Fidelity DIGITAL ASSETS℠

Q2 2024

Signals Report

A quarterly breakdown of key market metrics that could be impacting price and investor sentiment.

Fidelity Digital Assets℠ Research

Quarterly Observation of Current Market Conditions

▸ *Click the boxes to see how we measured the conditions.*

Bitcoin

Short-Term Outlook (<1 year)	Mid-Term Outlook (1–5 years)	Long-Term Outlook (>5 years)
POSITIVE	NEUTRAL	NEUTRAL

Ethereum

Short-Term Outlook (<1 year)	Mid-Term Outlook (1–5 years)	Long-Term Outlook (>5 years)
POSITIVE	NEUTRAL	NEUTRAL

What This Report Is and How to Use It

Digital assets are unique in that they not only generate traditional market signals based on price action, but they also generate an entirely new set of signals based on public on-chain data. These signals can be valuable for all types of investors, but the challenge lies in determining which signals to use, how to match the signal to the correct investment time horizon, and how to interpret the data correctly.

In this report, we have collected what we think are the most reliable signal indicators, grouped them by time horizon, and provided an overall assessment of the conditions for each time horizon. We then provide a breakdown of the signals included in each time horizon and their charts.

Executive Summary: Q2 2024

Bitcoin began the second quarter of 2024 with healthy gains of roughly 70%. However, recent price action near the end of the quarter has resulted in negative returns in the months since. Bitcoin is trading roughly 11% below its starting Q2 price but still 50% higher than at the start of the year. Its price has maintained the longer-term 200-day moving average of $57,484 but fell below the 50-day moving average of $66,556 on June 18.

As of April 19, Bitcoin completed its four-year halving cycle, reducing the block subsidy from 900 bitcoin per day (6.25 per block) to 450 per day (3.125 per block). Consequently, multiple metrics were affected. The Puell Multiple shows miners earning roughly 38% less revenue when compared to the 365-day average. This has resulted in the 30-day mean hash rate falling 4% since the halving occurred.

Additionally, bitcoin continues to leave exchanges. Long-term holders are net selling as the percent of addresses in profit fell from 99% to 88%. The bitcoin yardstick metric signaled an "expensive" bitcoin, something that has not happened since June 2021.

Bitcoin's monthly address metrics also continue to fall while transaction count rises. This may be related to the release of a new speculative protocol on Bitcoin: Runes. The total illiquid supply is slowly falling. However, the supply shock ratio did rise this quarter which signals that most of the traded bitcoin is supplied from the liquid cohort.

Comparatively, ether had been trailing bitcoin with its own healthy gains at the end of Q1 with a 60% return. It quickly closed that gap following an update on spot ether exchange traded products (ETPs). While the SEC approved a rule change surrounding the requirements to list new products, individual issuers will still need to receive the SEC's approval of their ETP registration statements detailing investor disclosures prior to trading. Following this news, ether now sits alongside bitcoin's YTD gains of 50%.

Over the past quarter, the Ethereum network experienced its highest inflationary period, with approximately 111,000 ether added to the total supply. This equates to an annualized inflation rate of

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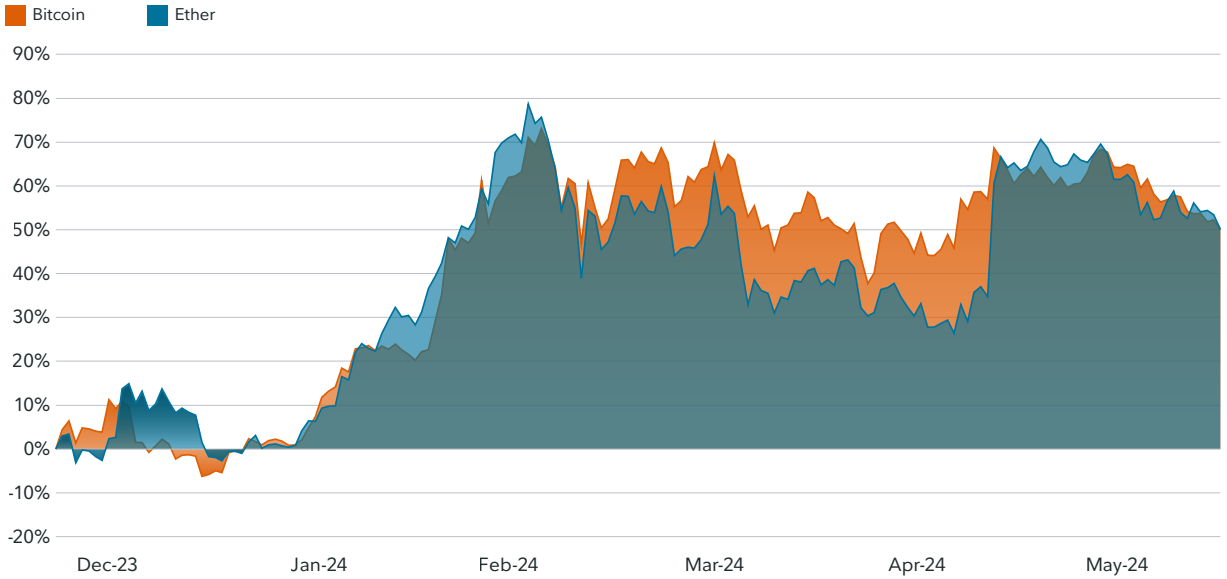
Executive Summary: Q2 2024 (continued)

0.37%. While dramatic fluctuations in ether's supply are unlikely in the short- to medium-term, the growing preference for lower-fee Layer 2 platforms and increasing staking demand suggests that inflationary quarters may become more frequent.

The network's validator count has seen a 5% increase since April, the same month that Ethereum reached the milestone of one million validators. The recent introduction of restaking to enhance the utility of staked ether could further boost staking demand, especially if this new security model proves successful.

Following the Deneb-Cancun upgrade, the adoption of Layer 2 platforms has been impressive, with Layer 2 transactions increasing by around 20% this quarter. While the surge in transaction counts should be viewed cautiously due to the common practice of incentivizing activity with airdrops, the success of the Layer 2 space could be a positive indicator for the future of the Ethereum network.

Bitcoin and Ether Returns Compared YTD



Source: Coin Metrics, 06/23/24

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Measurement Breakdown—Bitcoin

Short-Term (<1 year) — **Overall Condition: POSITIVE**

NAME	COMMENTARY	CONDITION
Is Price Trading Above the 200-Day Moving Average?	Yes, maintained position since October 16, 2023	positive
Golden Cross or Death Cross?	Maintained golden cross formed on October 30, 2023	positive
Price > Realized Price	Yes, 69% higher than realized price	positive

Mid-Term (1–5 years) — **Overall Condition: NEUTRAL**

NAME	COMMENTARY	CONDITION
NUPL Ratio	Remains in "Belief" zone	positive
MVRV Z-Score	Between "Undervalued" and "Overvalued" but not incentivizing extreme selling	neutral
Reserve Risk	Maintaining a healthy ratio	positive
Stock-to-Flow	Bitcoin's price is heavily discounted, according to this model	positive
Puell Multiple	Miners' returns are 38% lower after the halving	negative
Hodler Net Position Change	Long-term holders are adding to sell pressure	negative
Addresses in Profit	88% of addresses are in profit, which could incentivize selling	neutral
Bitcoin Yardstick	The yardstick signaled an "expensive" bitcoin, last seen in June 2021	negative
Bitcoin Price Phases	Currently in the "Appreciation" phase with some instances of acceleration	positive

Long-Term (>5 years) — **Overall Condition: NEUTRAL**

NAME	COMMENTARY	CONDITION
Price > 200-Week	Yes, price is in a healthy position, 55% above the 200-Week	positive
Monthly Address Metrics	Two of three metrics are trending lower	negative
New Address Momentum	Users are not demanding block space as much as Q4 2023	negative
Liquid vs. Illiquid Supply	Illiquid supply fell 1% over Q1 while the supply shock ratio rose	neutral
Balance ≥ 0.1 BTC	Positive trend of growth, new all-time high in May	positive

Measurement Breakdown—Ethereum

Short-Term (<1 year) — **Overall Condition: POSITIVE**

NAME	COMMENTARY	CONDITION
Is Price Trading Above the 200-Day Moving Average?	Yes, maintained positive positioning since October 29, 2023	negative / neutral / **positive**
Golden Cross or Death Cross?	Maintained golden cross formed on November 21, 2023	negative / neutral / **positive**
Price > Realized Price	Yes, 67% higher than realized price	negative / neutral / **positive**

Mid-Term (1–5 years) — **Overall Condition: NEUTRAL**

NAME	COMMENTARY	CONDITION
NUPL Ratio	Hovered between "Belief" and "Optimism" zones. Standing well below the "Greed" zone, yet overall market conditions may suggest a possible decrease in the peak NUPL score	negative / **neutral** / positive
MVRV Z-Score	Between "Undervalued" and "Overvalued" but not incentivizing extreme selling	negative / **neutral** / positive
Percent in Profit	Slight decrease QoQ from 91% to 85%. Most network participants may have some incentive to sell. However, the growing trend of staking is likely to raise the lower limit of this metric	negative / **neutral** / positive
Pi Cycle Top Indicator	Entered the "Heating Up" zone, which is typically seen in the early stages of bull cycles. The approach to this zone seems to be extending with each cycle over time as overall volatility comes down	negative / neutral / **positive**

Long-Term (>5 years) — **Overall Condition: POSITIVE**

NAME	COMMENTARY	CONDITION
Monthly Address Metrics	Small decline in Q2 2024, still following a longer-term upward trend	negative / **neutral** / positive
Layer 2 Transaction Count	Layer 2 transactions grew at least 20% signifying continued success of the rollup-centric roadmap	negative / neutral / **positive**
New Address Momentum	Shorter-term and longer-term averages converging shows steadier growth	negative / neutral / **positive**
Staking by the Numbers	Validator count was up 5% in Q2, continuing its steady climb. The next Ethereum upgrade will likely feature an EIP to reduce the number of validators, and therefore, Ethereum's bandwidth requirements	negative / neutral / **positive**
Net Issuance and Burn Rate	Q2 was Ethereum's highest inflationary quarter to date which equates to an annualized 0.37% increase in supply	negative / **neutral** / positive

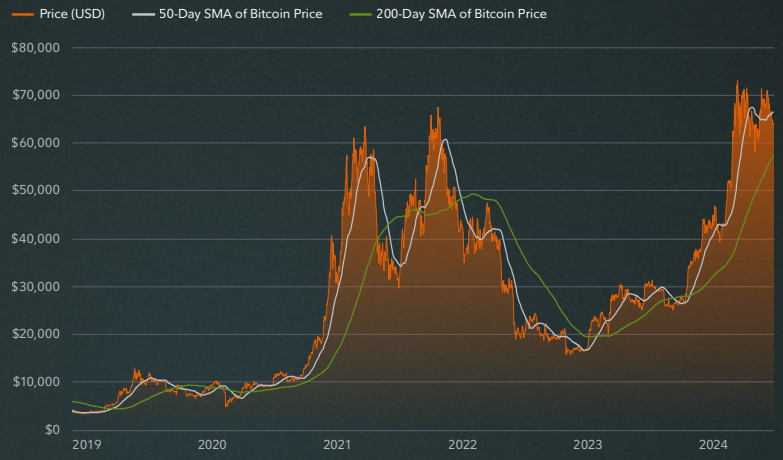
Bitcoin Data to Watch

Bitcoin Fights to Maintain Short-Term SMA

Bitcoin's daily price broke through the short-term moving average (50-day SMA) on June 18. However, the price remains roughly 9% above the longer-term moving average (200-day SMA). The "golden cross" has been maintained after forming in October 2023. Bitcoin's price currently finds itself 24% below its new all-time high of just over $73,000. While many investors may consider Bitcoin in a bull market, significant pullbacks like this are common. Historical data shows multiple 20% or more retracements while bitcoin is in price discovery mode.

The 200-day moving average is viewed as support when the price is above it and viewed as resistance when the price is below it. As of the end of Q2, bitcoin's price fell a total of 11%. The next support level (200-day SMA) is hovering around $57,000.

Bitcoin: 50-Day vs. 200-Day vs. Price



Source: Glassnode, 06/23/24

Realized Price (Bitcoin)

The realized price is a metric that aims to capture the average cost basis of all current token holders. By capturing a token's last trade price, tokens that are presumed to be lost can be discounted. Bitcoin's realized price is around $30,600 at the close of Q2. The realized price has maintained a position of support since January 13, 2023. As of June 23, 2024, bitcoin's price is approximately 69% above its realized price. This indicates that the incentive to start taking profits persists, which may continue to cause more volatility in the near term. While profit-taking may cause quick price pullbacks, the retracements may be short-lived if demand outweighs selling pressure.

An additional analysis can be created using a realized price metric grouped by age. Using this approach, everything older than three months is disregarded rather than considering the entire Bitcoin UTXO set (Realized Price). This metric will closely mirror the short-term SMA but offers more insight into actual acquisition prices rather than a moving average of the daily closing prices. The important short-term support levels to watch are $65,774 (average short-term realized price (< three months)), $66,556 (50-day SMA), $57,484 (200-day SMA), and $27,890 (realized price).

Bitcoin: Realized Price vs. Price

Source: Glassnode, 06/23/24

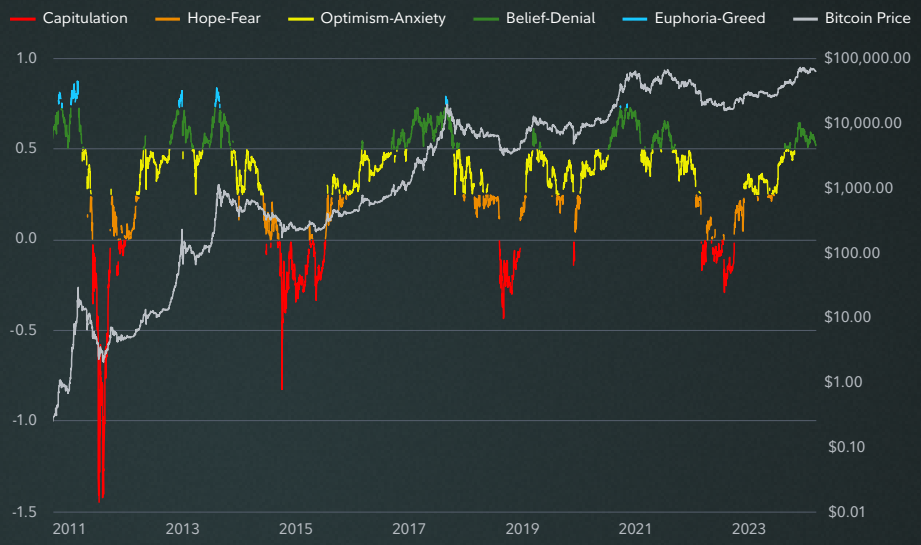
Net Unrealized Profit/Loss (NUPL) Ratio (Bitcoin)

Historically, this metric does a good job of assessing overall market sentiment. Bitcoin's NUPL score offers insight into the relative level of unrealized profits, or losses, visible on-chain at any given time. A NUPL score below zero, previously witnessed in Q4 of 2022, implies net unrealized losses and has historically signaled periods of capitulation. A NUPL score over 0.50 indicates large unrealized profits held on-chain, which may suggest some profit-taking could be likely.

This ratio continued to float around the "Belief-Denial" zone throughout Q2. The halving in April seemingly had little effect on investors. However, recent price action may soon flush out any remaining investors hoping to realize profits before they disappear. This would raise the cost basis of new buyers and would return this score back to the "Optimism-Anxiety" zone. The "Optimism-Anxiety" zone has historically been an opportune accumulation period for investors.

Read more here.

Bitcoin: Net Unrealized Profit/Loss (NUPL)



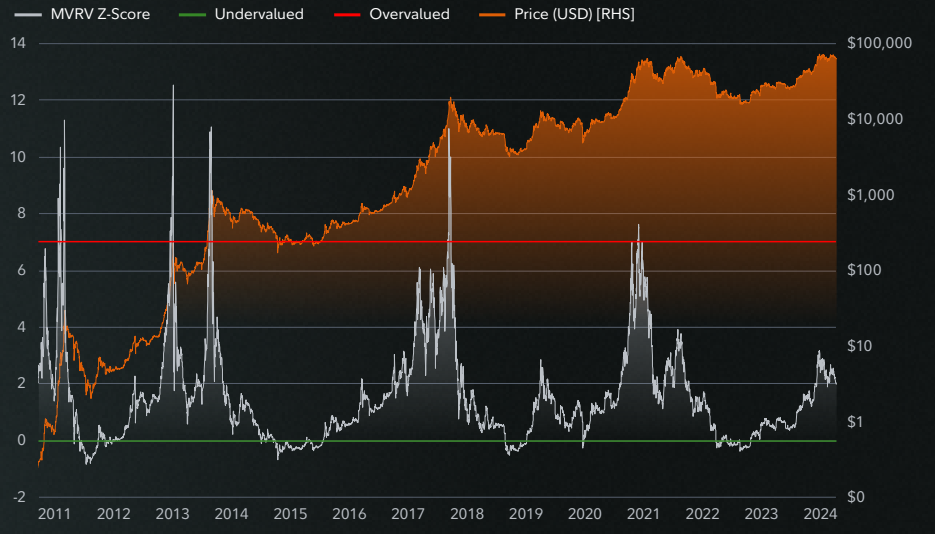
Source: Glassnode, 06/23/24

MVRV Z-Score (Bitcoin)

The MVRV Z-Score is used to assess when bitcoin is over/undervalued relative to its "fair value." When the market value is significantly higher than the realized value (acquisition price), it has historically indicated a market top (red zone), while the opposite has indicated a market bottom (green zone).

The MVRV Z-Score fell throughout the second quarter as bitcoin's price dropped from $71,355 to $63,200. The MVRV Z-Score remains in a relatively healthy position because the incentives to take profit here are not yet extreme. Additionally, we have moved closer to the "Undervalued" zone but are generally between the two extremes. Therefore, we see this indicator as currently "neutral." If price reverses throughout Q3, investors should be wary of this metric because profit-takers will be looking at larger profit margins. As demonstrated toward the end of the second quarter, sudden sell pressure can cause downward volatility.

Bitcoin: MVRV Z-Score



Source: Glassnode, 06/23/24

Reserve Risk (Bitcoin)

Reserve risk is used to assess the confidence of long-term holders relative to the native coin's (bitcoin) price at a given point. When confidence is high and the price is low, there is an attractive risk/reward to invest (the Reserve Risk is low). When confidence is low and the price is high, the risk/reward is unattractive (the Reserve Risk is high).

Reserve risk has been slowly climbing its way out of the low-risk zone since late 2023. While this metric has increased the gap between itself and the low-risk zone, we think bitcoin remains relatively lower-risk because there are currently significant tailwinds. Following the successful halving of the bitcoin subsidy, there are fewer new coins minted (supply). The acceptance and launch of various spot bitcoin ETPs continue to experience significant investor inflows. This may indicate that investors in the traditional markets are continuing to accumulate regardless of price.

Stock-to-Flow (Bitcoin)

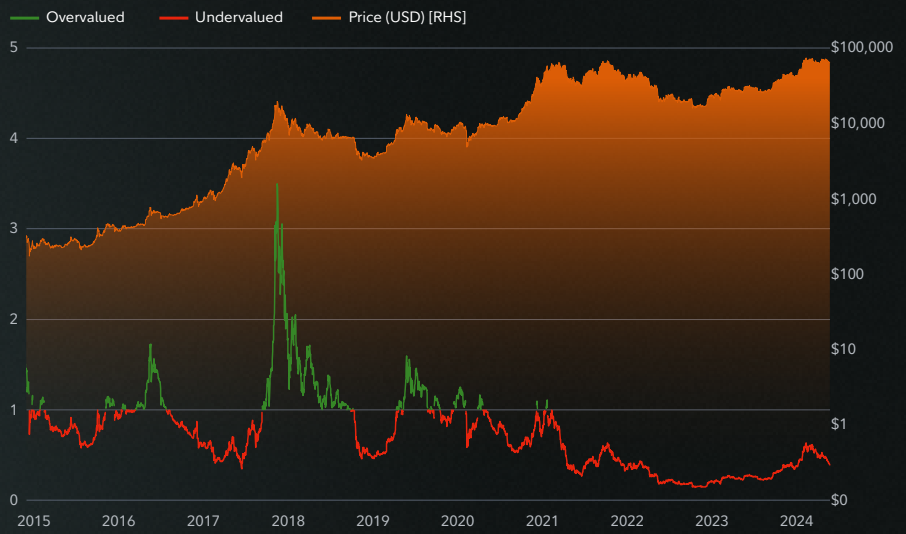
The Stock-to-Flow (S/F) Deflection is the ratio between the current bitcoin price and the S/F model. If deflection is ≥1, it means that bitcoin is overvalued according to the S/F model. Otherwise, it is undervalued. The Stock-to-Flow model may be less relevant today because bitcoin's inflation rate is already in the low single digits—and still decreasing. However, this model may still be interesting when also considering the other metrics.

By this metric, bitcoin had been considered undervalued throughout 2022, 2023, and 2024. According to this model, this indicator's expected bitcoin price is approximately $161,201 as of June 23, 2024.

Bitcoin: Reserve Risk

Source: Glassnode, 06/23/24

Bitcoin: Stock-to-Flow Deflection vs. Price (USD)



Source: Glassnode, 06/23/24

Puell Multiple (Bitcoin)

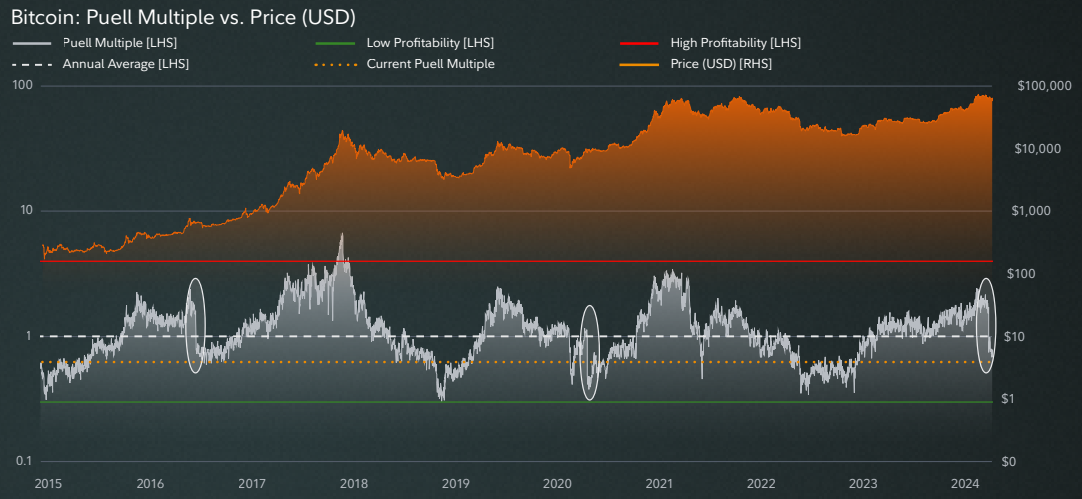
Created by David Puell, the Puell Multiple shows when miner profitability is low compared with the previous year. When the Puell Multiple is high, it means that mining revenue is higher than last year's average. Historically, when this metric is in the high red zone, it has generally corresponded to cycle tops.

This metric currently suggests that miner profitability is roughly 38% lower than the last 365-day average. This means that miners that are selling today could be realizing losses. The halving that occurred in late April combined with the relatively stagnant prices will continue to put pressure on the existing miners.

While mining efficiency is expected to rise, any older machines in use will be struggling to maintain their hash rate. With the halving's occurrence, miners saw a 50% reduction in their revenue overnight. Highlighted in the chart below are the past three halvings to demonstrate how this event has impacted miners historically.

Additionally, hash rate continued to slowly drop offline with the 30-day mean falling 4.3% over the last 65 days. Mean hash rate fell from roughly 615 EH/s on the day of the halving to roughly 589 EH/s toward the end of Q2.

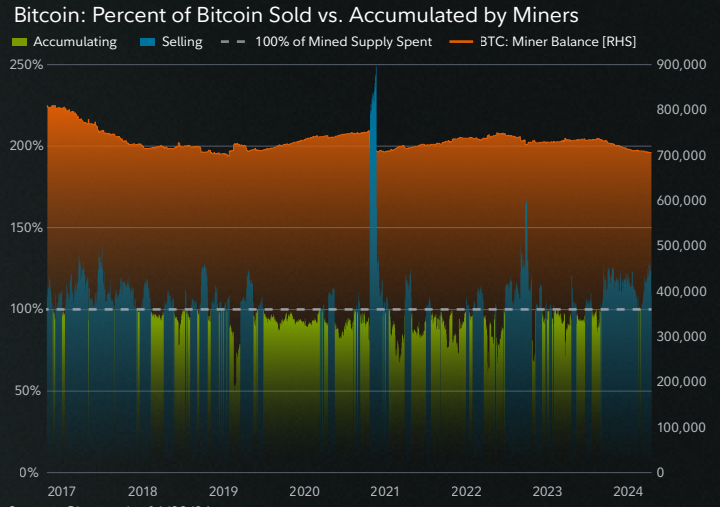
Explore more about the halving here and the economics from a miner's perspective here.



Source: Glassnode, 06/23/24

Percentage of Bitcoin Sold vs. Accumulated by Miners (Bitcoin)

Miners were able to briefly accumulate some bitcoin but eventually started selling more than 100% of the block subsidy (3.125 bitcoin) after the halving. Throughout Q2, miners sold an average of 111% of the subsidy, about 6% less than the previous quarter. In Q2 2024, miners continued to sell more than they mined. However, total reserves have only fallen 0.6%.

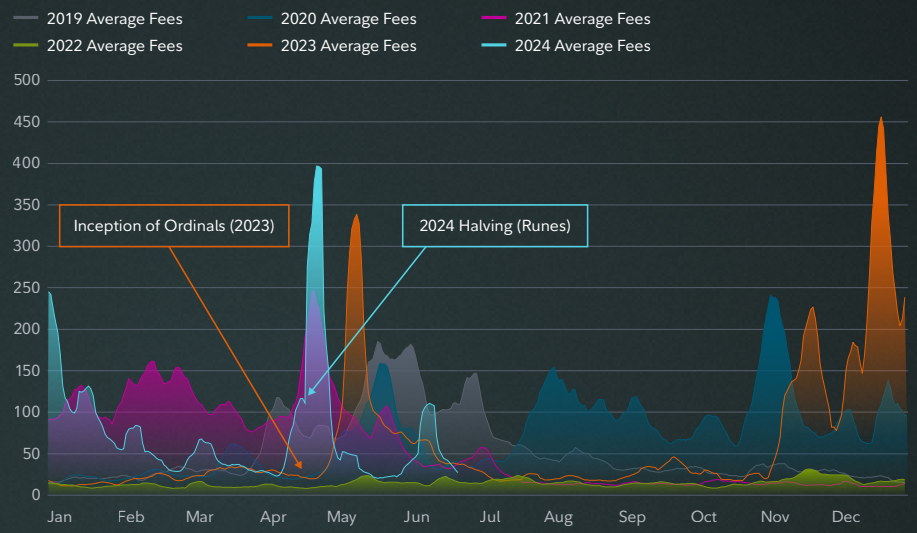


Source: Glassnode, 06/23/24

Percentage of Bitcoin Sold vs. Accumulated by Miners (Bitcoin) continued

Historical median fees are also seen here. Miners experienced extremely elevated fees during the halving compared with the last quarter, previous years, and the inception of ordinals which occurred in 2023. These high fees enabled miners to briefly accumulate bitcoin and add to their reserves. This may be why miners are able to continue to sell without significantly impacting their reserves this quarter.

Bitcoin: Average Fee sat/vB (7-Day SMA)



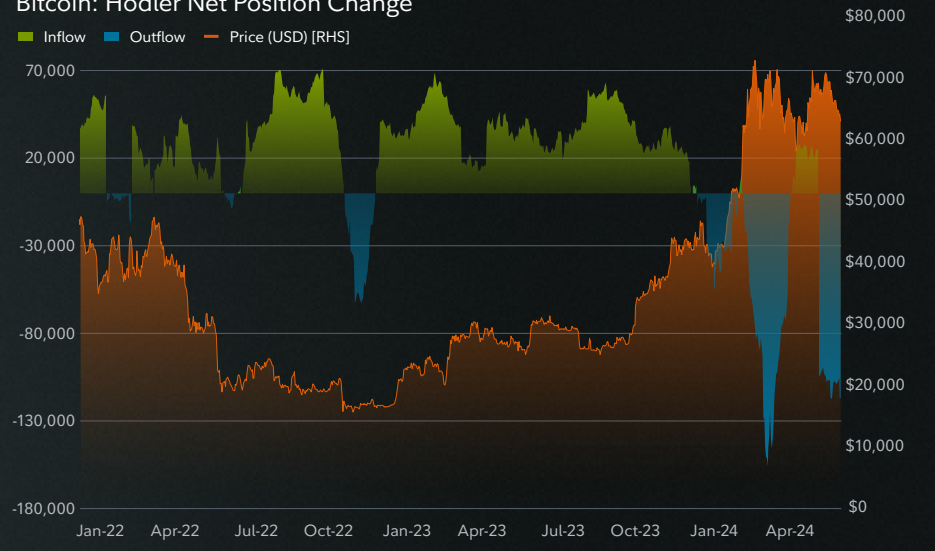
Source: Glassnode, 06/23/24

Hodler Net Position Change (Bitcoin)

Hodler net position change shows the monthly position change of long-term investors, known in Bitcoin culture as "Hodlers" or "HODLers." It indicates when long-term investors sell (negative) and when they accumulate (positive) net-new positions.

The average net position change from Q1 to Q2 2024 continued to increase, adding another 18% to the net outflow. Outflows in Q2 increased an average of 7,769 BTC, leading long-term investors to move 50,376 BTC out of their wallets. These long-term wallets had a moment of net buying in late April and early May but have since continued to have heavy outflows. It is not certain if this trend will continue. However, the price is relatively similar to the initial price at which this cohort changed sentiment and started buying again. During the net-buying time the price ranged from $58,295 to $71,409, meaning investors may start accumulating again soon.

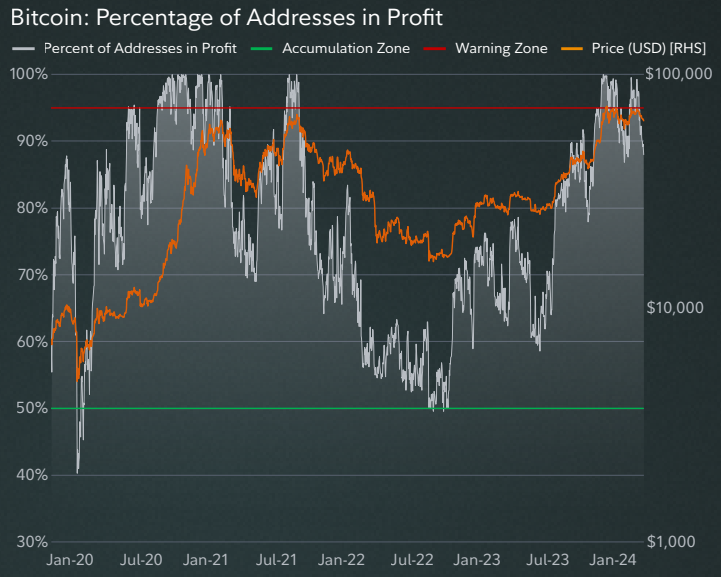
Bitcoin: Hodler Net Position Change



Source: Glassnode, 06/23/24

Percentage of Addresses in Profit (Bitcoin)

The percentage of addresses in profit indicates unique addresses with funds that have an average buy price that is lower than the current price. "Buy price" is defined as the price at the time coins were transferred to an address. The percentage of addresses in profit has fallen from roughly 99% at the beginning of the quarter ($71,354) to just under 88% near the end of Q2. As mentioned in the Q1 2024 Signals Report, a sell-off could become more likely as traders and newer investors look to realize profits as the number of addresses in profit grow. WIth a majority of investors in profit, it would not be unreasonable to see profit taking at current prices. Previously, when this metric reached 99.8% at a price of $73,104 it promptly fell 15% in less than a week. Toward the end of Q2, 87.96% of investors are in profit at a price of $63,216.



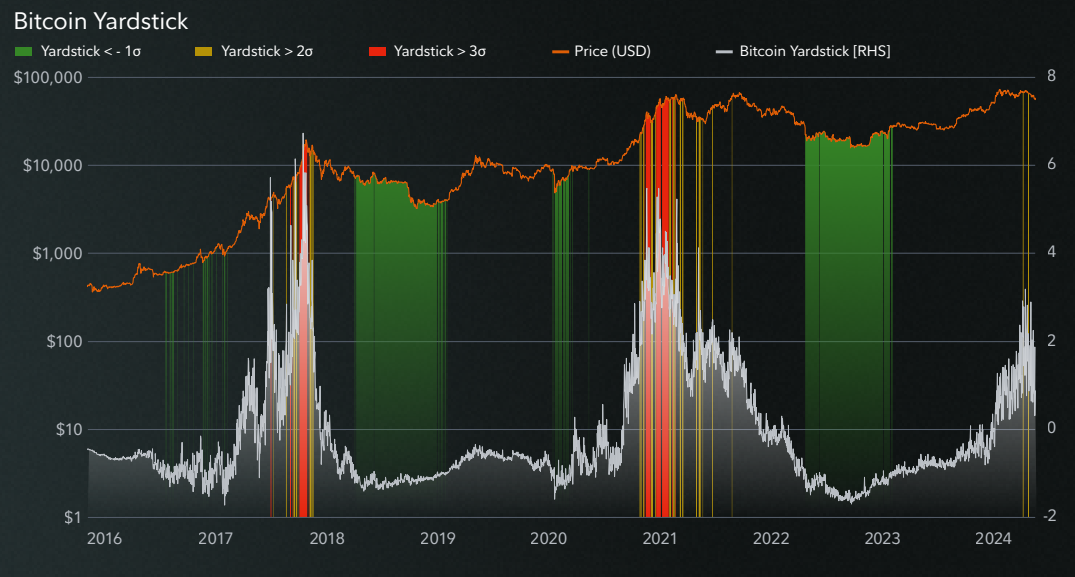
Source: Glassnode, 06/23/24

Bitcoin Yardstick

The Bitcoin Yardstick, or Hashrate Yardstick, is a similar concept to the Price-to-Earnings (PE) Ratio. However, instead of stock price divided by company earnings, it calculates bitcoin's total market cap divided by its hash rate (a measure of energy being expended to secure the network). The idea is that the lower the ratio, the "cheaper" bitcoin looks from an investor standpoint, just as a lower PE ratio can be interpreted as a "cheap" or undervalued stock.

Currently, the Yardstick indicates that bitcoin has remained between zero and four deviations from the mean throughout Q2. According to this metric, there was only one day in Q2 where bitcoin was considered "expensive" when compared to the network's hash rate—June 5. On that day, price closed at $71,114. Throughout Q2, there were 14 other days that fell just below that mark. The last time the yardstick flashed an "expensive" purchase cost was June 2021. During the other 82% of Q2, the yardstick fluctuated between zero and two deviations of the mean, with a majority spent between one and two deviations of the mean.

Reminder: Above two standard deviations of the mean indicates a relatively expensive bitcoin price compared to the network's energy output. This should be carefully considered because a higher standard deviation of the mean has historically preceded bull markets. This is most likely a



Source: Glassnode, 06/23/24

Bitcoin Yardstick continued

precursor to bull markets because upward price volatility outpaces the hash rate. Therefore, when price rises quickly, the yardstick will measure as "more expensive" due to the denominator's (hash rate) slowness to react. The inverse is also true when price falls—a "cheaper" bitcoin signal will show.

When the yardstick indicates an "expensive" price of bitcoin, it can show when miners are continuing to expend energy even though they may be mining at a loss but are expecting price to move higher. However, this is not always the case as we are currently seeing hash rate come offline in response to the impact of the halving. The 30-day mean hash rate is down 4% since April 19. It is important to note the flash of yellow in the chart above titled "Bitcoin Yardstick" seen throughout the end of May and June so far, and how historically, a pattern forms. This could be indicating the market is heating up, causing more price volatility.

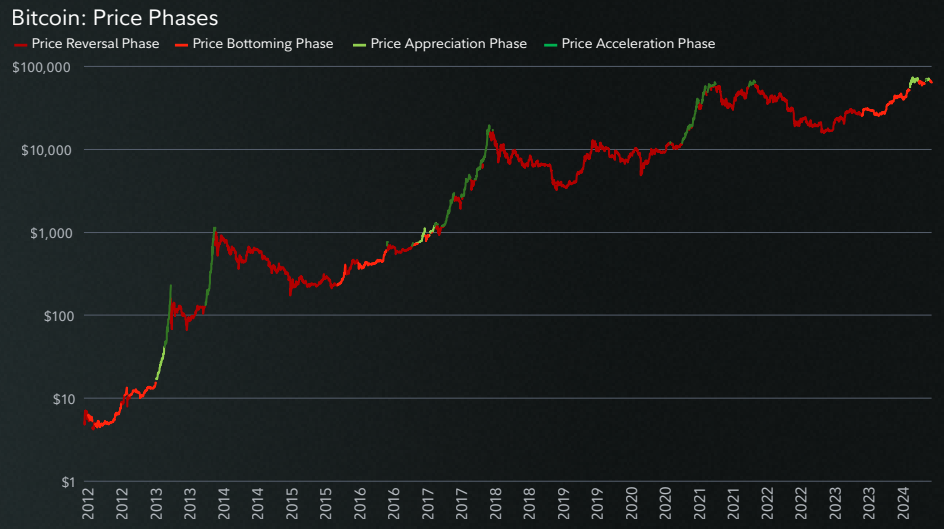
Bitcoin Price Phases

Bitcoin's price is known to be volatile. Here on the Fidelity Digital Assets Research team, we are constantly looking for new ways to view metrics. Zack Wainwright, from the Research team, has created a new metric known as "Seller Energy," which combines bitcoin's one-year realized volatility with the on-chain metric "percentage of addresses in profit" to showcase the different phases the market may be experiencing.

Using this metric, we can highlight the relative price phases the bitcoin market goes through. We see that we entered the "Price Appreciation" phase in March 2024. Throughout the second quarter, we experienced a period where the percentage of addresses in profit remained above 95%, while the one-year realized volatility remained below its 5th percentile.

Periods of high profit and low volatility have been historically fleeting for bitcoin as new highs typically give way to increased volatility to the upside. In May, we might have caught a glimpse of this shift, as we experienced three days of high profit and high volatility, also known as the Price Acceleration Phase. However, we remain in the Price Appreciation Phase. Like a coiled spring, volatility eventually occurs. Timing exactly when that will be is difficult.

Read more about this metric here.

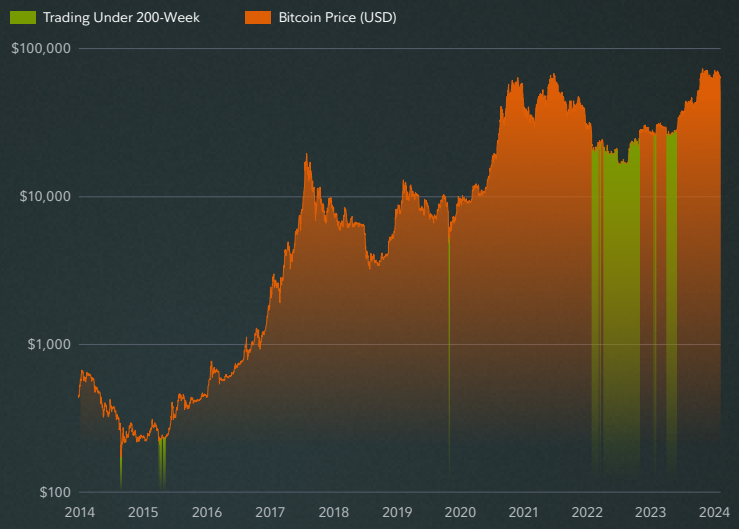


Source: Glassnode, 06/23/24

200-Week Moving Average (Bitcoin)

The 200-week simple moving average (SMA) is a long-term indicator and, until the 2021 bear market, bitcoin had rarely traded below it. Near the end of Q3 2023, bitcoin eclipsed this metric, turning it into support. Since then, bitcoin's price has maintained the gap from the 200-day SMA. Bitcoin's price near the end of Q2 sat firmly above the 200-SMA of $36,094, a 55% difference.

Bitcoin: Price vs. the 200-Week SMA



Source: Glassnode, 06/23/24

Monthly Address Metrics (Bitcoin)

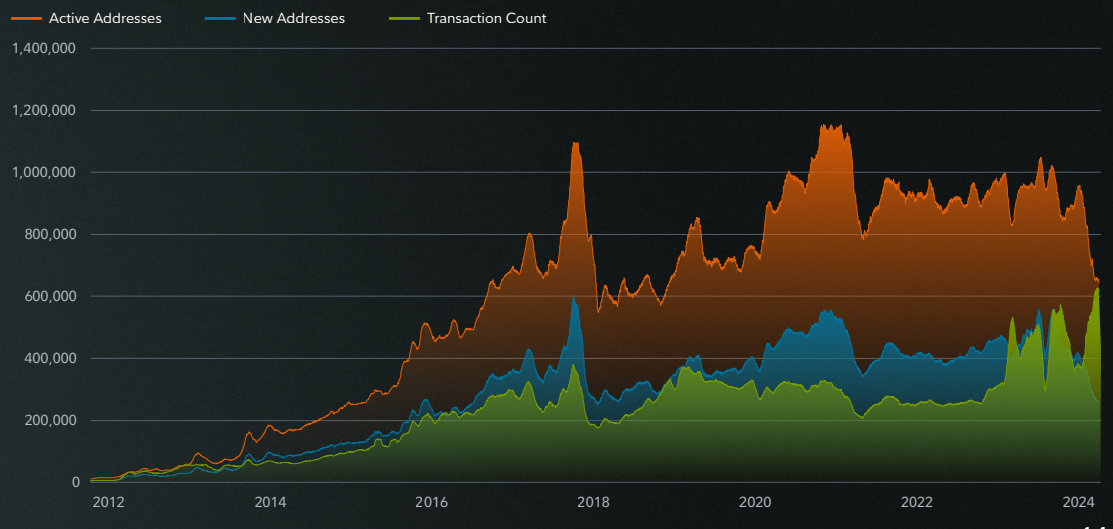
Charted below are the monthly metrics for active addresses, new addresses, and transaction count. Active addresses and new addresses have continued to fall throughout Q2, roughly 31% and 35% respectively. However, Bitcoin's transaction count has increased significantly, up 64%. A familiar pattern seems to be returning as active addresses and transaction count break their correlation once again.

Typically, these three metrics move hand in hand as new transactions usually imply new addresses and thus active addresses. However, with the introduction of Ordinals in May 2023, this relationship was broken.

One understanding of this phenomenon is that when this pairing is broken it points toward an increase in speculative activity surrounding both BRC-20 tokens and runes. Because this activity does not inherently need to be private, transactions do not necessarily beget new addresses.

This theory also aligns with the aligns with the Bitcoin: Average Fee chart showing the inception of BRC-20 tokens and runes and their impact on the fee environment. In addition to this theory, runes are a relatively niche digital asset. Since higher transaction fees push out lower time preference users, this could also cause transaction count to rise while the other two metrics fall.

Bitcoin: Monthly Metrics

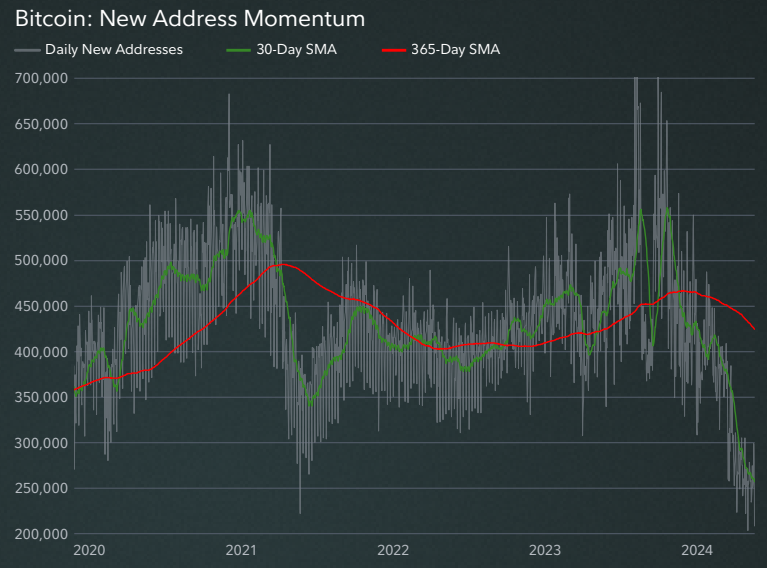


Source: Glassnode, 06/23/24

New Address Momentum (Bitcoin)

Taking a closer look at new addresses, we can also measure relative momentum. In this chart, the short-term momentum (30-day SMA) is compared to the longer-term average (365-day SMA). When the monthly average is greater than the yearly, it usually indicates higher on-chain activity and a positive short-term trend in network usage. When the opposite occurs, it usually indicates a decline.

Here, the monthly average (green line) continues to fall below the yearly average (red line). We speculate that users buying and selling runes may be causing bursts of fee spikes resulting in low time preference users withholding transactions.



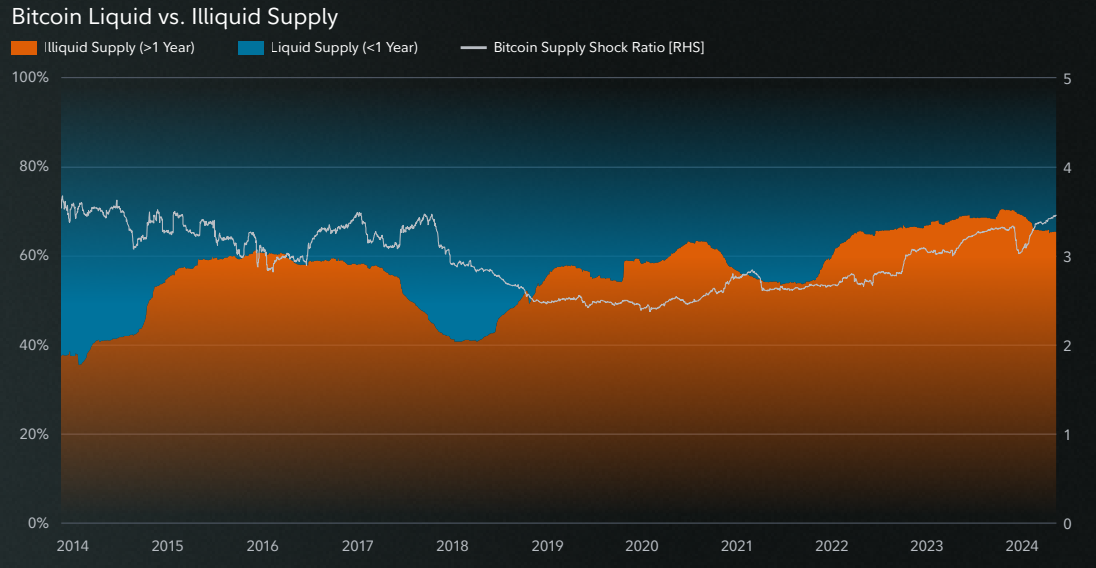
Source: Glassnode, 06/23/24

Liquid vs. Illiquid Supply (Bitcoin)

Bitcoin's illiquid supply continues to slowly fall as some of the illiquid supply returns to be sold at a profit. The current illiquid supply sits at 65.43%. The last illiquid supply all-time high remains on November 29, 2023, at roughly 70.54%.

Another way of looking at this is through the "Illiquid Supply Shock Ratio," which attempts to model the probability of a supply shock. When the supply shock ratio trends higher, it indicates that the current sold supply is primarily flowing from the liquid token supply. However, when the opposite occurs, the illiquid supply falls as long-term holders exit the market, usually in profit.

Here, the illiquid supply shock ratio appears to have recovered and is steadily rising again with a ratio of 3.46 versus 3.38 at the end of Q1. With the sharp falloff in Q1, it seems clear that some of the illiquid supply sold into the runup from $40,000 to $50,000. According to the Supply Shock Ratio, we speculate that this group of investors are no longer selling within this range, indicating they may believe higher prices are still to come. As more time passes since the halving—during which the supply of new coins was cut in half—it will remain to be seen if prices will have to rise to entice more holders to sell and replace some of that lost new supply.

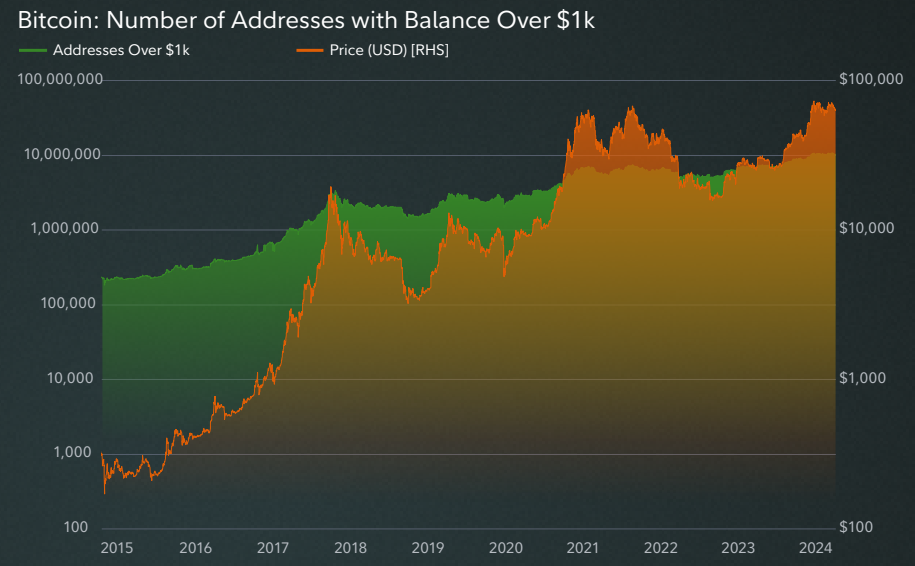


Source: Glassnode, 06/23/24

Balance ≥ $1,000 (Bitcoin)

This metric shows how many addresses hold greater than or equal to $1,000 worth of bitcoin. Here, we see these "small" addresses continuing the trend of accumulation. Since the beginning of 2024, the number of addresses greater than or equal to $1,000 of bitcoin has grown 16%. This metric hit a new all-time high on May 20, 2024, at 10,743,728 addresses. This shows a continued growth of small addresses accumulating and saving bitcoin, even with rising prices. This may be representative of a growing distribution of bitcoin and its adoption among the "average" person.

The number of addresses with more than $1,000 has grown roughly 94% since 2023 from 5.3 million addresses to today's value of 10,298,106 addresses. Note: This metric is not 100% accurate due to price appreciation during the time frame and address consolidation.

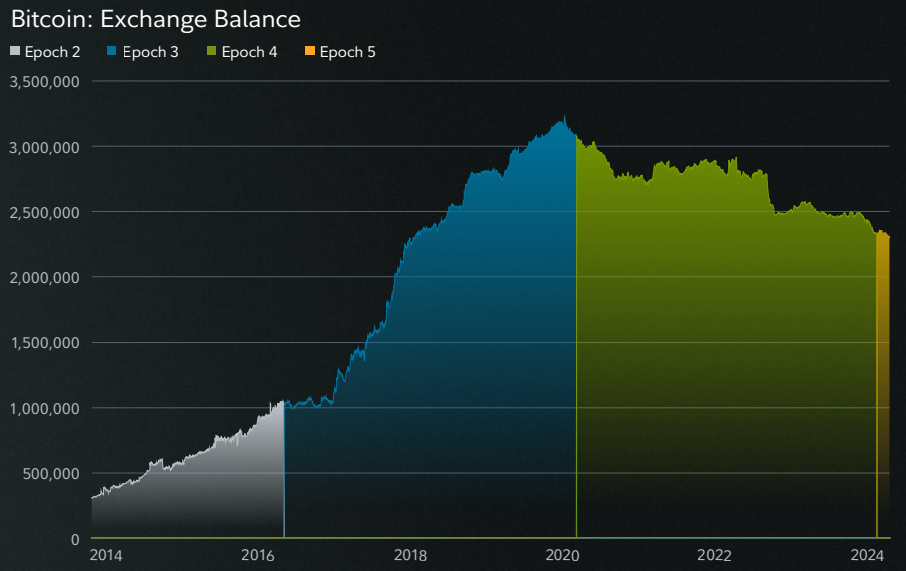


Source: Glassnode, 06/23/24

Exchange Balance (Bitcoin)

This metric shows how many bitcoin are held on exchanges. This number has continued its trend down from its peak in 2020. Fueled by multiple major exchange collapses in 2022 and other troubled exchange practices, self-custody has become a major part of the bitcoin journey throughout 2023. Additionally, the launch of spot bitcoin ETPs has established an alternative channel for investors to gain exposure to bitcoin's price.

Q2 2024 was no different as balances on exchanges continued to dwindle, inching closer to 2.3 million BTC held at an exchange. This represents a nearly 30% drop from all-time highs and a 2.2% fall over Q2 2024. While exchange balances have continued to fall, this does not necessarily equal an increase in self-custody. For example, some custodians, such as Fidelity Digital Assets, are working toward allowing clients to custody their bitcoin while simultaneously trading through an exchange venue. The last time exchange balances were this low was March 2018, when a much different story in digital assets was being told.

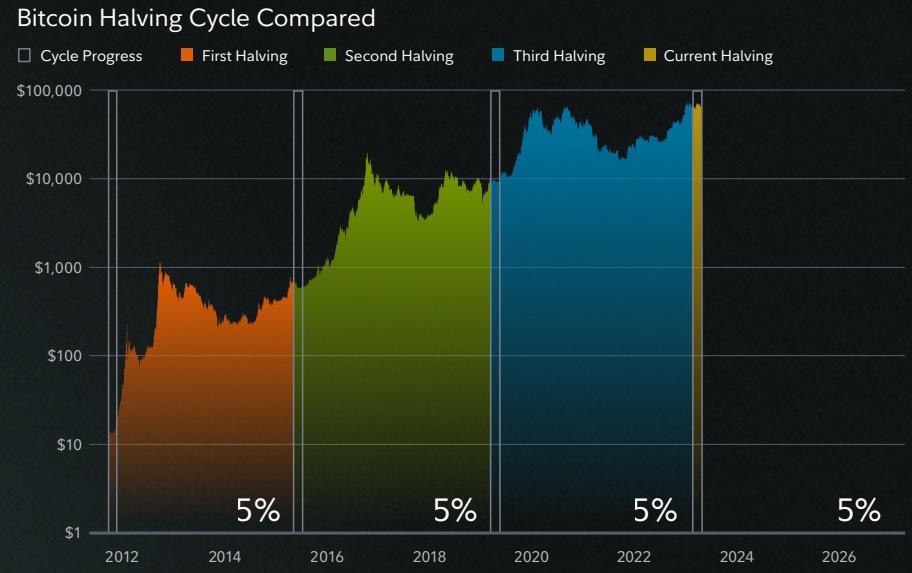


Source: Glassnode, 06/23/24

Special Appearance: The Bitcoin Halving

The 2024 Bitcoin halving has passed, restarting the halving clock. At the end of Q2, Bitcoin is approximately 5% of the way to its next halving date which is estimated to occur sometime in early 2028. For readers unfamiliar with the halving, it can be simply explained as a programmatic reduction of new bitcoin mined. The 2024 halving reduced the daily supply of new bitcoin from 900 bitcoin to 450 bitcoin—a 50% reduction. Charted to the right is the price action from each halving and the progress of the current cycle.

While many investors dispute the effect of the halving, it is important to note the possible tail-winds this cycle is experiencing: The halving occurred in an election year (U.S.) when macro factors tend to turn more positively, the launch of multiple spot bitcoin ETPs allow for sidelined capital demand to gain exposure to bitcoin, and current investors are not keen on selling for current prices as depicted by the illiquid supply cohort. Alternatively, some analysts argue that the reduction of new bitcoin is too small to matter anymore.



Source: Glassnode, 06/23/24

Ethereum Data to Watch

Ether Surges Following Update on ETPs, Network Metrics Normalize

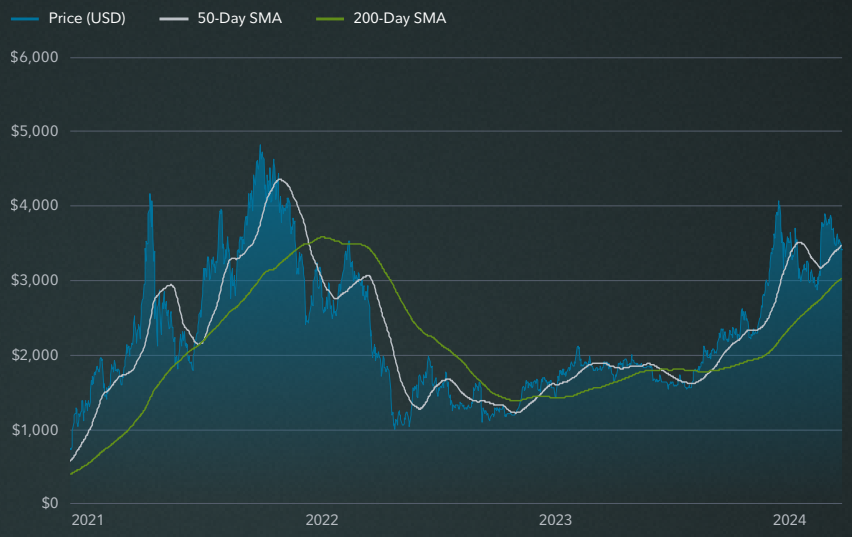
Ether is continuing its trend that started with the "golden cross" formation in November of 2023. This trend accelerated in early 2024 following the news of the SEC's spot bitcoin ETP approval and again in May when the SEC updated a rule which allowed spot ether ETPs to be listed on exchanges. It is important to note that individual products will still need to be approved before listing. The short-term moving average is roughly 10-15% away from the longer-term average currently. The difference between the short-term and long-term averages has remained consistent for the past month and is not signaling an overheated market, or a reversal in the golden cross trend.

Realized Price (Ethereum)

Realized price is a metric that aims to capture the average cost basis of all current token holders. By capturing a token's last traded price, tokens that are presumed to be lost can be discounted. Using ether's realized price as another support or resistance level, the realized price has maintained the title of "support" since January 2023.

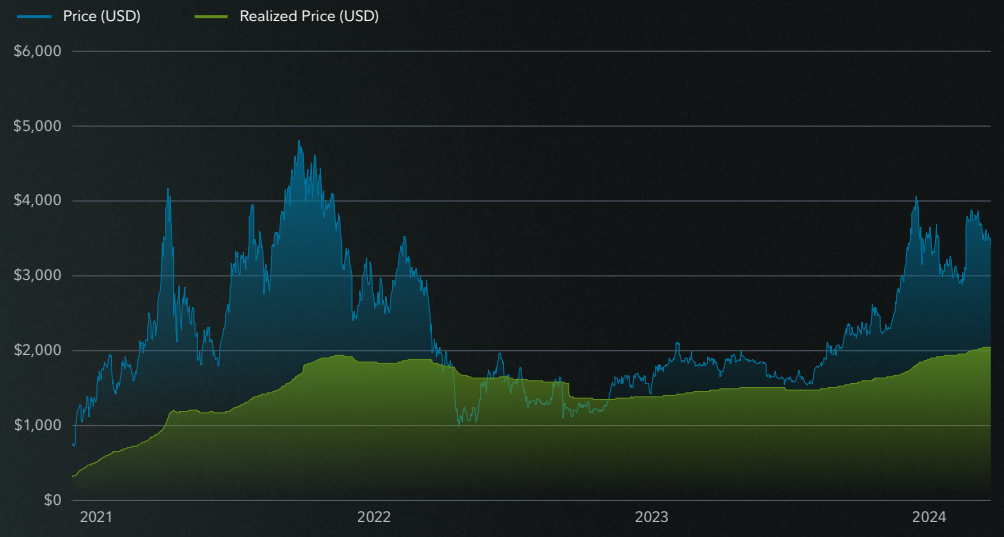
Ether is trading roughly 67% above the realized price, which currently sits at $2,050 near the end of Q2. This is the highest observed realized price since inception while price remains significantly below its high in 2021. This may be showing that even though price is significantly extended from realized price, investors are more comfortable allocating to ether as compared to the highs of 2021. Additionally, the slope of the realized price is less steep than in previous bull cycles, indicating much less froth behind the recent price appreciation. This suggests that while prices for ether may not rise much higher, there could be less downside potential.

Ethereum: Ether 50-Day vs. 200-Day vs. Price



Source: Glassnode, 06/23/24

Ethereum: Realized Price vs. Price



Source: Glassnode, 06/23/24

Net Unrealized Profit/Loss (NUPL) Ratio (Ethereum)

Historically, this metric has been useful for assessing overall market sentiment. The chart below shows that overall sentiment has bounced between the "Optimism-Anxiety" and "Belief-Denial" sectors throughout Q2 2024. Ether's NUPL score now finds itself very close to the value from the beginning of the quarter, 0.49. However, given the likely scenario that price multiples will not reach the same heights in this cycle as they did in 2021, a NUPL score of 0.49 for ether is quite significant.

To put it into perspective, the peak NUPL score in 2021 was 0.71. It is important to remember that the market structure has evolved since then, which is why even though the NUPL value at the all-time high was 0.71, the current score of 0.49 suggests we might be closer to the top than it appears.

Ethereum: Net Unrealized Profit/Loss (NUPL)

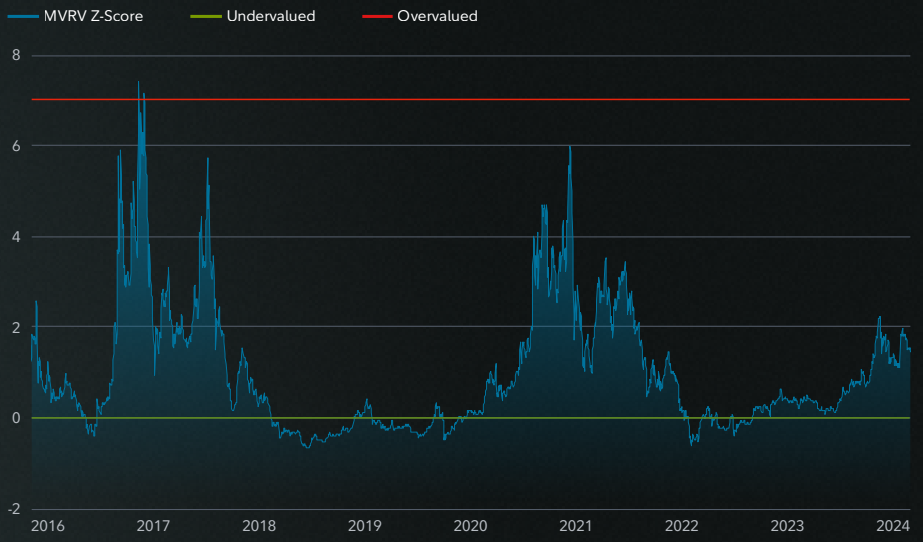
Source: Glassnode, 06/23/24

MVRV Z-Score (Ethereum)

The MVRV Z-Score is used to assess when ether is over/undervalued relative to its "fair value." When the market value is significantly higher than the realized value (acquisition price), it has historically indicated a market top (red zone), while the opposite has indicated a market bottom (green zone).

The most notable difference between this cycle and previous ones is that ether's MVRV value has rarely stayed within the 1-2 range for any significant time before. Any sideways action in this region has typically been short-lived and soon followed by a large move. Considering we do not expect the z-score to reach levels seen in 2021 in the near term, this value seems to be near the middle of its expected range and is a neutral indicator.

Ethereum: MVRV Z-Score



Source: Glassnode, 06/23/24

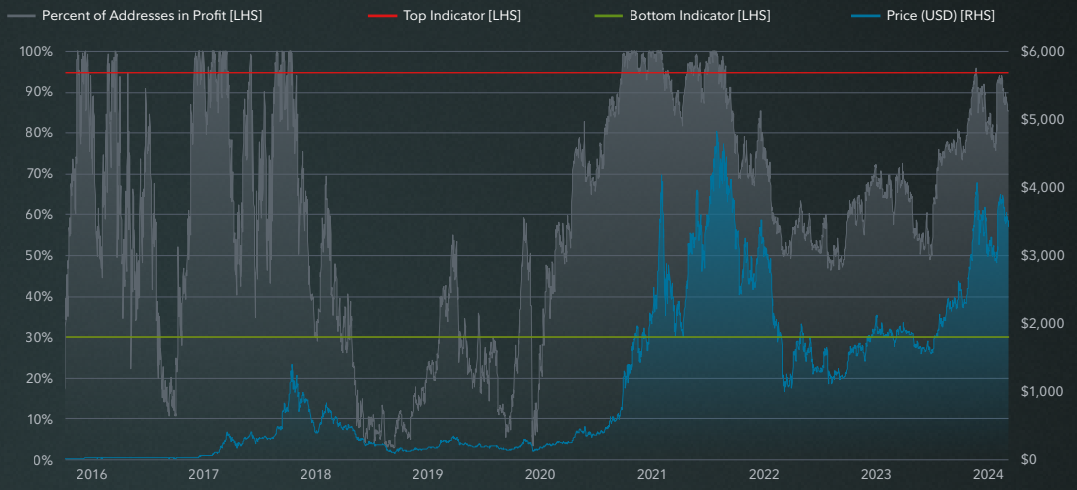
Percent in Profit (Ethereum)

Percent in profit is the percentage of unique addresses with funds that have an average buy price lower than the current price. The buy price is defined as the price at the time coins were transferred to an address. Only externally owned addresses (EOAs) are counted. This metric has not touched the bottom indicator since January 2020, which may be because ether is not necessarily considered a buy-and-hold asset. Ether owners may be using ether for trading, smart contracts in decentralized finance (DeFi) services, staking, or buying other digital assets.

The percent of addresses in profit decreased marginally from 91% at the beginning of the quarter to 85% currently. We maintain the view that this is one of the largest technical headwinds for ether over the medium term. One interesting point to note, however, is that during the previous bear cycle, the percent of addresses in profit only saw a low of around 45%.

Some may view this as a notable shift in the investor base compared to previous cycles, signaling that more long-term holders exist today—many of which are likely to be staking and cannot immediately divest. Therefore, we expect the floor of this metric to be positively correlated with the amount of ether staked.

Ethereum: Percent of Addresses in Profit



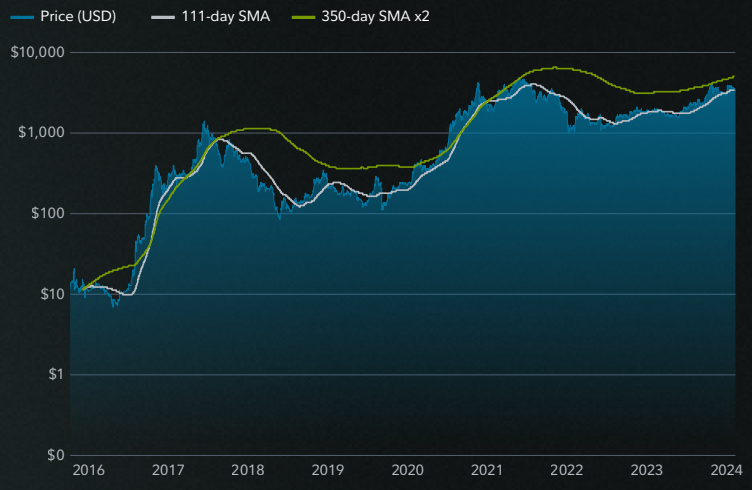
Source: Glassnode, 06/23/24

Pi Cycle Top Indicator (Ethereum)

The Pi Cycle indicators are composed of the 111-day simple moving average (111-day SMA) and a 2x multiple of the 350-day moving average (350-day SMA x2) of ether's price. This metric shows when ether becomes significantly overheated (the shorter MA reaches the longer MA levels). This has historically been a good cycle top indicator. When the shorter time frame reaches the longer time frame, markets are considered to be "Heating Up." The shorter-term average has been meaningfully converging with the longer-term average and is approaching a "Heating Up" signal.

However, given that the shorter-term average has not yet reached the longer-term average, it may signal that there is still some room to the upside. Overall, while we are approaching a "heated cycle" according to this metric, it does not appear that it is signaling a cycle top just yet, especially when compared with previous bull cycles where there have been prolonged periods of overlap in the short- and long-term averages.

Ethereum: Pi Cycle Top Indicator



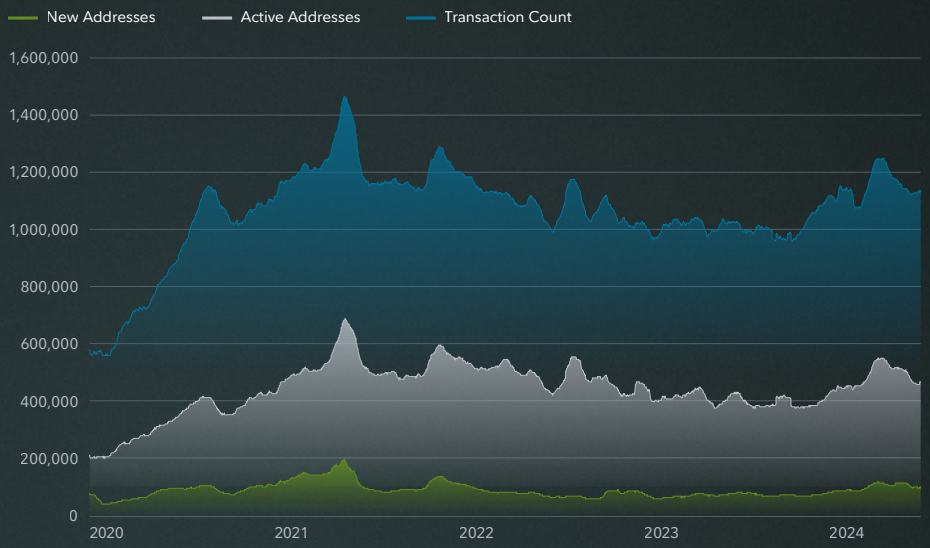
Source: Glassnode, 06/23/24

Monthly Address Metrics (Ethereum)

Following a robust start to 2024, Ethereum's base layer fundamentals experienced a downturn in Q2, with monthly new addresses, active addresses, and transaction counts decreasing by 16%, 14%, and 9% respectively. Despite this, the first half of 2024 still witnessed a modest net increase in these metrics. As we conclude Q2, it appears that Ethereum's base layer growth is adhering to a longer-term upward trend, as evidenced by the increase in active and new addresses.

As the Layer 2 ecosystem continues to evolve, the influence of Layer 1 metrics on valuation is expected to diminish. In the long run, the growth in transaction counts and consequently, active addresses, is theoretically constrained by the gas limit. Given that significant increases in the gas limit—facilitated by technical breakthroughs like Verkle Trees—are not anticipated until at least 2026, it is unlikely that these metrics will deviate substantially from the established longer-term trend.

Ethereum: Monthly Metrics



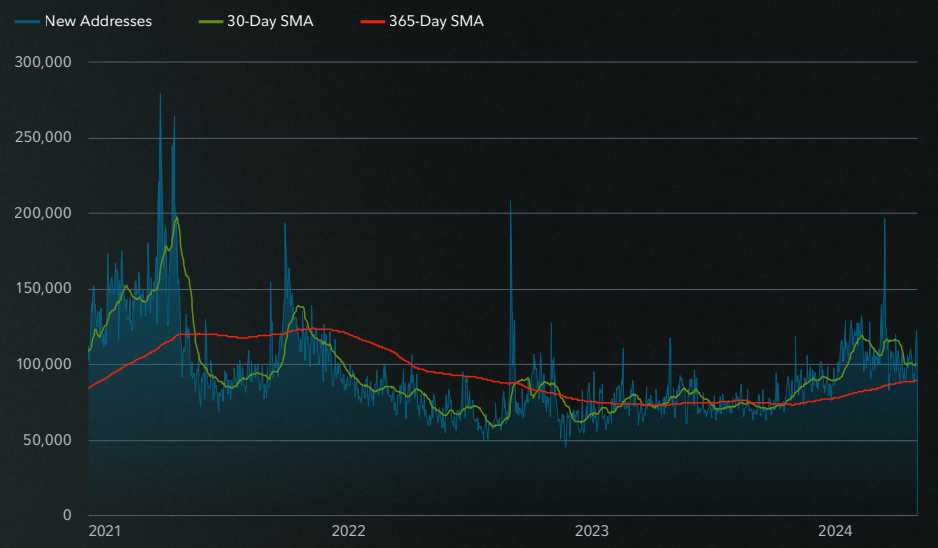
Source: Glassnode, 06/23/24

New Address Momentum (Ethereum)

New addresses are defined as unique addresses that appeared for the first time in a transaction. New addresses appear when users create new wallets and transact with them. This is different from Bitcoin addresses because Ethereum wallets do not typically create a new address for each transaction. Because of this difference, this metric could indicate a clearer picture of Ethereum's Layer 1 adoption.

Since December 2023, the shorter-term average of new addresses has consistently exceeded the longer-term average. However, these averages have recently begun to converge, indicating a shift from the strong upward momentum seen at the start of the year to a steadier growth trajectory. It is important to note that this metric does not account for Layer 2 activity.

Ethereum: New Address Momentum



Source: Fidelity Digital Assets Research via Dune Analytics, 06/23/24

Layer 2 Transaction Count (Ethereum)

Since the Deneb-Cancun upgrade, transactions on Layer 2 platforms have become significantly more cost-effective, boosting both Layer 1 bridge activity and the overall Layer 2 transaction count. Despite a decline in base layer activity since Q1, Layer 2 transaction counts have sustained their remarkable growth, increasing by 19%.

It is important to remember that the Layer 2 space is still in its infancy and new projects are continually emerging. Consequently, our total Layer 2 transaction count does not encompass every available Layer 2, and the actual value is higher than what is shown here. Our count includes transactions from chains such as Optimism, Base, Arbitrum, ZKsync, Zora, and Scroll.

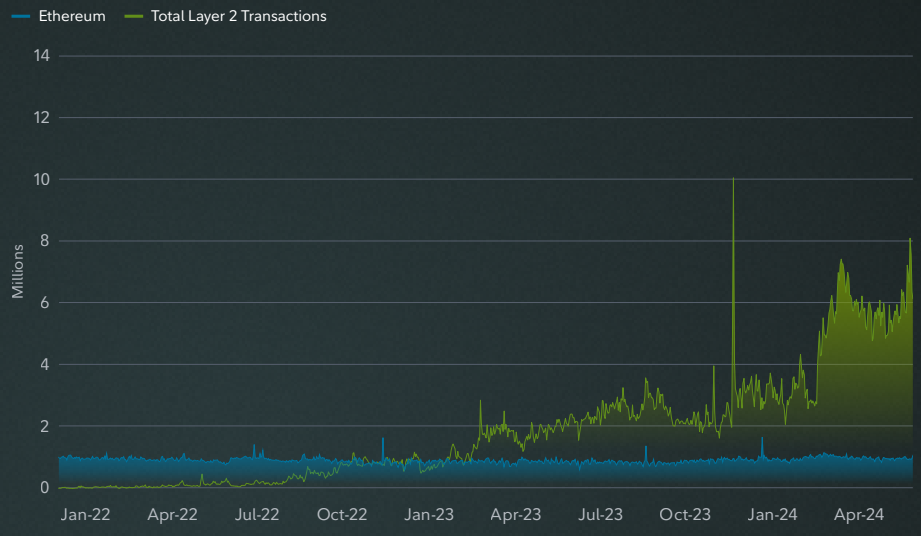
Lastly, it is common for both new and existing Layer 2s to incentivize network activity, often through airdrops. This factor should be carefully considered when analyzing these metrics, as it would be misleading to attribute all activity solely to the utility of each Layer 2.

Staking Numbers and Validators (Ethereum)

The chart below illustrates the maximum number of validators permitted to join the network within a specific timeframe, along with the observed net change. Active validators increased by 5% throughout the second quarter, with the total validator count surpassing one million in April 2024. The largest daily decrease in validators occurred on May 15, 2024, when a net total of 2,682 validators left the network, exceeding the daily limit of 1,800 new validators. Despite these occasional large-scale exits, validator growth remains steady.

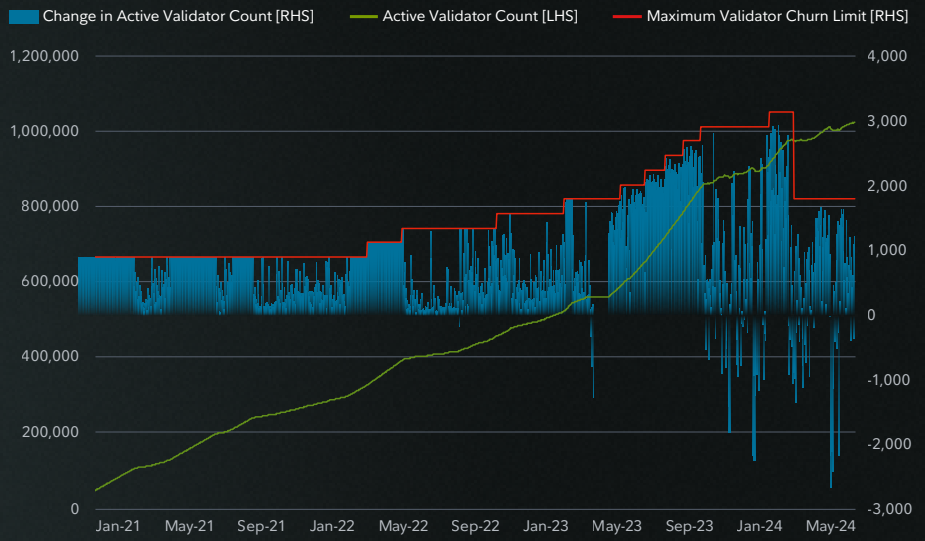
An upcoming Ethereum upgrade is likely to include an Ethereum Improvement Proposal (EIP) that enables entities running multiple validators, which currently require 32 ether each, to consolidate into a single validator. This will thereby reduce network messaging bandwidth requirements. However, there seems to be limited incentive for substantial consolidation among validators, particularly for large operators who can easily deploy additional validators due to their access to substantial ether reserves.

Ethereum: Ethereum vs. Layer 2 Daily Transactions



Source: Fidelity Digital Assets Research via Dune Analytics, 06/23/24

Ethereum: Proof-of-Stake Change in Active Validators



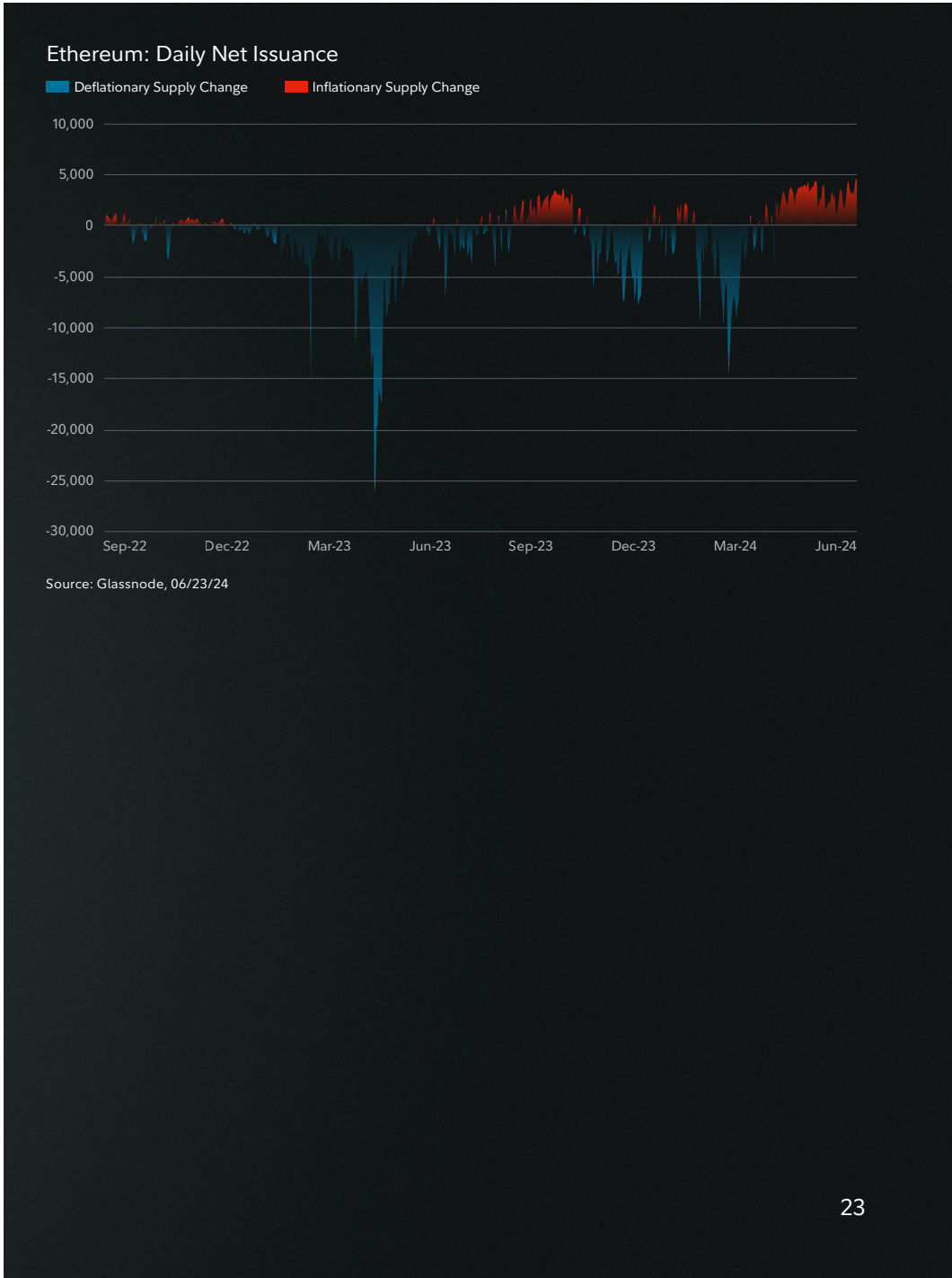
Source: Glassnode, 06/23/24

Net Issuance and Burn (Ethereum)

Since The Merge in September 2022, Ethereum's net issuance (the new supply issued by the network minus the supply burned from transactions) led to an overall decrease in supply for over a year. This is significant because theoretically, if ether's supply continues to decrease, it enhances the relative ownership of all remaining token holders. However, these inflationary and deflationary changes in supply are heavily influenced by the demand for staking—which drives issuance higher—and transactions that burn ether.

In Q2, all but 13 days were net inflationary for Ethereum's supply. The continued rise in issuance, coupled with a relatively stagnant burn rate, resulted in a net creation of 111,515 ether over the quarter. While this might seem like a substantial increase that could dilute the relative value of each coin, when annualized using ether's current supply, it translates to an annual inflation rate of just 0.37%.

This logic also explains why quarters with nominally large amounts of burned ether do not seem to have a notable positive impact. For further context, only 306,000 net ether has been removed from the total supply since The Merge, which started at approximately 120,523,800. Consequently, we anticipate this trend of ether being neither significantly deflationary nor inflationary to persist for the foreseeable future.



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