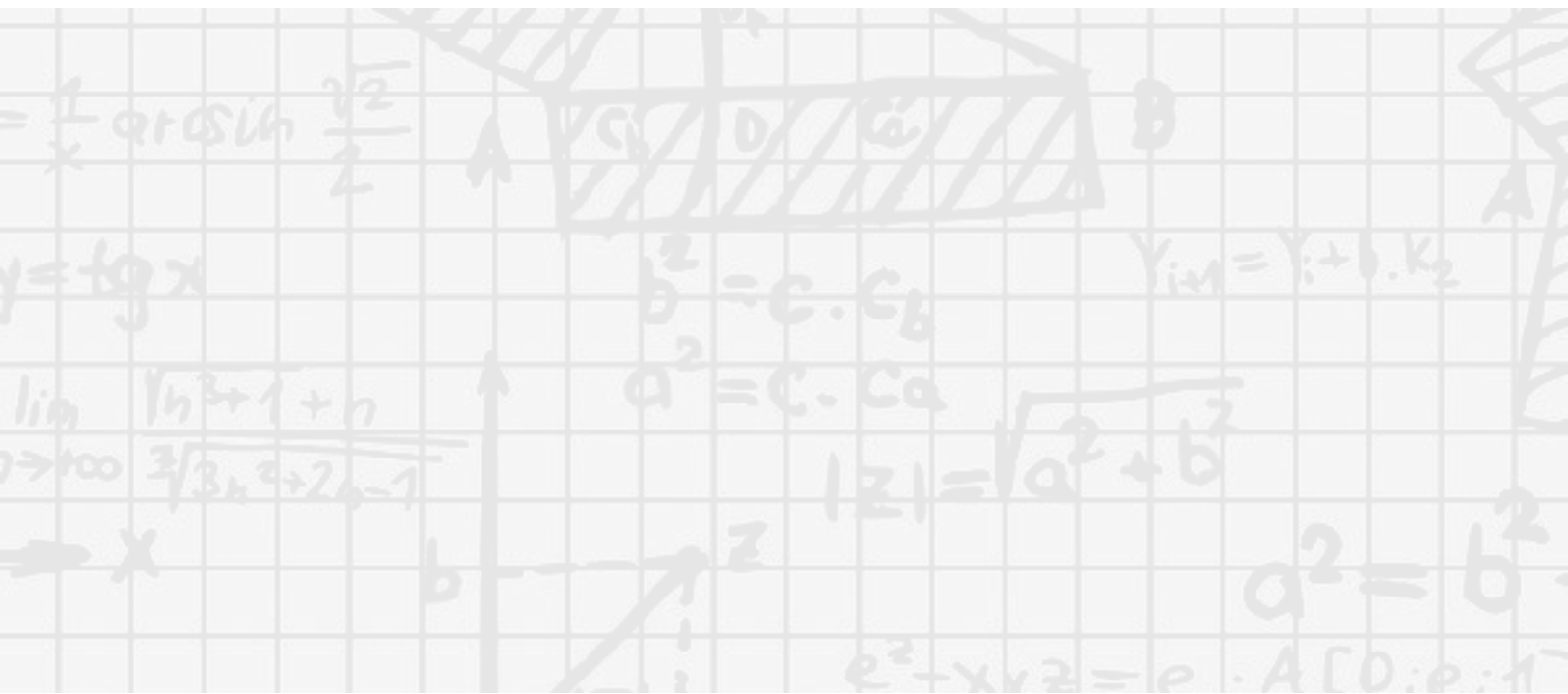


# Digital Asset Markets Report

1H April 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

- Since the last edition of our research report, we've witnessed markets shift focus from the Russia and Ukraine conflict to the largest CPI print in 40 years. Month over month, inflation reached 8.5% exceeding market expectations. Energy and food costs continue to strain consumers as markets anticipate the Federal Reserve will increase interest rates by 50 basis points at the May FOMC meeting.
- Fed Governor Waller said the March CPI report was "pretty much the peak" and that the economy will start "seeing some relief on inflation in the coming months." We are not holding our breath.
- These dovish remarks from a Fed official are the first since the start of the fiscal year and could signal a potentially less aggressive pace of rate hikes for the remainder of 2022. Since 2019, the 2-year Treasury yield has risen above the 10-year Treasury yield. Maturities on the yield curve have not inverted since August 2019, and it remains a historically reliable indicator of future economic weakness.
- Government officials await the release of The Responsible Financial Innovations Act. The bipartisan bill, introduced by US Senator Lummis (WY), aims to provide regulatory clarity and offer a legislative framework to accommodate digital asset innovation in the United States.



## Macro Performance

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- U.S. crude oil peaked at \$115 per barrel a few weeks ago but has recently settled at \$106. Attempts to curb oil prices through reserve releases and pressure on OPEC have done little to soften the blow on consumers.
- Gold is up 9.16% on a YTD basis. Gold is experiencing its best quarterly performance since September 2020 as an increasing number of investors retreat to the historical safe-haven asset.
- Treasury yield spreads continue to fall and might invert yet again.
- The CPI print vs. the 10-Year Treasury yield has reached an all-time-high yield ratio below inflation. The discrepancy in the balance between the two data points is more significant than anything seen in the '70s and '80s.



## On-Chain Analysis

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- **Long Term Holder MVRV + Thermocap Divergence:** LTH MVRV rate of 30 day change is increases while the market cap to thermocap ratio is stagnant. This divergence signals that the market is undervalued relative to network fundamentals.
- **Ethereum vs. Bitcoin Address Growth:** The acceleration in ETH address growth aligns with innovations within the Ethereum network like DeFi and NFT adoption, while Bitcoin's address growth remains less aggressive.



## Technical Levels

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- **Bitcoin:** After a short break to the upside, Bitcoin retraced to the 40k support level. Price action is choppy and lacks conviction.
- **Ethereum:** ETH has maintained greater strength in price action than Bitcoin throughout this recent drawdown and continues to defend the psychological \$3k level.



## Momentum & Sentiment

Pages 4-5

- **pMV momentum model:** The model is currently in risk-off mode (Cash).
- **Alt-season indicator:** The indicator is currently in a neutral zone.
- **Delta risk scores:** Cautionary conditions for both BTC and ETH.



## Money Flows & Themes

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- **Ethereum Staking Growth:** Staking deposits are at their highest value ever (\$130 million/day). Of the nearly \$4B in ETH deposited over the last 30-days, 2/3 of new net inflows to the ETH 2.0 contract were liquid staking.
- **Ethereum Net Deflation:** ETH 2.0 model projects a max circulating supply of 119.4 million tokens this summer. Post merge, Ethereum will be a net deflationary asset. (118.2M in 2023, 117.8M in 2024, and 115.8M in 2025)

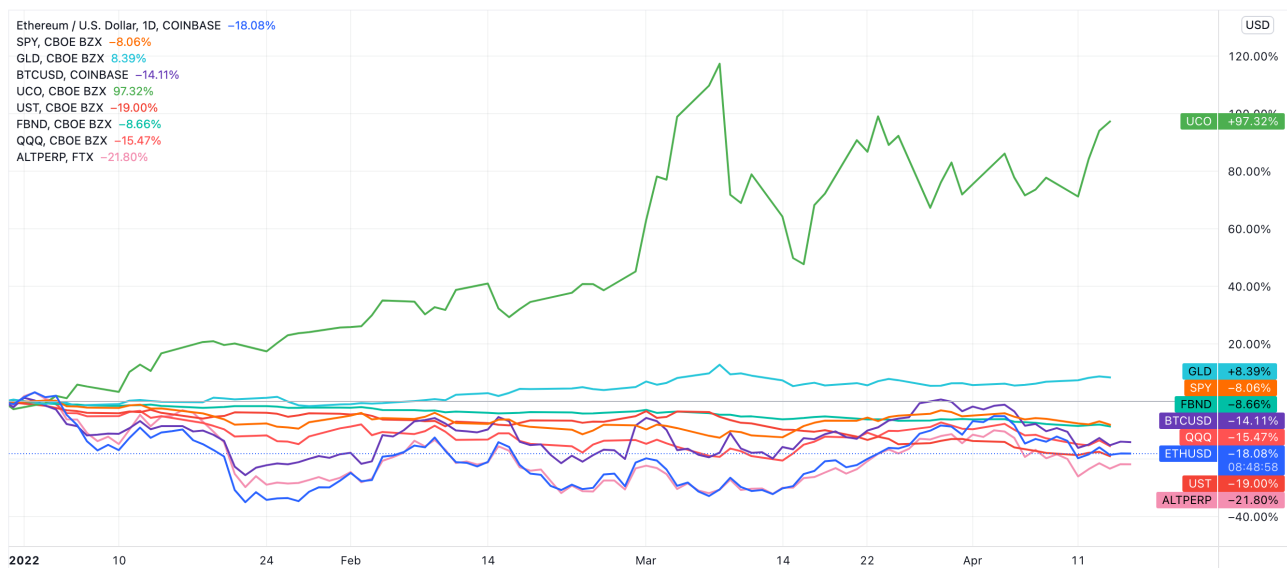


## Notable News

Page 7

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

## 2022 Asset Returns



Asset	MtD*	QtD	YtD	Volatility (annualized)*	Sharpe (annualized)*	Correlation (to Bitcoin)**
Bitcoin	-12.3%	-12.3%	-14.11%	65.78%	-0.57	1.00
Ethereum	-11.8%	-11.8%	-18.08%	77.06%	-0.57	0.91
Altcoin Index	-11.6%	-11.6%	-21.80%	72.28%	-0.96	0.83
SPY	-3.3%	-3.3%	-8.06%	20.65%	-1.43	0.59
QQQ	-4.3%	-4.3%	-15.47%	28.56%	-1.59	0.52
GLD	2.5%	2.5%	8.39%	15.24%	2.06	0.21
UCO	12.4%	12.4%	98.4%	86.22%	3.33	0.33
FBND	-2.6%	-2.6%	-8.68%	6.11%	-5.08	-0.43
UST	-6.2%	-6.2%	-19.0%	16.79%	-4.13	-0.48

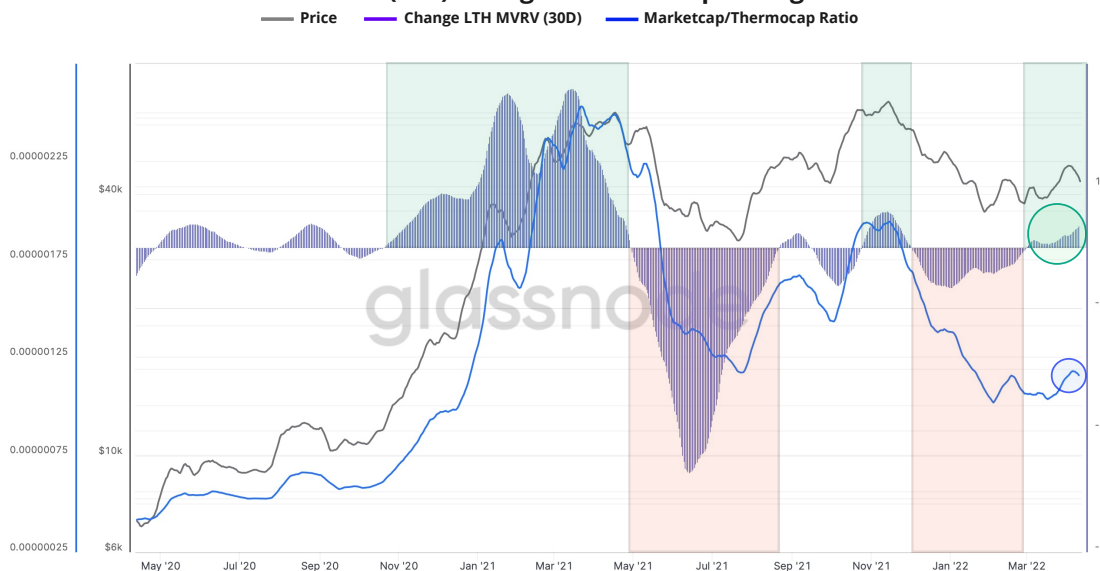
Sources: Glassnode, AlphaVantage

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 April 15, 2022

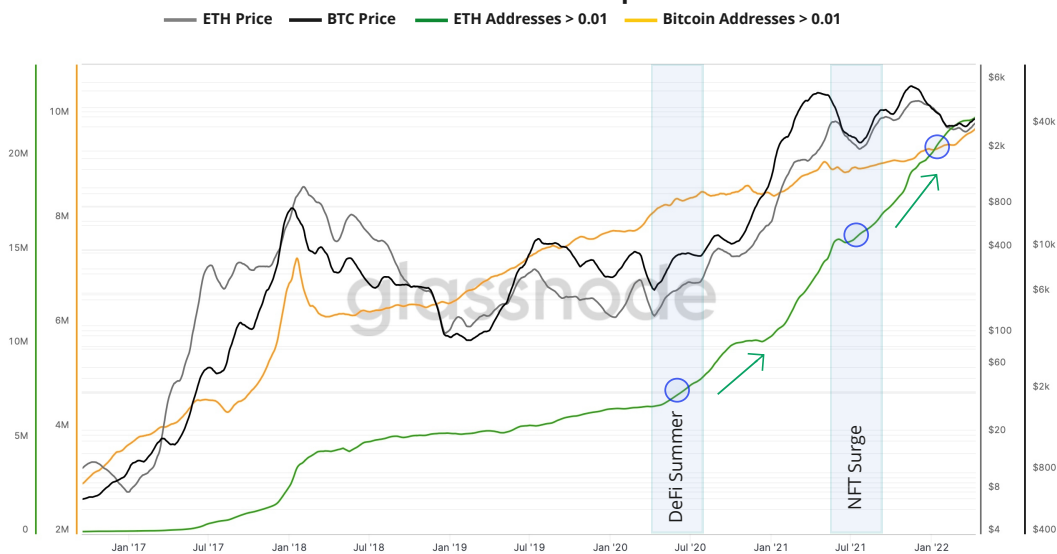
\*\*last 90 days

## LTH MVRV (30d) Change + Thermocap Divergence



- Long-term holder MVRV (market-value-to-realized-value) measures the ratio between market cap and realized cap for coins that have not moved in 155 days. The indicator signals suggest that when the price is below a "fair value" for long-term holders.
- The **LTH MVRV** rate of change over 30 days (**purple bar chart**) began to increase in March, and historically price mirrors direction (**green shading**). Therefore, when LTH MVRV is decreasing on a monthly timeframe, the price will follow the downside (**red shading**).
- Marketcap/Thermocap ratio (**blue line**) helps assess if Bitcoin's current price is trading at a premium or discount relative to the total security spent by miners. The ratio currently suggests Bitcoin's price is trading at a substantial discount.

## ETH vs. Bitcoin Address Adoption Growth



- While ETH price (**gray**) and Bitcoin price (**black**) have moved in tandem with one another through the 2017-2018 and 2020-2021 bull markets, we're witnessing an on-chain contrast in the slope of their adoption curves.
- The current ETH addresses with > 0.01 ETH balance (**green**) are exhibiting an exponential rate of growth, while Bitcoin addresses with > 0.01 BTC (**orange**) continue to increase but at a less aggressive slope.
- The **acceleration in address growth aligns with innovations within the Ethereum network**. The slope of address adoption becomes notably steeper during DeFi 2020 summer and even more pronounced during the rise in popularity of NFTs last summer.
- As the highly anticipated merge approaches, we expect this adoption rate to continue to accelerate to the upside.

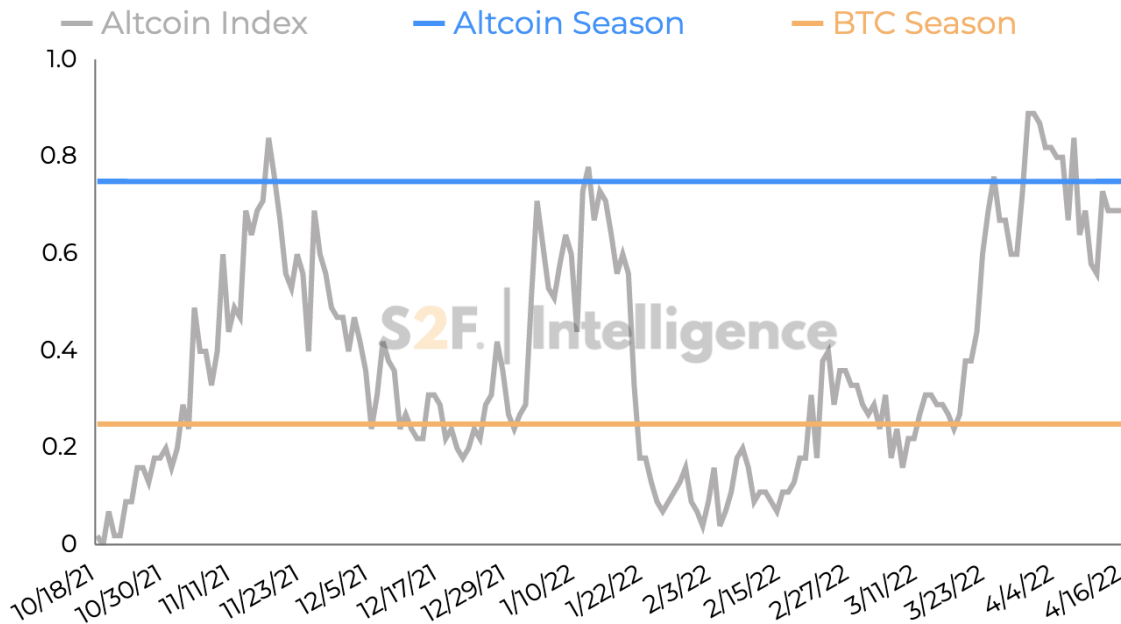
- After a short break to the upside, Bitcoin retraced to the 40k support level. Price action is choppy and lacks conviction.
- BTC attempted to break the **200d MA (gold)** and was swiftly rejected. While we anticipated the bearish price action to halt and find support at the **50d MA (blue)**, it was unable to do so and broke below. However, if the price stabilizes around current levels, it will be consistent with the overall upward trend line on the chart (**black**).



- ETH has maintained greater strength in price action compared to Bitcoin since the recent drawdown.
- Ethereum price action followed the BTC breakout and subsequent rejection at the **200d MA (gold)**. Unlike Bitcoin, Ethereum is consolidating just above the **50d MA (blue)**, and we want to see this become the next level of short-term support.
- After seeing that ETH was unable to break below the \$3k level, coupled with the merge from PoW to PoS on the horizon, we expect the institutional appetite for ETH to increase, especially as cash continues to devalue given the rates of inflation we are seeing.

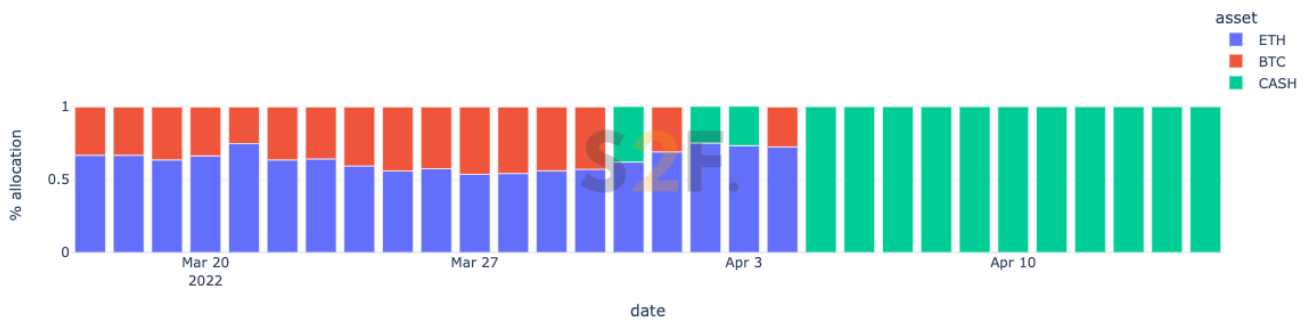


S2F Alt-Season Indicator



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)

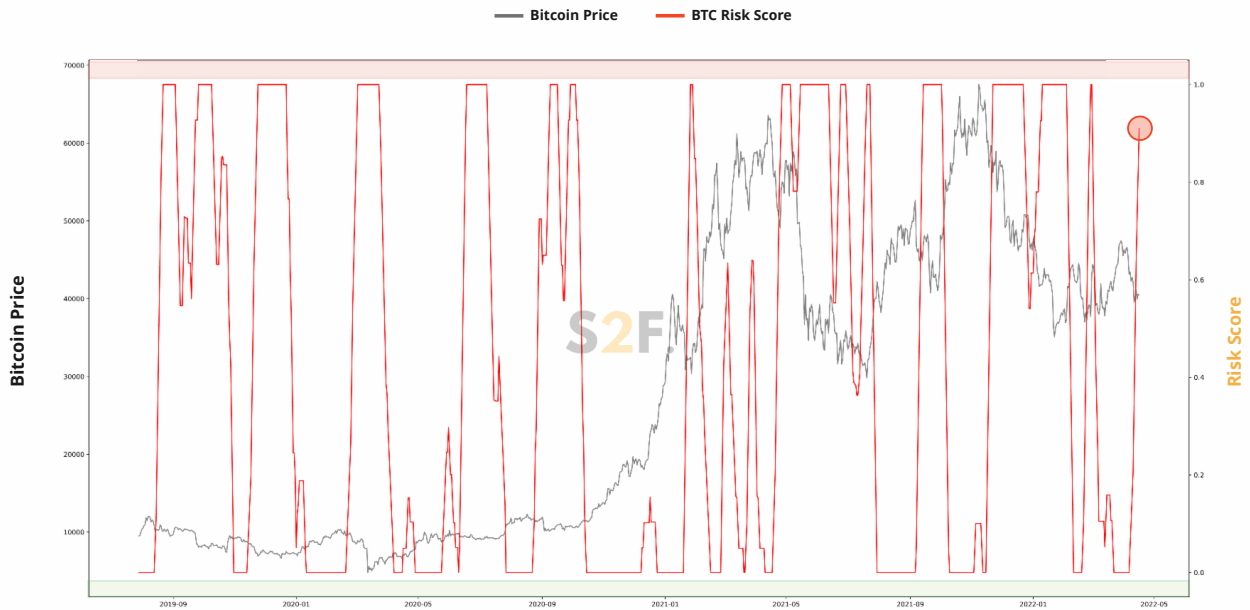


The S2F Momentum Model is a proprietary model that **compares the price momentum of BTC vs. ETH vs. USD** over a rolling window to suggest an optimal allocation of capital to each of these three assets. The entry and exit signals rely on two momentum indicators, one slow and one fast, to help determine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

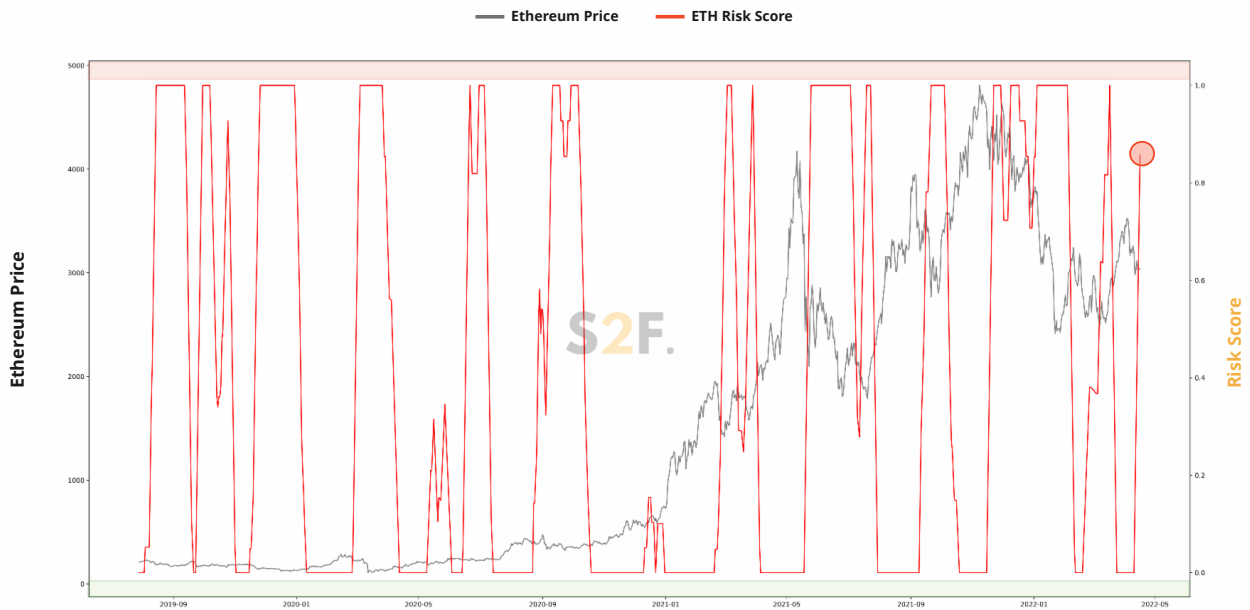
## Delta Risk Scores

The Delta Risk Score is a proprietary model that **measures the calculated risk of an imminent retracement in a specific digital asset's 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 two charts below show both indicators and the underlying asset's price (**gray line**) since Q4 2019.

### Bitcoin



### Ethereum



## Ethereum Triple Halving

- The Ethereum network will transition from Proof of Work (PoW) to Proof of Stake (PoS) **resulting in a ~90% decrease in the annual issuance rate of ETH**. This is a very big deal! PoS participants who provide network security by staking their tokens **receive approximately 6% APY**. The allure of these passive returns is creating high demand for Ethereum.

### Net Deflationary Asset (2022-2025)

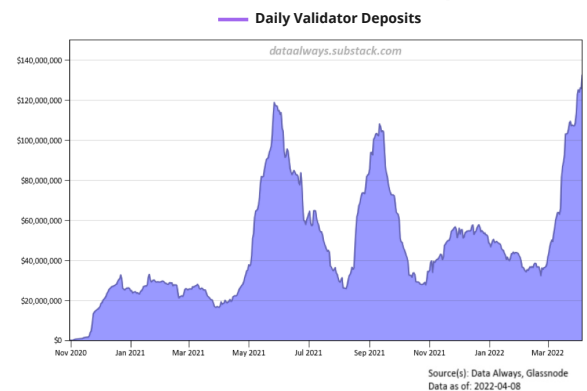


- If we speculate a merge date around Q3 2022, the model above projects a max circulating supply of **119.4 million ETH**.
- Current PoW rewards flowing into the ecosystem are approximately 14,000 ETH/day. Post-merge, the annual **inflation rate of ETH will reduce to 1400 ETH/day**, and miner rewards will be exclusively distributed to validators. **This event will result in a decrease in the inflation rate by a factor of 10.**

## Liquid Staking Rewards

- The rise in "liquid staking" products has also fueled the massive surge in demand to stake Ethereum to the Beacon chain.
- Of the **nearly \$4B in ETH deposited over the last 30-day period**, almost 2/3 of new net inflows to the ETH 2.0 contract were liquid staking.
- Staking derivative tokens allow users to stake their ETH and receive a derivative ETH token (such as stETH) to use as a liquid trading instrument.
- The recent release of the icETH token highlights the utility liquid staking can provide. icETH compounds interest earned from the stETH derivative and AAVE money market protocol.

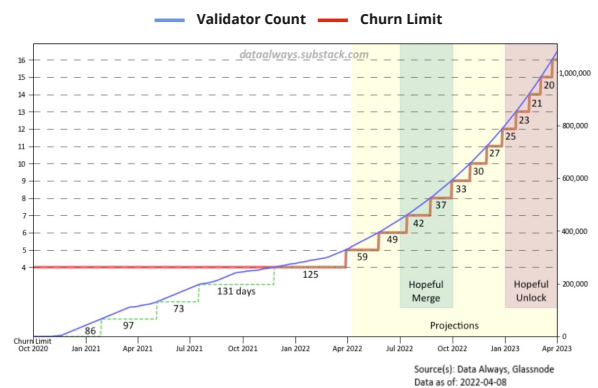
### Beacon Chain Validator Deposits



## ETH 2.0 Validator Queue

- Proof of Stake has a security mechanism called the **validator queue**. The queue protects the network by limiting the number of ETH validators that can deposit and join per day.
- To help ensure the security and stability of the network, a churn limit is applied, which specifies parameters behind the number of validators that can deposit and withdraw.
- ETH 2.0 validators have now surpassed 327,680.
- Following a successful merge, the network could experience an overwhelming interest in staking participation, resulting in a **Validator Deposit Queue delay which could vary from weeks to potentially even months**. This is very bullish.

### Maximum ETH Validator Limit





## Bitcoin

- Lightning Labs raises \$70 million in a Series B funding round led by Valor Equity Partners. Funding will help enable stablecoin transactions on the lightning network using Lightning Labs' new Taro protocol.
- Mexican senator Indira Kempis proposes legislation to make Bitcoin legal tender in Mexico.
- Robinhood, Cash App, and crypto exchange Kraken announce support for integration of Lightning Network coming soon to platform.
- Blackhawk and NCR Global partnerships with Strike and integrating LN enabling large merchants to accept and transact Bitcoin.
- Blockstream and Block team up to launch a new Bitcoin mining operation using Tesla's 3.8 MW solar PV in Texas. The facility's design aims to be a proof of concept for a 100% renewable bitcoin mining operation.

## Ethereum

- Ethereum's leading L2 rollup, Arbitrum announces their Nitro update is now live on devnet; Nitro will be the most advanced rollup stack ever built, optimizing batching and compressing transaction data.
- Due to client demand, Goldman Sachs discusses plans to launch over-the-counter ETH options trading.
- Tesla finances a \$7.8 million loan through a commercial lender powered by MakerDAO to build automotive repair facilities.
- Ethereum developers successfully executed the merge shadow-fork test on the mainnet. The shadow-fork is the closest real-life scenario to implementing the ETH 2.0 protocol upgrade, eliminating PoW miners.
- According to Ethereum developer Tim Beiko, the Ethereum merge will likely be delayed until Q3 this year.

## Layer 1's

- The Luna Foundation Guard (LFG) expands its stablecoin reserve to include Avalanche in addition to more than \$1.7B+ in Bitcoin. Terra (LUNA) has acquired \$200 million of AVAX from the Avalanche Foundation.
- Terra/LUNA and protocol's native UST are working with Frax Finance (Curve War) - on Fantom L1 (4Pool) to compete with MakerDAO's \$DAI in stablecoin market share.
- OpenSea, the largest NFT marketplace, activates NFT support for the Solana blockchain.
- Neon Alpha launches on the Solana devnet. Neon is the first EVM, cross-compatibility, and scaling solution built on Solana, allowing Ethereum developers to integrate applications into their network.
- Luna Foundation Guard has now accumulated 42,406 Bitcoin to support the network's native UST stablecoin reserve. They are currently the 18th largest wallet, roughly 800 coins less than Tesla.

## Other Headlines

- US Senator Lummis is preparing to release her bipartisan bill surrounding privacy, taxes, and regulatory agencies framework to help define digital asset parameters to accommodate innovation in the United States.
- A recently approved Virginia bill allows state-chartered banks to provide custodial services for virtual currencies. The law will come into effect on July 1st and enable banks to hold users' private keys.
- BAKKT - American bank will bid to have the opportunity to offer their customers BTC/ETH. They anticipate this offering will be live in Q2.
- Pierre Poilievre, who is running for the Conservative Party of Canada in the 2022 elections, wants to make Canada the "world's crypto capital" and says Bitcoin is a means to "opt-out of inflation."
- Circle, the issuer of the USDC stablecoin, raised \$400 million in a new funding round led by BlackRock, which also saw participation from Fidelity Management. BlackRock also announced it would take a principal role in managing USDC's reserves.

**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.

**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.

**Gas Fees (GWEI):** Gas refers to the unit that measures the amount of computational effort required to execute operations on the network. Gas is a fee required to conduct a transaction on Ethereum successfully. Gwei is short for giga-Wei. Wei is the smallest unit of the Ethereum network.

**Investor Activity:** The amount of generalized attention a digital asset receives as well as how much the asset is traded. This also measures the activity of large and small holders.

**Liquid Staking:** Is the act of delegating your tokens to a service that stakes for you without losing access to your funds. Liquid staking allows you to access your funds' liquidity while staked. The funds remain in escrow but aren't "locked" and inaccessible as they would be with traditional PoS staking.

**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.

**Validator Queue:** Proof of stake has a security mechanism called the validator queue. The queue protects the network by limiting the number of ETH validators that can deposit and join per day.

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