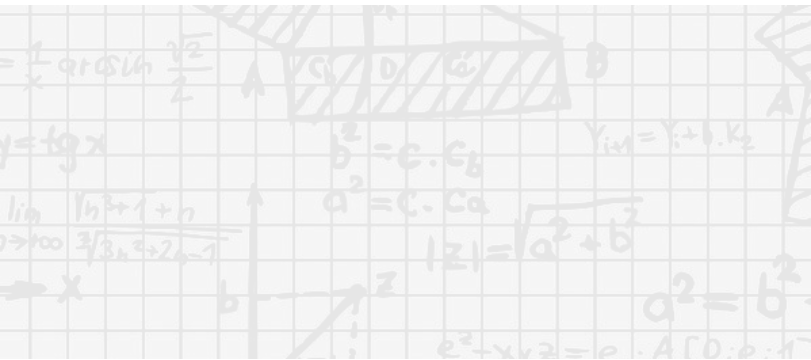


Digital Asset Markets Report

1H March 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

- In the first half of March, the Ukraine-Russia conflict continued to wage on, leading the U.S. and its allies to increase sanctions against Russia. Though Russia retaliated with sanctions of their own, U.S. indices have recovered from February levels but remain flat to negative on a month-to-date basis. On a slightly positive note for the market, Russia and Ukraine have indicated willingness to engage in peace talks, which could soon end the conflict. Realistically, this could draw out over multiple years.
- The Federal Reserve increased its federal funds rate by .25bps. This marked the first rate increase since December 2018. The Fed reiterated their primary focus to combat the 40-year high inflation of 7.9%. Fed officials expect a median fund rate of 1.9% by the end of 2022 before raising rates to 2.8% in 2023. We find this to be very optimistic. They stated their ability to raise rates faster if inflation remains above their median target of 4.3%. Powell noted that the probability of a recession in the next year remains low due to a strengthening economy that can sustain the less accommodative Fed policy. Powell indicated that the Fed's decision to unwind the balance sheet could come as early as May.
- Although there is more clarity about the Fed's intentions, we believe the digital asset market may remain in a state of caution in the near term.



Macro Performance

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- U.S. crude oil peaked at \$125 per barrel but has retreated to below \$100 per barrel. Energy, agricultural, and industrial commodities have increased significantly as sanitation in Russia has impacted supply from the region.
- Gold is up 4.48% on a YTD basis. However, gold recently fell to a two-week low due to optimism around Russia-Ukraine talks and the Fed's latest comments around rate hikes. The U.S. Dollar accelerated losses to the 98.75 regions, off its April 2020 high of 99.02.
- The yield on the 10Y Treasury surged to 2.20% this week due to continued uncertainty around geopolitical events and overall market uncertainty.



On-Chain Analysis

Page 2

- Bear Market Floor:** Indicator measures realized, balanced, and delta price. Currently, the floor model shows a market bottom of \$24.2K. However, it would take an extreme macro risk-off event to test this floor level.
- Supply Delta Metric:** Indicator provides a responsive signal over-extended conditions in markets. Currently, the supply delta metric is signaling we are in a period that favors accumulation.



Technical Levels

Page 3

- Bitcoin** has remained rangebound and is most recently trading between \$38k - \$41k. This is a classic consolidation pattern as we await confirmation of a breakout in either direction.
- Ethereum** remains tightly correlated with BTC and continues to consolidate with muted volatility.



Momentum & Sentiment

Pages 4-5

- pMV momentum indicator:** Indicator just flipped long BTC and ETH in a near 50/50 allocation.
- Alt-season indicator:** Currently, the model indicates a more neutral position between BTC and Altscoins.
- Long-term holders are absorbing coins at the highest rate in Bitcoin's history.
- On-Chain Buying Oscillator:** Showing major accumulation by both whales and retail.



Money Flows & Themes

Page 6

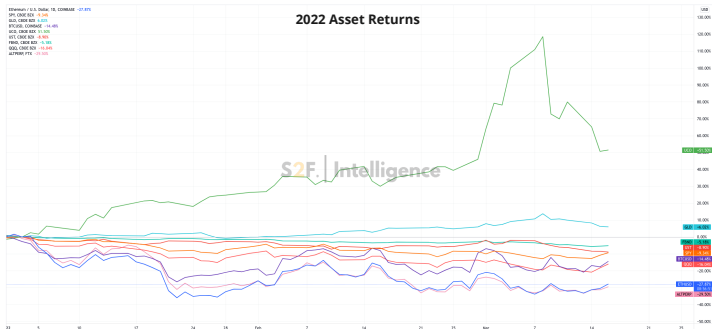
- Russia's war in Ukraine** continues to **impact global commodities markets**. Russia holds roughly 10% of the global oil supply, and many countries rely on fertilizer imports to support the food supply.
- US economic sanctions** are potentially signaling **fragmentation within the global economy**. Weaponizing the Dollar under implied threat of seizure or exclusion to transact could hurt demand for USD.



Notable News

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



Asset	MtD*	Qtd	Ytd	Volatility (annualized)*	Sharpe (annualized)*	Correlation (to Bitcoin)**
Bitcoin	-11.3%	-17.4%	-17.4%	71.78%	-0.95	1.00
Ethereum	-11.9%	-30.5%	-30.5%	83.10%	-1.72	0.94
Altcoin Index	-9.8%	-31.2%	-31.2%	76.53%	-2.10	0.90
SPY	0.9%	-10.8%	-10.8%	21.69%	-2.69	0.71
QQQ	-5.0%	-17.1%	-17.1%	28.70%	-3.17	0.77
GLD	-1.5%	6.3%	6.3%	16.66%	1.90	-0.37
UCO	-8.2%	50.7%	50.7%	82.14%	3.02	-0.53
FBND	-3.2%	-5.4%	-5.4%	5.86%	-5.07	0.59
UST	-6.7%	-8.5%	-8.5%	16.59%	-2.69	0.63

Sources: Glassnode, AlphaVantage

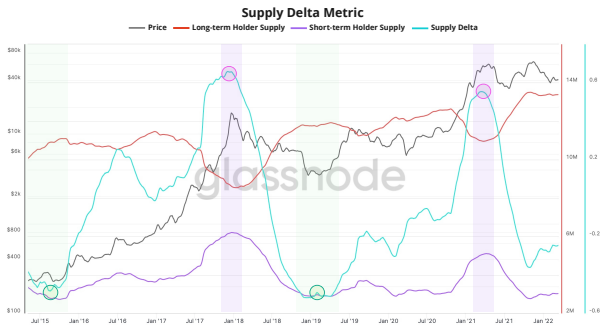
Assets: SPY = S&P500, QQQ = NASDAQ, GLD = Gold, UCO = Crude Oil, FBND = Total Bond Market, UST = 7-10 YR Treasury, Alt-Perp (FTX) = Altcoin Index

*as of March 15, 2022

**last 90 days



- The Bear Market Floor Model helps us identify worst-case scenarios for Bitcoin price action using realized, balanced, and delta price models. **Realized price (green)** determines the average cost of every coin last moved. (Currently \$24.2K)
- The **Balanced Price (orange)** subtracts historic spending behavior from realized price. This results in a rough estimate of what investors paid for their coins before bull run cycles. (Currently \$19.2K)
- **Delta Price (blue)** results from subtracting the average cost of Bitcoin during its lifetime from realized price. Historically it has captured capitulation wick levels during oversold conditions. (Currently \$17K)
- Based on current data, we are still well above the Realized price and believe it would take a significant macro risk-off event akin to COVID March 2020 to reach this level. In any such event, it would mark an extreme buy signal.



- Supply Delta (teal) is a metric that provides a responsive signal to identify Bitcoin market cycle top and bottom conditions. When the supply delta trends to the downside, it can signal accumulation periods. We think we are currently in an accumulation period.
- Long-term holder supply (red) reaches peak distribution during late-stage bull markets as expensive coins are transferred from experienced investors to new euphoric buyers, increasing the short-term holder supply (purple).
- During periods of accumulation, long-term holders will resume the absorption of short-term holder coins. The supply delta metric also trends close to the short-term holder supply near cycle bottoms in Bitcoin's price.

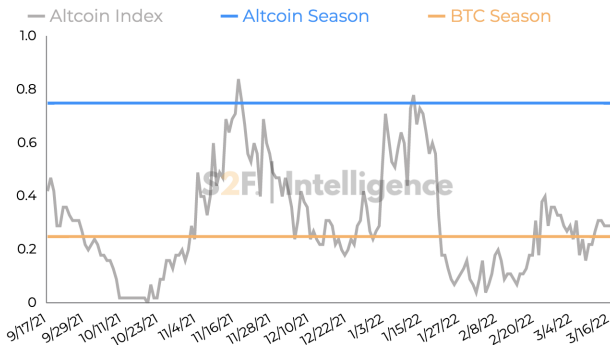
- **Bitcoin has remained rangebound and is most recently trading between \$38k - \$41k.**
- BTC has continued to bounce off the bottom trendline but has also failed to break through the upper level in any meaningful way. This is a classic consolidation pattern as we await confirmation of a breakout in either direction.
- Based on on-chain data and improving macro conditions, we feel the odds of an upside breakout are higher than the downside.



- **ETH remains tightly correlated with BTC and continues to consolidate with muted volatility.**
- While eyeing the psychological level of \$3k, Ethereum has also found support against the lower trendline on the chart below. Since the **50d MA (blue)** crossed with the **200d MA (gold)**, Ethereum has been consolidating upwards.
- With the upcoming ETH 2.0 "Merge" event slated for Q2 or early Q3, we expect ETH to breakout to the upside significantly, assuming global macro conditions do not worsen.



S2F Alt-Season Indicator



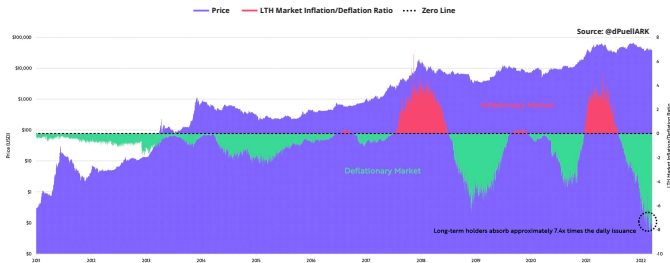
- The S2F Alt-Season Indicator is a proprietary model that measures the capital flows between Bitcoin and a basket of major Altcoins. This indicator is especially helpful in **identifying where strength resides** in the cycle and can **indicate what may happen next**.
- When the Index line (gray) is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

S2F Momentum Model (pMV)



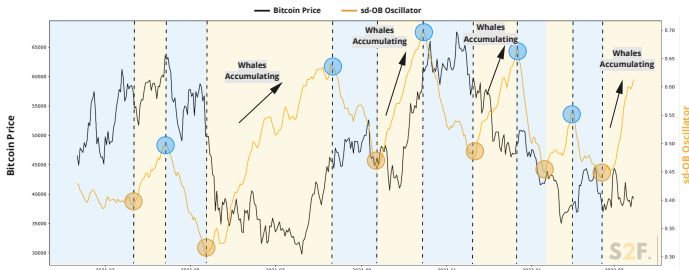
- The S2F Momentum Model is a proprietary model that **compares the price momentum of BTC vs. ETH vs. USD** over a rolling window to suggest an optimal allocation of capital to each of these three assets.
- The entry and exit signals rely on two momentum indicators, one slow and one fast, to help determine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

Bitcoin Long-Term-Holder Market Inflation/Deflation Ratio



- The Bitcoin LTH Market Inflation/Deflation Ratio was introduced by David Puell and Checkmate, two leading On-Chain analysts, on March 15, 2022.
- **This ratio compares BTC's nominal inflation to LTH Market Inflation, determined by the daily supply's annual average of long-term holder change.** When daily supply increases at a greater rate than the rate of LTH accumulation, we see inflationary conditions (red area). When LTH accumulation exceeds the nominal inflation of coins, we experience deflationary conditions (green area).
- The ratio shows that **LTHs are absorbing coins at the highest rate ever in Bitcoin's history.**
- This could indicate that downside volatility from this price level is limited and that we may have already reached a local bottom.

S2F Delta On-Chain Buying Oscillator

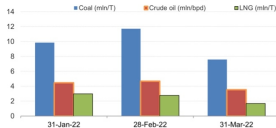


- The S2F Delta On-Chain Buying Oscillator is a proprietary model that helps identify who is currently buying Bitcoin on-chain. A higher reading of the indicator means that whales and retail are accumulating coins, while a lower value means that only retail is buying.
- The chart above shows where most whales start buying (orange circles) and slow down or sell (blue circles). When they slow down their buying habits, the indicator declines until they spot a local bottom and resume accumulation. Smart money stops accumulating before price peaks (black line), and retail FOMO provides them with their exit liquidity.
- A reading above 0.5 indicates that whales might have returned or that we may have passed a local bottom.

Russian Commodities: Impact on Global Economy

- The war in Ukraine is a compounding strain on a global economy that was already battling 40-year highs in inflation.
- Russia holds roughly 10% of the global oil supply**, with 40% of Europe's natural gas coming from Russia. The country's recent seaborne decline in coal, crude oil, liquefied natural gas has had macroeconomic impacts worldwide.
- As the world's largest exporter of wheat, the country also accounts for 18% of the world's potash market, 20% ammonia sales, and 15% urea. Natural gas is also the most expensive part of making nitrogen-based fertilizers.
- Twenty-five countries rely on the Russian Federation for fertilizers with a 30% or more import dependency. Many Eastern Europe and Central Asia countries have over 50% dependency on Russian fertilizers.
- As the global price of oil and other commodities rises, China and other nations could become more incentivized to import Russia's resources.
- Amidst unprecedented inflation levels worldwide, we are witnessing fragmentation within the global economy.

Russia Seaborne Energy Export



Note: March data is as of March 15, but includes expected cargoes to be loaded by month end. REUTERS

Russia Chooses Gold vs US Treasuries

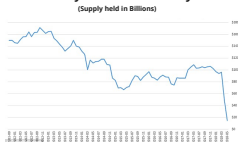
Apolitical Monetary Transactions

- Russia's 2014 invasion of Crimea prompted the United States to impose economic sanctions against Russia. Russia's purchasing pace of gold accelerated relative to a sharp decline in US Treasuries held by Russia. (see chart)
- The recent invasion of Ukraine resulted in the United State's decision to freeze more than \$600 billion of Russia's foreign reserves.**
- As of last June, gold stored at vaults within the territory of the Russian Federation account for almost 22% of these foreign reserves.
- Russia is scheduled to pay \$117 million in coupons on its Eurobonds (denominated in dollars) on March 16th and has already asked Western banks to carry out the transaction.
- The impact of restricting Russia's ability to repay its debt obligations due to a necessity to transact in dollars highlights a need for an apolitical global medium of exchange.**

Bank of Russia Gold Reserves



US Treasury Securities Held by Russia

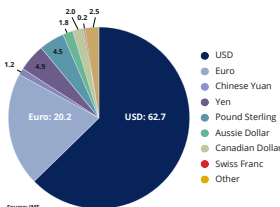


Foreign Exchange Reserves

Impact of Economic Sanctions

- United States' decision to freeze Russia's foreign exchange reserves has alerted nations to a superpower nation's global reserve currency's power.
- Weaponizing the Dollar under implied threat of seizure or exclusion to transact could hurt demand for \$USD.
- We saw Canada's most recent executive order to freeze citizens' bank accounts raise awareness for the need for censorship-resistant alternative mediums of exchange.
- Saudi Arabia is already discussing with China regarding transacting oil sales in the Chinese Yuan. Roughly 80% of global oil sales are done in dollars, and while the Yuan accounts for only 1.2% of foreign exchange reserves, this could impact \$USD demand.
- As governments continue to support the development of central bank digital currencies (CBDC), the need for a 'neutral' global asset like Bitcoin will continue to grow.

Currency Composition of Foreign Exchange Reserves



Source: IMF

Bitcoin

- The number of addresses holding Bitcoin reached a new record of 40 million. The network has added 888,000 new addresses so far in 2022.
- European Parliament voted 30-23 against a proposed rule that would ban proof-of-work mining of cryptocurrencies like bitcoin across the European Union. The economic and monetary affairs committee will keep the provision out of a draft of the proposed Markets in Crypto Assets (MiCA) framework.
- El Salvador's "Volcano Bonds" (Bitcoin bonds) are issued between March 15th and March 20th.
- During the Ukraine war, Internet conditions prompted bitcoin community members to erect **mesh networks**, allowing individuals to relay and receive transactions and other communication reliably.
- Bill Gross, 'King of Bonds' and legendary financier, announces he has invested in Bitcoin.

Ethereum

- Massachusetts Institute of Technology (MIT) ranked the soon to be adopted Ethereum proof-of-stake (PoS) consensus algorithm #6 in the MIT Technology Review for 2022.
- The Ethereum network launched the Kiln testnet. The currently live ETH 2.0 testnet successfully merged the Proof of Stake testnet with the Proof of Work testnet!
- Goldman Sachs announced it is launching an Ethereum fund issued by Galaxy Digital.
- EIP 4844 is proposed to the Ethereum community for integration. The upgrade significantly reduces the cost of Optimistic L2s (estimated up to ~100x reduction in fees, lowering swap prices to ~1 cent).
- ConsenSys raises \$450 million, intending to convert the majority to Ethereum and stake it.

Layer 1's

- Avalanche announces the launch of Multiverse, an up to \$290 million incentive program designed to accelerate and grow Subnet scaling technology.
- Terra (LUNA) protocol surpasses Ethereum to become the second most-staked digital currency with almost \$40 billion in TVL.
- Prolific DeFi developer Andre Cronje and former senior solutions architect Anton Nell announce their departure from contributing to the crypto ecosystem. Since deploying YFI, KP3R, and contributing to Curve, Andre recently launched the much anticipated AMM, Solidly on the Fantom network.
- Solana's premier NFT marketplace, Magic Eden, has captured 95% of NFT t/x share on the Solana blockchain.

Other

- President Biden signed an executive order directing agencies to study cryptocurrencies and develop a government-wide approach to regulating digital assets.
- Online payment processor PayPal and credit card service providers Visa and Mastercard suspend all services in Russia.
- Coinbase blocks 25,000 Russia-linked crypto addresses it believes are tied to illicit activity.
- The payments company, Stripe announced support for cryptocurrency exchanges, on-ramps, wallets, and NFT marketplaces. Stripe recently partnered with FTX and Blockchain.com to help build on-ramp and identity verification features.
- Digital Currency Group authorizes \$250 million buybacks for its Grayscale Trust.
- Eight US Congressman send SEC Chair Gary Gensler a bipartisan letter regarding the SEC's Bitcoin and crypto reporting requests, citing "stifling innovation."

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