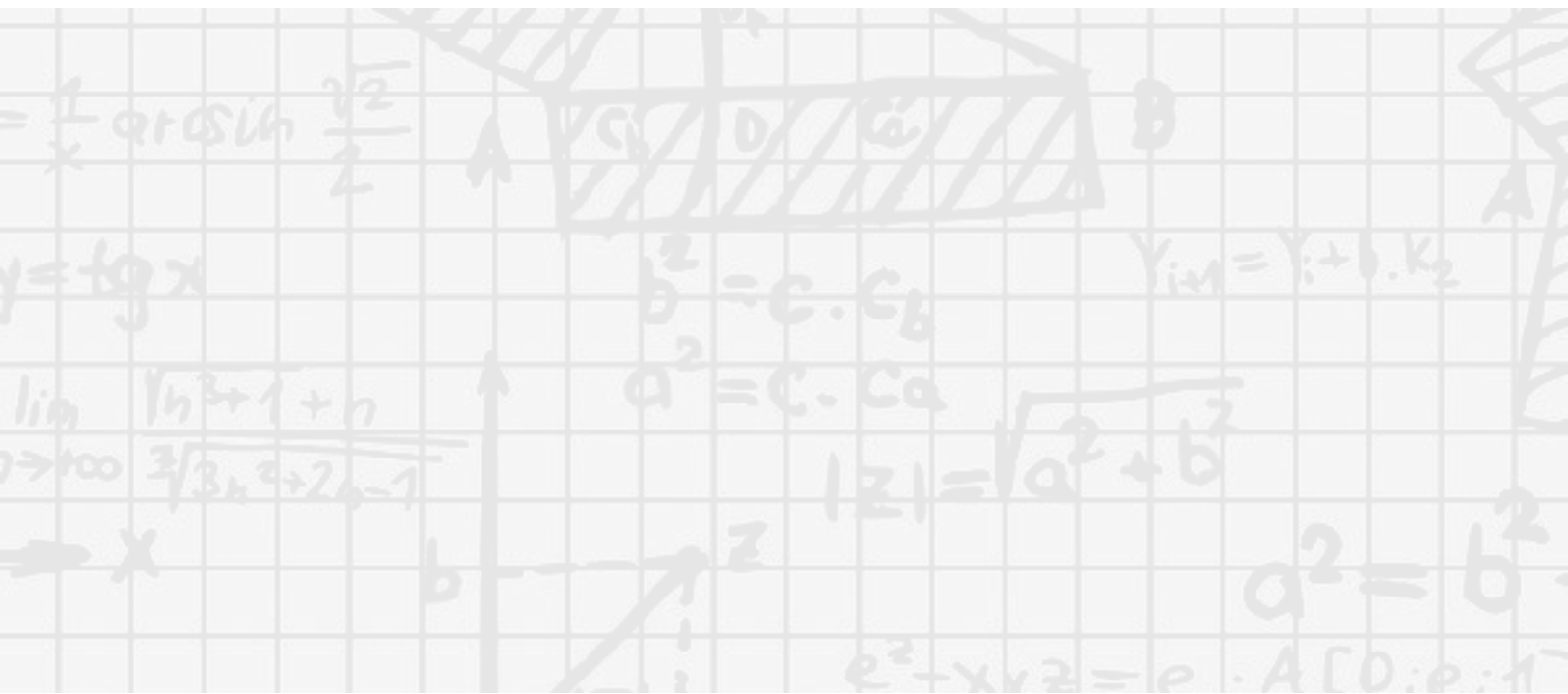


# Digital Asset Markets Report

2H 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

- Markets indices saw violent drawdowns as the S&P 500 experienced its worst April performance in more than 50 years — closing down 9% as the NASDAQ closed down 13%. The Federal Reserve increased its funding rate to 50 bps and indicated that the next couple of hikes would most likely remain within the 25-50 bps range. In addition, the Fed will implement a balance sheet runoff plan of \$45.7 billion (30 \$billion in Treasuries and \$17.5 billion in MBS) with an eventual increase to \$95 billion (\$60 billion U.S. Treasuries and \$35 billion MBS) starting in September.
- Commodity markets continue to experience one of the largest supply shocks in decades due to the war in Ukraine. According to the IMF, energy prices are projected to rise more than 50% percent in 2022 before easing in 2023 and 2024. In addition, non-energy costs associated with agriculture and food production are expected to increase in 2022 before relaxing in the following years.
- The digital assets market strongly correlates to U.S. stock markets, primarily the NASDAQ and S&P 500, due to the indices' heavy weighting in the tech sector. Therefore, it is prudent to be mindful of these correlations in the short term. However, we believe the case for digital assets decoupling from the current indices correlations is entirely possible in the not too distant future. The upside of network fundamentals (i.e., Metcalfe's Law) in this emerging asset class continues to offer investors the opportunity to outperform traditional finance in the long term.

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## Macro Performance

- In recent weeks, U.S. crude oil peaked at \$108 per barrel and is threatening to push higher. Oil is up a whopping 80% YTD, and consumers certainly feel it at the pump.
- Gold is up 3.63% on a YTD basis as the "safe-haven" asset outperforms the broader market.
- The Treasury yields finished April with their largest increase since 2009, with the 2y at 2.73% and the 10y at 3.09%. The Treasury curve flattened further, creating warning signs of recessionary conditions.



## On-Chain Analysis

Page 2

- **NVT Price Model:** The NVT Price Model values the Bitcoin network using transaction volume settled by the blockchain. The NVT Premium is the market price ratio above or below the 90-day NVT price, which suggests the price is currently fundamentally discounted.
- **Bitcoin Exchange Net Position:** Month over month outflows of Bitcoin from exchange wallets accelerated in April. Almost 80,000 Bitcoin was withdrawn relative to the prior month.



## Technical Levels

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- **Bitcoin:** Bitcoin failed to maintain the psychological 40k support level and currently puts the bears in control. As volatility in equities continues, Bitcoin is battling to stay above its current macro support zone in the low 30s.
- **Ethereum:** ETH was unable to reclaim the \$3k level. While Bitcoin has outperformed most other L1 assets on the recent drawdown, Ethereum has managed to hold better ground on a relative basis.



## Momentum & Sentiment

Pages 4-5

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



## Money Flows & Themes

Pages 6-7

- **Bond Market Real Yields:** Bond buyers are getting 7.12% less than the "fair" yield. Compared to valuations that historically produced real yields of 2%, the current bond market cap suggests an overvaluation of \$12 trillion.
- **Yield Curve Control and Digital Assets:** Central Banks face the difficult decision of implementing yield curve control or raising the cost to service the overwhelming national debt. Digital assets offer fixed-income investors an alternative for their portfolios that could one day become a necessity for sovereign balance sheets as well.

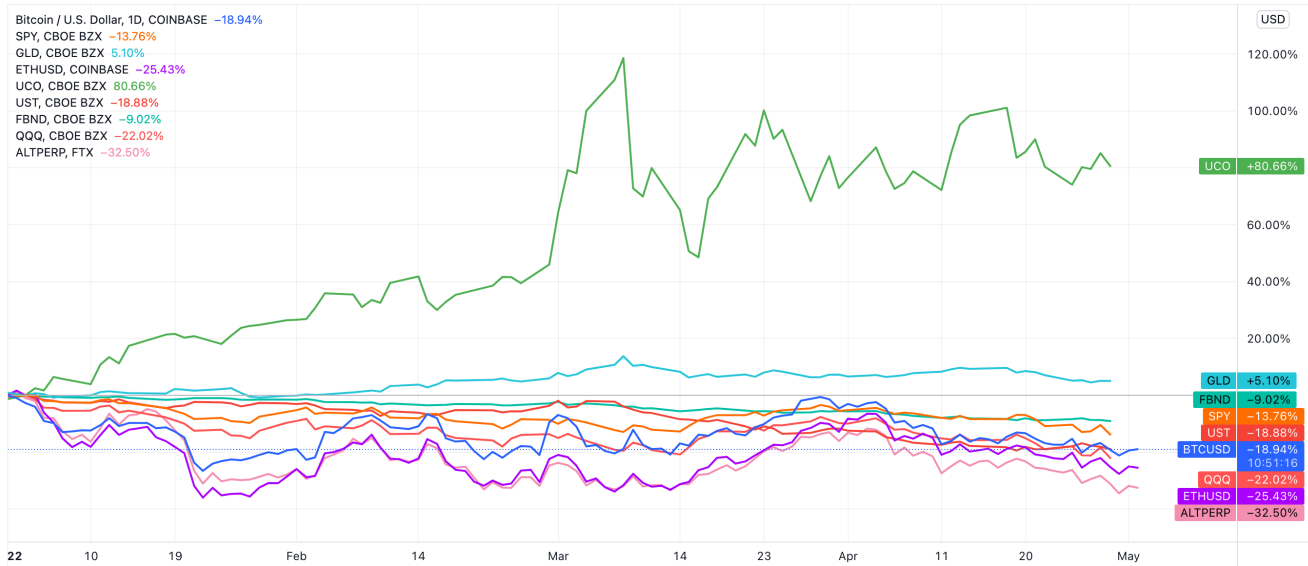


## Notable News

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

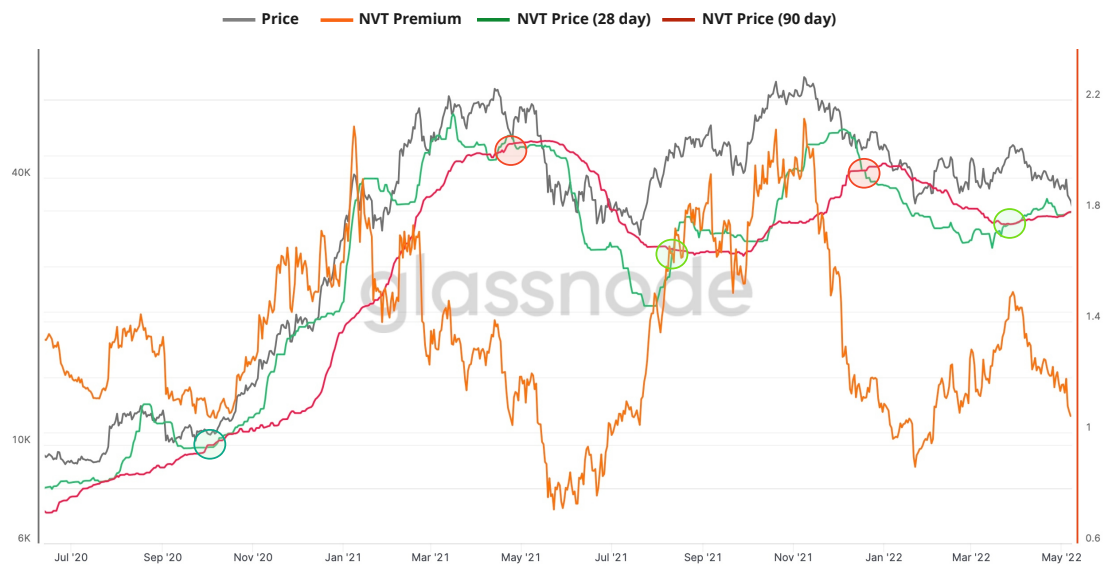
2022 Asset Returns



Asset	MtD*	QtD	YtD	Volatility (annualized)*	Sharpe (annualized)*	Correlation (to Bitcoin)**
Bitcoin	-18.5%	-18.5%	-18.9%	63.6%	-0.76	1.0
Ethereum	-20.6%	-20.6%	-25.4%	74.4%	-0.95	0.86
Altcoin Index	-24.5%	-24.5%	-32.5%	70.1%	-1.5	0.91
SPY	-9.0%	-9.0%	-13.8%	22.3%	-2.1	0.65
QQQ	-10.8%	-10.8%	-22.02%	29.3%	-2.1	0.64
GLD	-1.4%	-1.4%	5.1%	15.2%	0.95	0.01
UCO	2.3%	2.3%	80.7%	84.1%	2.5	0.08
FBND	-3.6%	-3.6%	-9.0%	6.3%	-4.7	-0.02
UST	-7.4%	-7.4%	-18.9%	16.8%	-3.8	-0.12

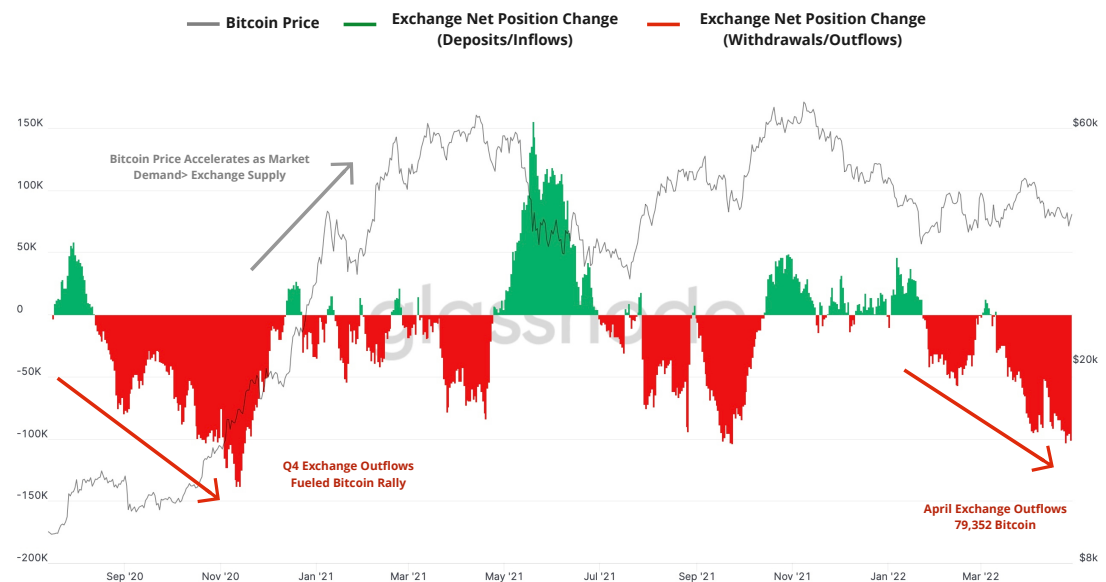
Sources: Glassnode, AlphaVantage  
 Assets: SPY = S&P500, QQQ = NASDAQ, GLD = Gold, UCO = Crude Oil, FBND = Total Bond Market, UST = 7-10 YR Treasury, Alt-Perp (FTX) = Altcoin Index  
 \*as of April 15, 2022  
 \*\*last 90 days

## NVT Price Model (Entity Adjusted)



- The NVT Price Model values the Bitcoin network using transaction volume settled by the blockchain. NVT price can generally be considered a "fair value" based on its utility as a settlement layer. It is calculated using the NVT ratio (on-chain volume to market cap).
- The 28-day NVT Price (green) and the 90-day NVT Price (red) help provide a fast and slow signal for when network momentum is trending to the upside or downside. When the 28-day price crosses above or below the 90-day NVT price historically follows.
- NVT Premium (orange) is the market price ratio above or below the 90-day NVT price, which suggests BTC is fundamentally discounted.

## Bitcoin Exchange Net Position Change



- Bitcoin Exchange Net Position Change over is an indicator used to measure month-over-month inflows and outflows of Bitcoin from exchange wallets. Since January, exchanges have seen **192,566 in total Bitcoin outflows** despite downside price momentum.
- The indicator shows the amount of Bitcoin deposited (green) to or withdrawn (red) from all Bitcoin exchange wallets relative to 30 days earlier. As the net position change relative to March accelerates, almost 80,000 Bitcoin were removed from exchanges in April.

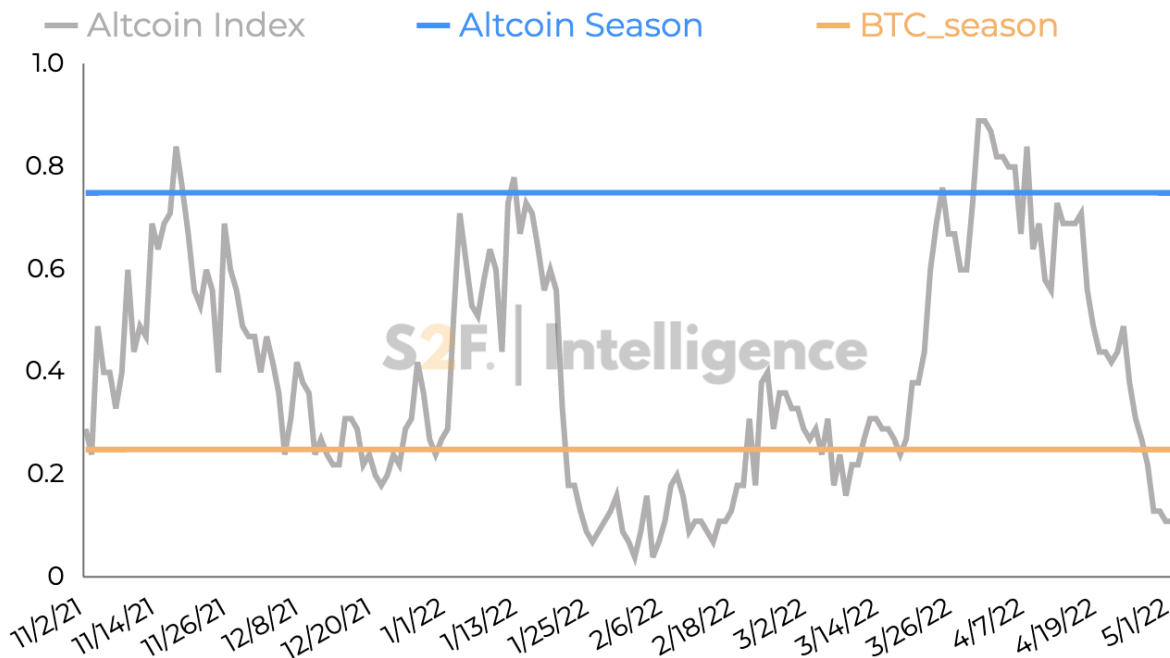
- **Bitcoin fell below the rising trend line it has held since February as it battles macro turmoil and a faltering tech sector.**
- Since BTC attempted to break the **200d MA (gold)** at the beginning of April, it has steadily fallen as the overall market outlook has soured. With price action unable to reclaim the trend line structure, the **50d MA (blue)** will begin to serve as macro-resistance.



- **As network fundamental growth continues and the "Merge" event nears, Ethereum price action has broken its rising trend structure to the downside.**
- Ethereum price action has followed BTC's direction, and the price must now reclaim the previous months-long trend line of support.
- Price could not maintain the \$3k level following the FOMC rally in markets. However, we expect institutional appetite for ETH to increase post-merge, as the asset will adopt attractive yield features that will warrant exposure from fixed-income investors.

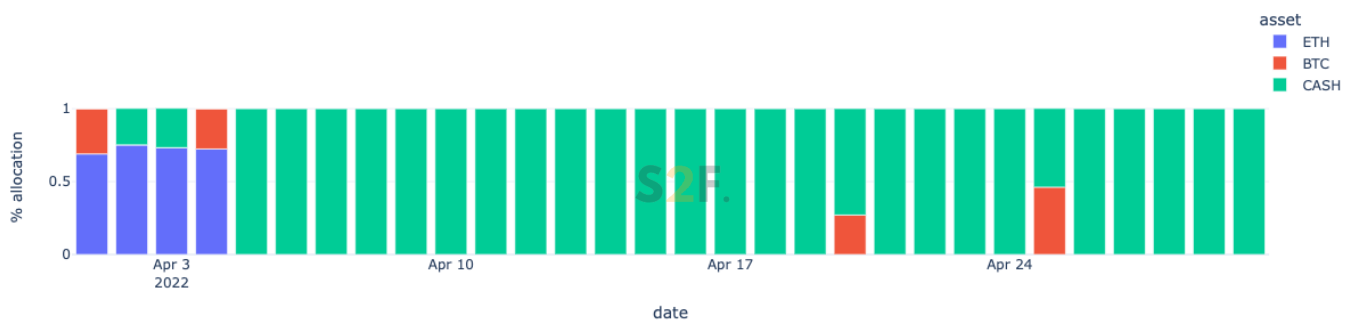


## S2F Alt-Season Indicator



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)

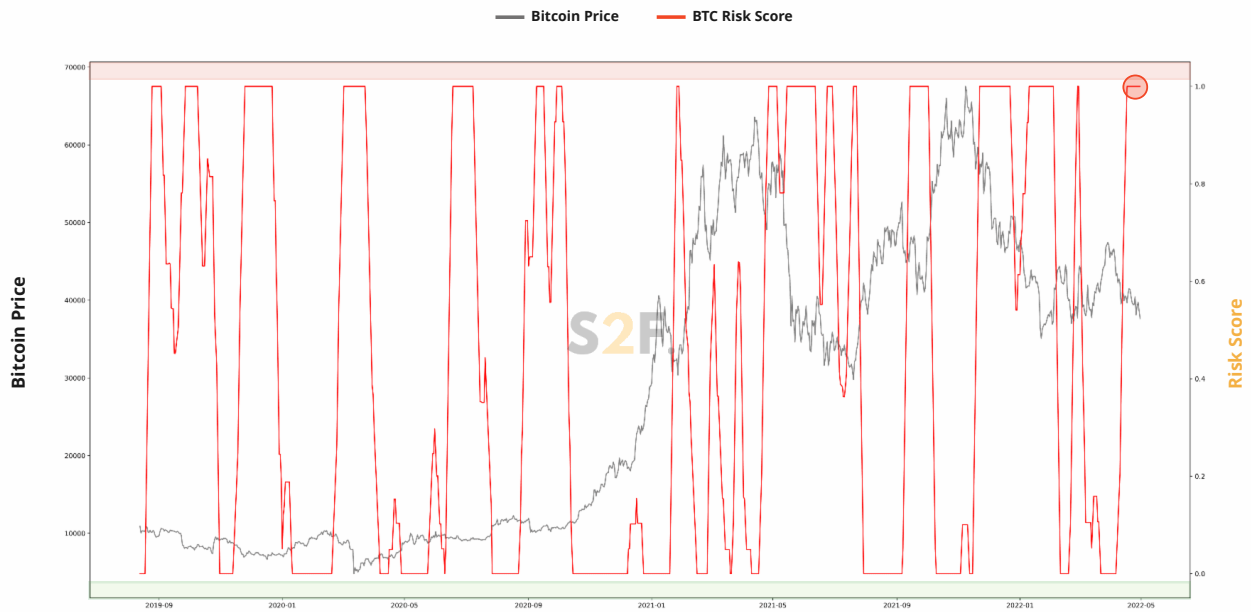


The S2F Momentum Model is a proprietary model that **compares the price momentum of BTC vs. ETH vs. USD** over a rolling window to suggest an optimal allocation of capital to each of these three assets. The entry and exit signals rely on two momentum indicators, one slow and one fast, to help determine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

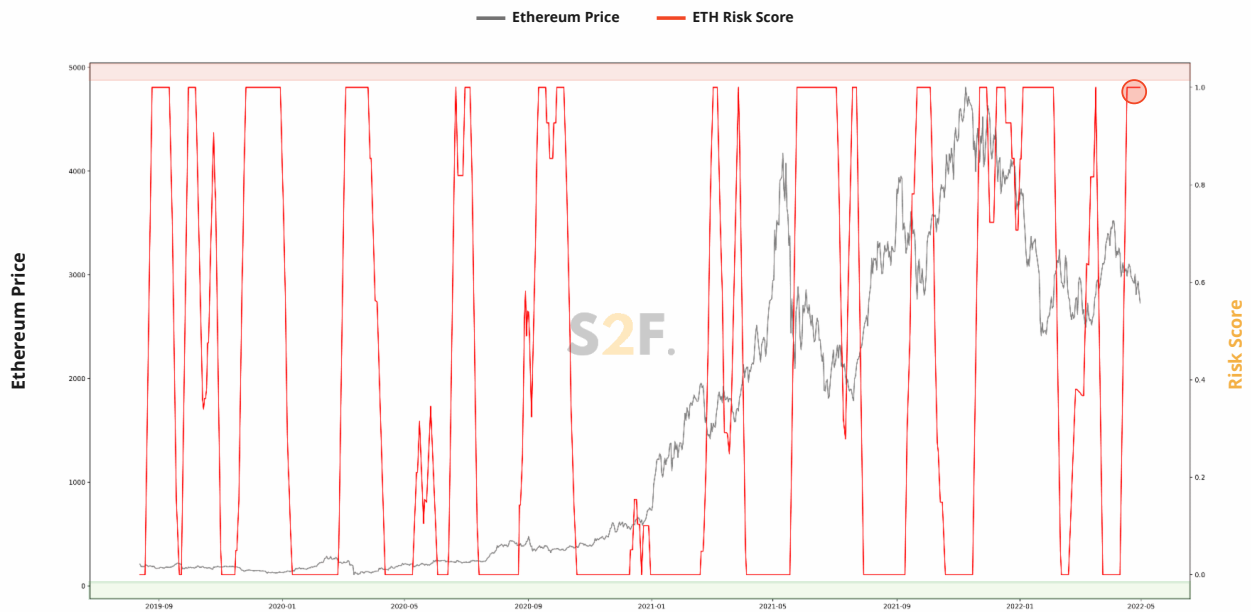
## Delta Risk Scores

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



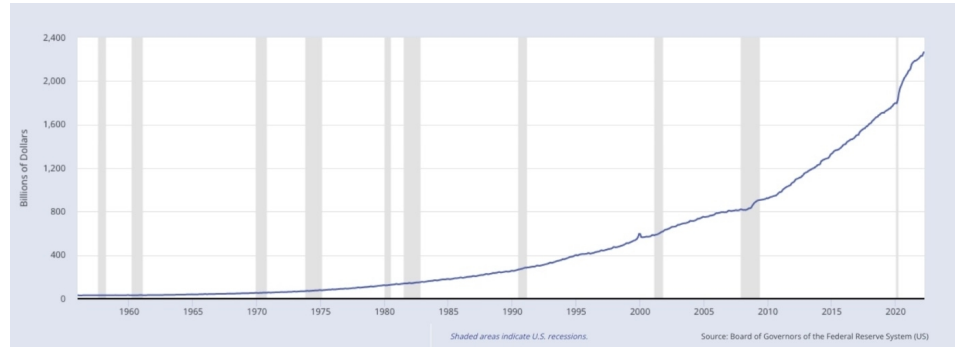
### Ethereum



## Understanding the Bond Market Bubble

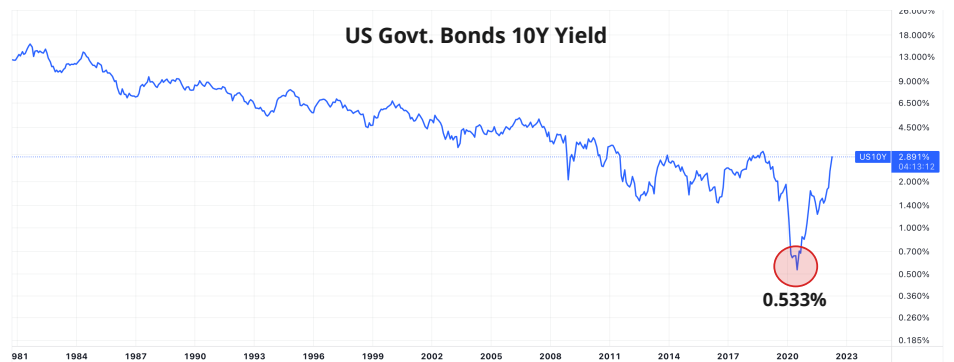
- The Federal Reserve printed approximately \$2.8 trillion in response to the pandemic and started aggressively purchasing domestic bonds.

Total Currency in Circulation (\$USD)



- When a massive player enters the market and starts non-stop buying, bond prices soar, and yields collapse to unprecedented levels. For example, US 10Y Note yielded as low as 54 bps at July 2020 prices.

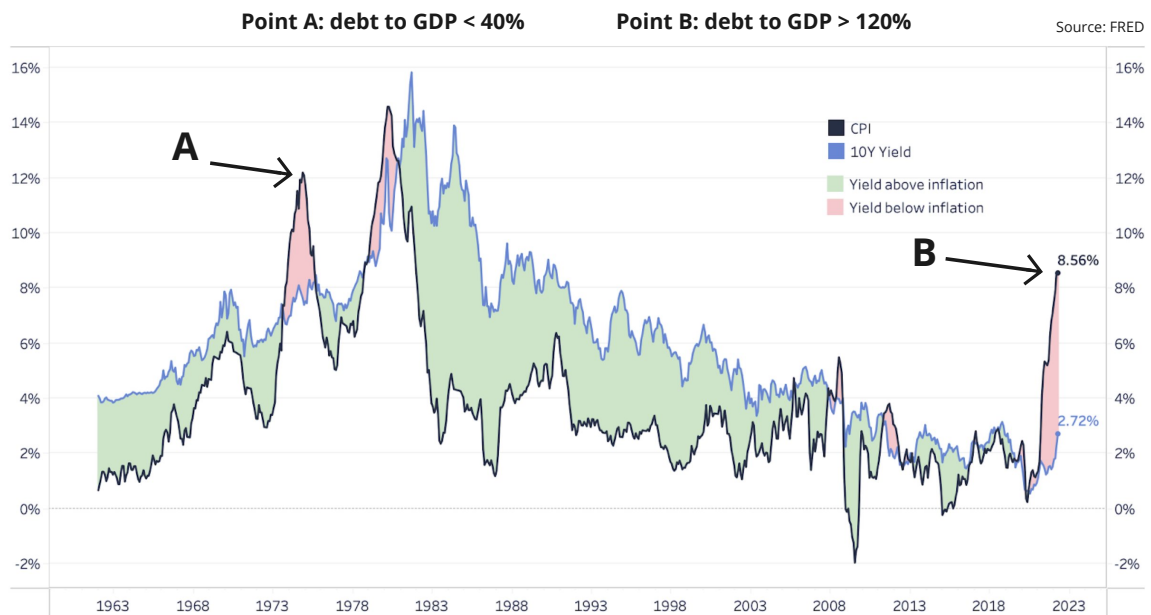
US Govt. Bonds 10Y Yield



- With the US CPI printing, 8.5% at the current 10Y note prices, buyers are "earning"  $2.88 - 8.5 = -5.77\%$  return in real terms (return after inflation).
- Historically a "fair" real yield has been 2%. Bond buyers are getting 7.12% less than the "fair" yield. If we compare today's bond market cap valuations to the same bond market, which has historically produced real yields of 2%, we estimate a current overvaluation of \$2 trillion.

## U.S. CPI YoY Versus 10-Year Treasury Yield

As the (Federal Debt/GDP) >100%, the need for the growth of the economy to outpace U.S. government's liabilities accelerates. If the economy falters in growth, Central Banks may opt to let inflation **run above nominal yields for a sustained period** to repay outstanding debts.





## 60/40 Portfolio Performance



## Yield Curve Control

U.S. Yield Curve Control ahead? The Fed conveniently provided itself with the legitimization for future yield curve control:

- The period from 1942 to 1947 provides evidence that the Federal Reserve can lower long-term rates by committing to keeping short-term rates low.
- This period also shows us additional evidence that direct interventions can reduce long rates in the market for long-term Treasuries.
- The significant difference is that in 1942, 84% of all Federal Reserve liabilities were backed by gold. The U.S. then owned just under a quarter of the world's gold.
- If inflation breaks out further as market treasury yields outpace the Fed's target, it could pressure the Central Bank to purchase the entire stock to control rates. If the Central Bank is forced to resort to these measures of YCC to service its debt in nominal \$USD terms, it could deter other nations from saving in dollars.
- In May, the Fed plans to reduce its balance sheet by allowing maturing bonds to run off, but what if they decide to sell these negative real rate yielding bonds? Who steps in as a buyer of last resort?

## Bitcoin & Digital Assets vs. Inflation Dilemma

The Central Bank's optimistic narrative of transitory inflation can no longer distort the reality that actual yield production from debt asset vehicles is capable of maintaining the current rise of inflation. This inconvenient truth presents a dilemma for global bond markets and central banks worldwide.

- The United States' heavy-handed monetary sanctions toward Russia highlighted the willingness to weaponize US treasuries as foreign reserves, which presents a new paradigm of issues surrounding global demand for future United States debt.
- These policies dissuade investment from foreign entities and encourage denominating economic surplus and savings in alternative hard assets.
- As discussed above, the Federal Reserve's dilemma could leave the alleged independent government agency with no choice but to implement yield curve control instead of defaulting on existing debt.
- Last month's CPI figure was 8.5%, while the US30Y currently yields 3%, but the hard-coded inflation rate for Bitcoin is 1.77%.
- While Ethereum's current inflation rate hovers around 4.5% annually, post-merge markets could witness the first net-deflationary digital asset that offers a yield denominated outside \$USD as fixed income markets continue to underperform actual rates of return.
- Post-merge, Ethereum would resemble a developing market bond that has historically had a low to negative correlation with equities.
- As we enter this new paradigm of disillusionment, we believe the allure of independent assets that possess hard-coded inflation rates while maintaining decentralization warrants interest from global investors and eventually sovereign nations.

### Bitcoin

- Australia approves the first Bitcoin ETF launching the Cosmos Purpose Bitcoin Access ETF, which will invest in the Purpose Bitcoin ETF (held on the Toronto Stock Exchange).
- The Central African Republic has become the second nation to adopt Bitcoin as legal tender.
- Panama passes a bill to give legal status to Bitcoin and will not apply capital gains to the asset.
- Fidelity announces a plan to enable investors to contribute up to 20% per payroll cycle in their 401(k)s to Bitcoin. Fidelity, one of the largest workplace plan providers, is the first primary retirement provider to do so.
- Fort Worth became the first city in the United States to mine Bitcoin. Three S9 mining rigs will run 24/7 in the climate-controlled IT wing of Ft. Worth City Hall.
- The global investment bank Goldman Sachs allowed a borrower to use bitcoin as collateral for a cash loan. Goldman's first bitcoin-backed loan ever created signals that Wall Street is moving further into crypto.

### Ethereum

- Ethereum developers recently completed the second successful merge-shadow fork on April 23rd. All client software survived the sync and transitioned successfully, with only two non-critical bugs discovered.
- More than 12.4 million Ethereum (10%+ of the total circulating supply of Ethereum) are deposited in the ETH 2.0 staking contract.
- Dubai real estate developer Damac Properties announced it now accepts Ethereum as a payment method.
- The popular liquid-staking derivative token, stETH, moves into the top 20 cryptocurrencies by market cap, surpassing more than \$10.9 billion.
- Optimism, the third-largest Ethereum L2 in TVL with \$670 million, announces its native protocol token airdrop.

### Layer 1's

- Jump Capital proposes locking up aUST on the popular lending and borrowing protocol Anchor. Anchor is built on top of the Terra LUNA blockchain and currently has more than \$16.5 billion in total value locked.
- The Solana NFT project, Okay Bears, tops the entire OpenSea trading platform since launching on April 26th. The mint price of the project was 1.5 SOL (\$147) which quickly sold out and now stands at 173 SOL (\$16,350) per NFT.
- The USN decentralized stablecoin officially launched on the NEAR blockchain. Similar to Terra's UST stablecoin burn and mint mechanism, USN can be minted by depositing NEAR as collateral.
- The Tron network announced its plan to launch its protocol native stablecoin, USDD (US Decentralized Dollar), on May 5th.

### Other Headlines

- BlackRock announced its Blockchain and Tech ETF (IBLC) launch to its current iShares product line. The ETF does not directly own cryptocurrencies or digital assets themselves. The iShares investment product is comprised of 41 separate companies designed for investors to be a "gradual entry point" into blockchain exposure.
- A bipartisan set of U.S. lawmakers are re-introducing the Digital Commodity Exchange Act bill to give the Commodity Futures Trading Commission (CFTC) a more significant role in overseeing crypto spot markets.
- The Global Stability Report from the IMF mentions decentralized finance in the Rapid Growth of FinTech chapter. While the IMF did warn of risks surrounding smart contracts, the report ultimately concluded that DeFi is more cost-efficient than traditional finance in developing and emerging markets.
- Popular trading platform Robinhood reported Q1 cryptocurrency trading volumes dropped to \$54 million, down 39% from the same period a year ago and short of the \$56 million expected among analysts.
- German Parliament votes to remove a 10-year holding limit required to be eligible for tax-free crypto staking and lending gains. The revision will allow Germans to sell crypto assets tax-free after one year of staking or lending.

**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.

**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.

**Real Return:** The return an investor receives after the rate of inflation is taken into account. Example: if a bond returns 4% in a given year and the current rate of inflation is 2%, then the real return is 2%.

**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.

**Yield Curve Control :** Yield curve control (YCC) involves targeting a longer-term interest rate by a central bank, then buying or selling as many bonds as necessary to hit that rate target.

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