking and confirming the network ledger.

Liquidity Pool: A liquidity pool allows depositors who provide digital assets to earn money from transaction fees generated by other users who buy and sell assets from the pool. Those transaction fees go back into the liquidity pool to further increase the value of your tokens and aid in growing the pool.

Stablecoin: Stablecoins attempt to maintain a constant exchange rate with fiat currencies, for example through a 1:1 U.S. dollar peg. stablecoin is typically a cryptocurrency collateralized by the value of an underlying asset. (Fiat, commodity, crypto, and sometimes algorithmically)

Supply Staked: Measures the amount of the digital asset that are locked up with network "validators", or miners, that process the protocol transactions. "Stakers", aka investors that stake, can earn coins as rewards in exchange for securing the network.

TVL (Total Value Locked): Representation of the total value of a crypto-asset that is "locked" in a DeFi (decentralized finance) application or smart contract. TVL can directly affect the yield and usability of these applications.

Unspent Transaction (UTXO) : An unspent transaction output (UTXO) is the technical term for the amount of digital currency that remains after a cryptocurrency transaction. UTXOs define where each blockchain transaction starts and finishes.

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