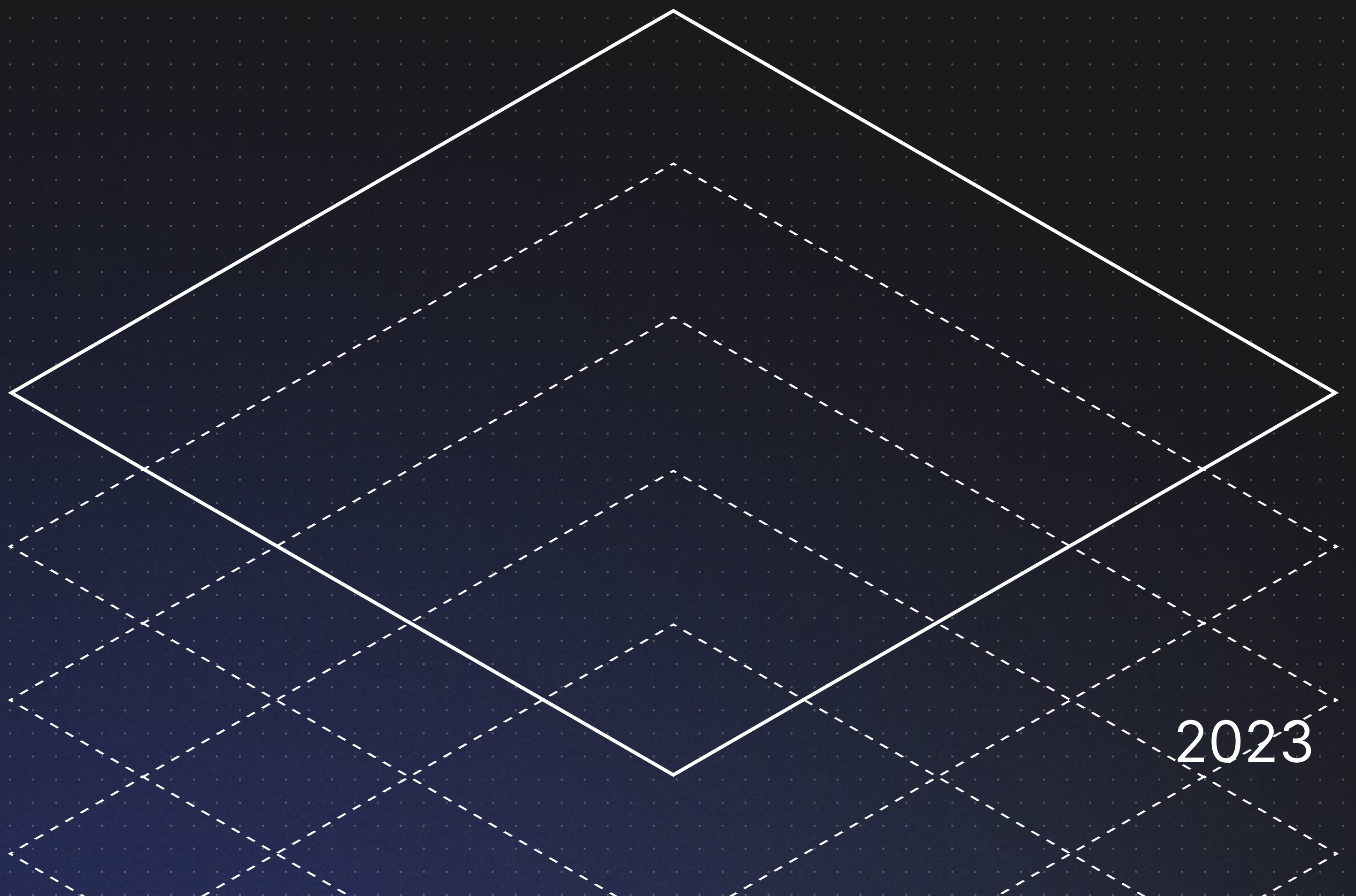


glassnode

Optimizing Discretionary Trading with On-Chain Data

Unlock Deep Market Insights and Enhance
Investment Decision-Making with Glassnode



2023



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Unlocking Alpha with On-Chain Analysis

Key Topics Covered:

- On-chain data and its role in understanding the behavioural trends of crypto market participants.
- Insights discretionary traders can derive from on-chain analysis and how to implement them in investment strategies.
- How Glassnode empowers discretionary traders to make informed decisions without being overwhelmed by information.

Digital assets are transitioning from niche to necessary in sophisticated investment portfolios. A recent [PWC report](#) highlights this shift, showing that traditional hedge fund investment in BTC and ETH rose from 67% to 91% within a year.

Concurrently, Bitcoin spot ETF applications from giants like BlackRock, Fidelity, and Franklin Templeton signal sustained institutional momentum in this nascent market.

Despite growing interest, active participation from new institutional players in the digital asset market is limited. As noted in the same report, only 23% of hedge funds actively trade these assets for market-neutral alpha gains.

For institutional entities venturing into this space, the challenge often lies in adapting their trading strategies to the distinctive dynamics of digital assets. What could bridge this gap?

Imagine having the ability to monitor money flows within an expansive global transaction system like SWIFT. If one could scrutinize every transaction, discerning the players involved, their timings, and their destinations, the insights would be game-changing.

This is where on-chain analysis comes in. Just as monitoring a global transaction system would offer actionable insights, on-chain data provide an in-depth perspective on the collective actions of crypto market participants.

Through meticulous examination of this data, traders can detect patterns and obtain insights that simple price data can't offer. Such a profound understanding of market behaviour significantly amplifies the overall decision-making process and helps make better trades.

This report will help you appreciate the pivotal role on-chain analysis and Glassnode can play in your trading and investment decision-making in the cryptocurrency markets.



Key Concepts in On-Chain Analysis

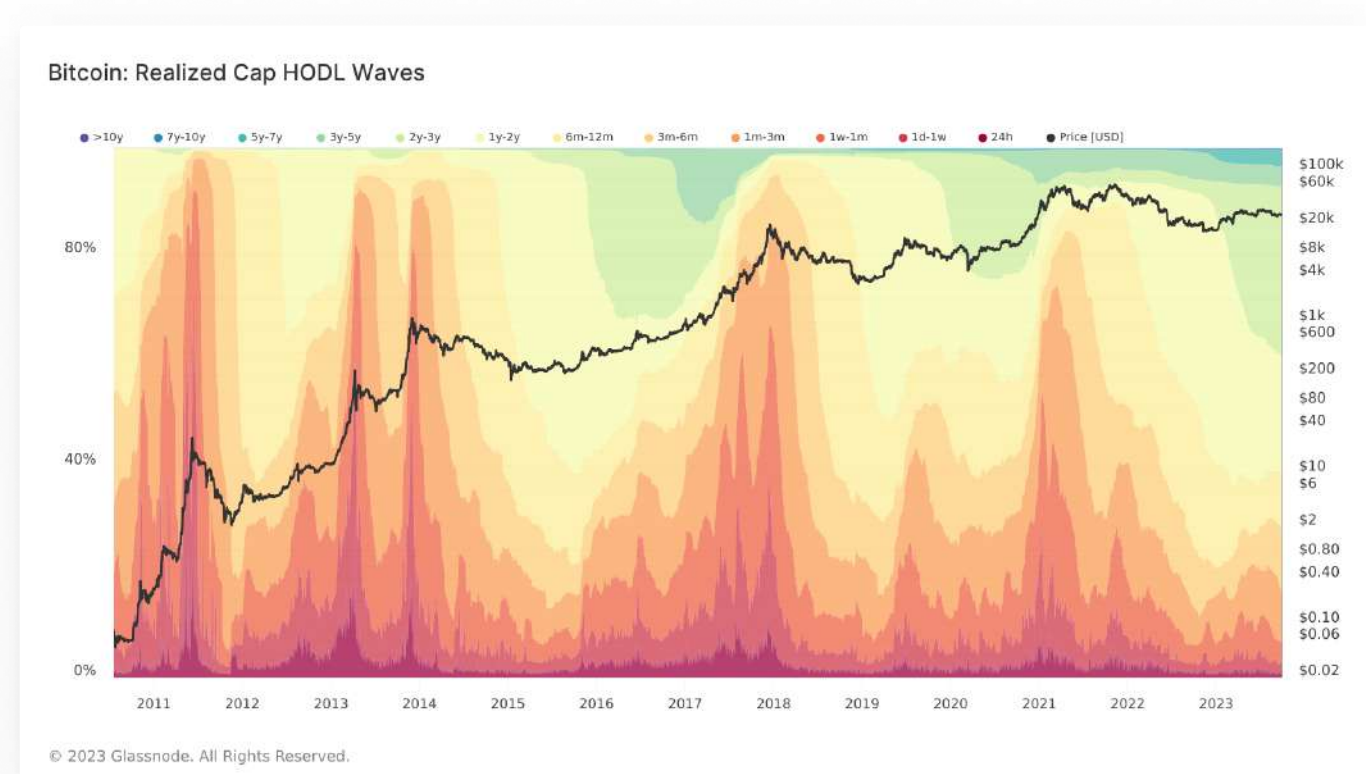
On-chain analysis is the systematic examination of data recorded on a blockchain. This data encompasses price information, transaction amounts, timestamps, wallet addresses, and more.

By analyzing this information, discretionary traders can derive insights into the behaviour, sentiment, and intentions of market participants in the short to medium term.

Core Concepts of On-Chain Analysis

Two foundational concepts underpin on-chain analysis:

Timestamping: Every transaction on the blockchain is time-stamped, providing a chronological record of when each transaction occurred. This allows for the tracking of activity trends over specific periods, revealing patterns and shifts in market behaviour.



Price stamping: Alongside the timestamp, transactions can be associated with the prevailing market price at the time of the transaction. This correlation offers insights into the market sentiment during specific price points, aiding in understanding buying or selling pressures.

Digging Deeper

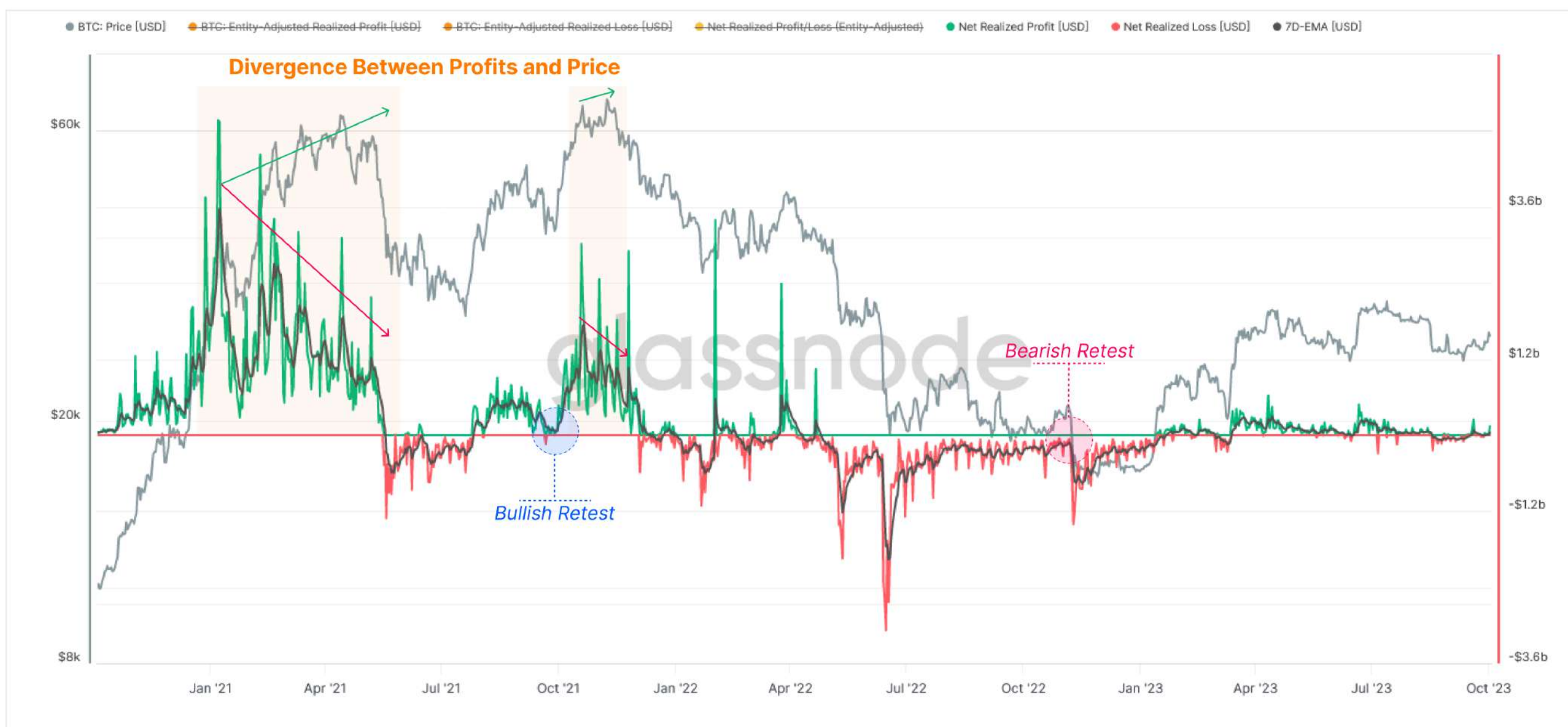
On-chain analysis combines data science with market psychology to establish models of true supply and demand for specific digital assets. By leveraging various on-chain metrics, we can gain a deeper understanding of market trends, investor behaviour, and the overall health of blockchain networks.

Here's a breakdown of some of the key advantages and insights that on-chain analysis can offer:

- **Transparency and Real-Time Data:** At its core, blockchains operate as open ledgers. This openness allows for near real-time access to data, ensuring traders can keep a finger on the pulse of market activities as they unfold.
- **Predictive Insights:** Historical data reveals that several on-chain metrics correlate with price movements. Whether it's metrics related to address activity, token movement, or even network fees, these indicators can offer a hint about potential price trajectories.
- **Smart Money Tracking:** In the crypto market, movements by 'whales' - large holders of a specific cryptocurrency - often precede major market shifts. Tracking these large wallet movements is crucial as they can at times signal impending major market shifts.

- **Network Health & Usage:** The fundamentals of a blockchain can be assessed through metrics such as transaction volume, active addresses, and hash rate. These indicators not only reflect the health but also the adoption rate of a particular blockchain, providing insights into its potential growth or decline.
- **Sentiment Analysis:** The prevailing mood of the market can often be discerned through on-chain metrics. By keeping an eye on these, traders can gauge overall investor sentiment, allowing them to potentially anticipate and capitalise on emerging market trends.

Bitcoin: Net Realized Profit/Loss (Entity-Adjusted)



Practical Applications of On-Chain Analysis

Traditional financial metrics, while valuable, often fall short in capturing the nuances of the crypto space. On-chain data bridges this gap, providing actionable insights that are both intuitive and grounded in data.

While mastering on-chain analysis requires time and dedication, it is not an abstract discipline. Even newcomers can harness its practical applications to make informed decisions in the crypto market. This chapter will explore three key areas where on-chain analysis can offer straightforward insights:

1. **Entity Balances:** Understand macroscopic market trends by observing the flow of coins within the system.
2. **Network Activity:** Gauge the potential and value of a cryptocurrency by assessing its network activity and user base.
3. **Profit and Loss:** Harness insights from profit and loss metrics to identify opportune moments for trading or investment.

By exploring these areas, traders and investors can better navigate the complexities of the digital assets market, gaining valuable information that can enhance both short-term tactics and long-term strategies.

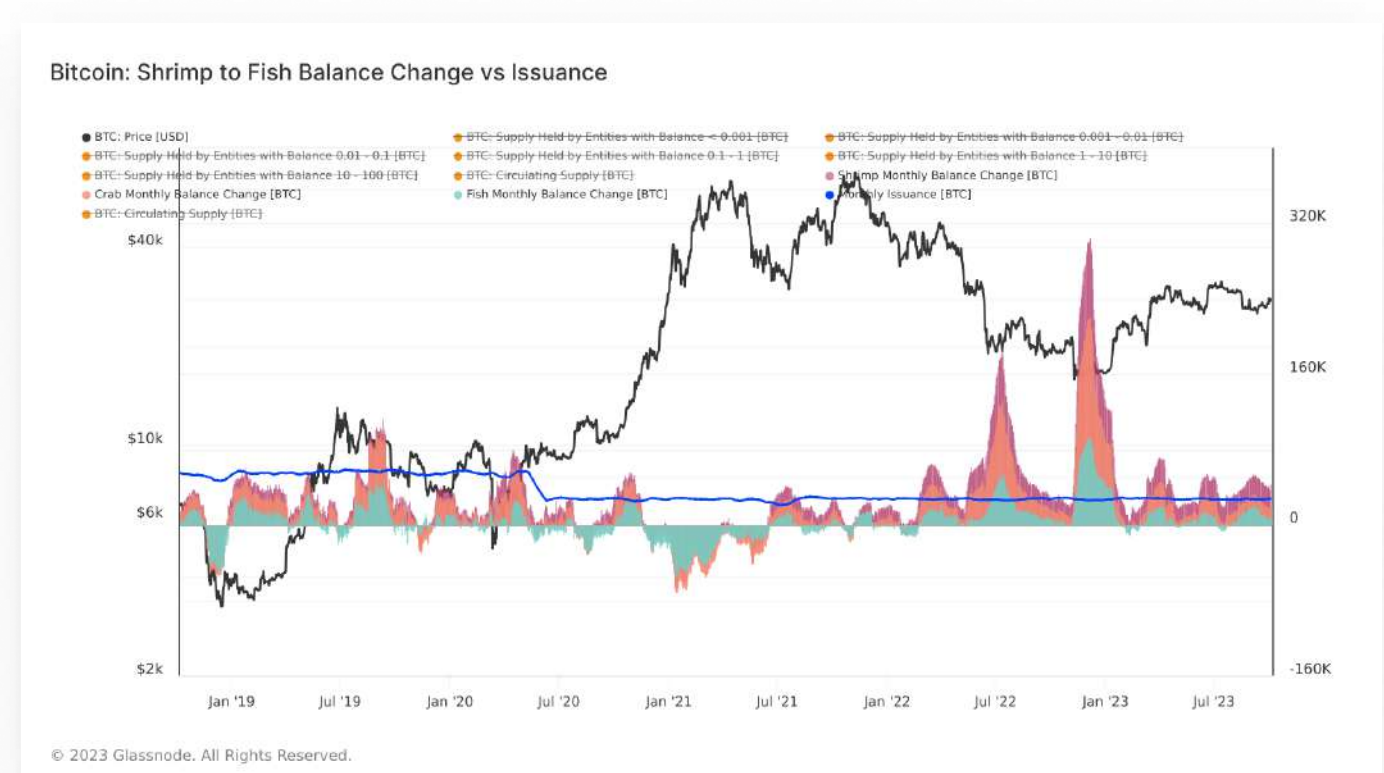
Observing Market Activity Through Entity Balances

Glassnode's entity balance data is categorized based on wallet size, providing a cross-section of the circulating supply from small to large wallets.

This categorization introduces the concept of cohorts, allowing for the observation of patterns and balance changes over both short- and long-term periods.

The wallet cohorts are divided into various classes, such as Shrimp (entities holding less than 1 BTC) and Whales (entities holding more than 1K BTC). This categorization can be used for observing periods when different classes of market participants increase their activity, indicating a changing market and potential buying opportunities.

For example, the Shrimp cohort is a reliable indicator of demand for Bitcoin from the retail base, allowing traders to understand the influx of people at the population size and adjust their strategies accordingly.



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On the other hand, cohorts like Sharks and Whales represent entities with substantial holdings, often indicative of institutional entities, high net worth individuals, trading desk. Observing these cohorts is crucial for understanding the activities of entities with significant market influence.

While larger holder of BTC are often interpreted as smart money or institutions, we can obtain an even better view of the movements of these entities by looking at holding times rather than size of the wallets. In that regard, we can identify two fundamental groups:

- **Short-term holders** - entities who have held their coins for less than 155 days,
- **Long-term holders** - entities who have held their coins for 155 days and more.

The divergence between long and short-term holders serves as a useful indicator of prevailing market trends. Specifically, this data can provide insights into whether big money is buying and holding or selling, allowing traders to identify supply squeezes and accumulation phases.

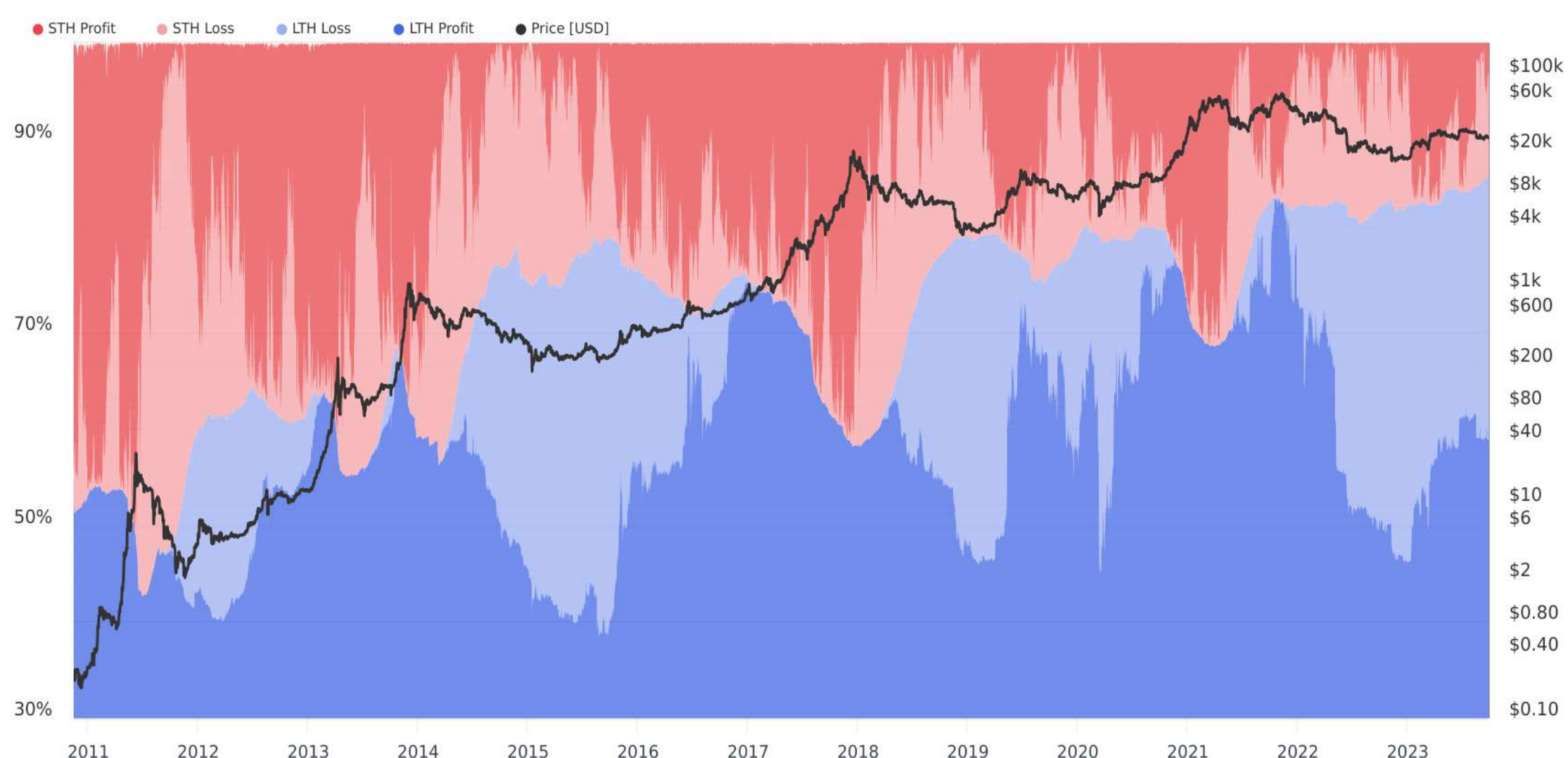
For example, a predominant presence of long-term holders may point to an accumulation phase, strong investor conviction, and a potential supply squeeze in the making. This scenario can be interpreted as smart money maintaining their positions despite short-term price fluctuations.

However, when long-term holders initiate sales, it may lead to market oversaturation and a potential inability to uphold incoming demand.

Analyzing these trends is vital for identifying market bottoms and tops. For traders, strategically aligning actions with the behaviours of long and short-term holders can help decide when is the right moment to go long and when a more cautious approach is necessary.

If you would like to explore this topic in greater detail, please visit our dedicated [dashboard](#).

Bitcoin: Long- and Short-Term Holder Supply in Profit/Loss



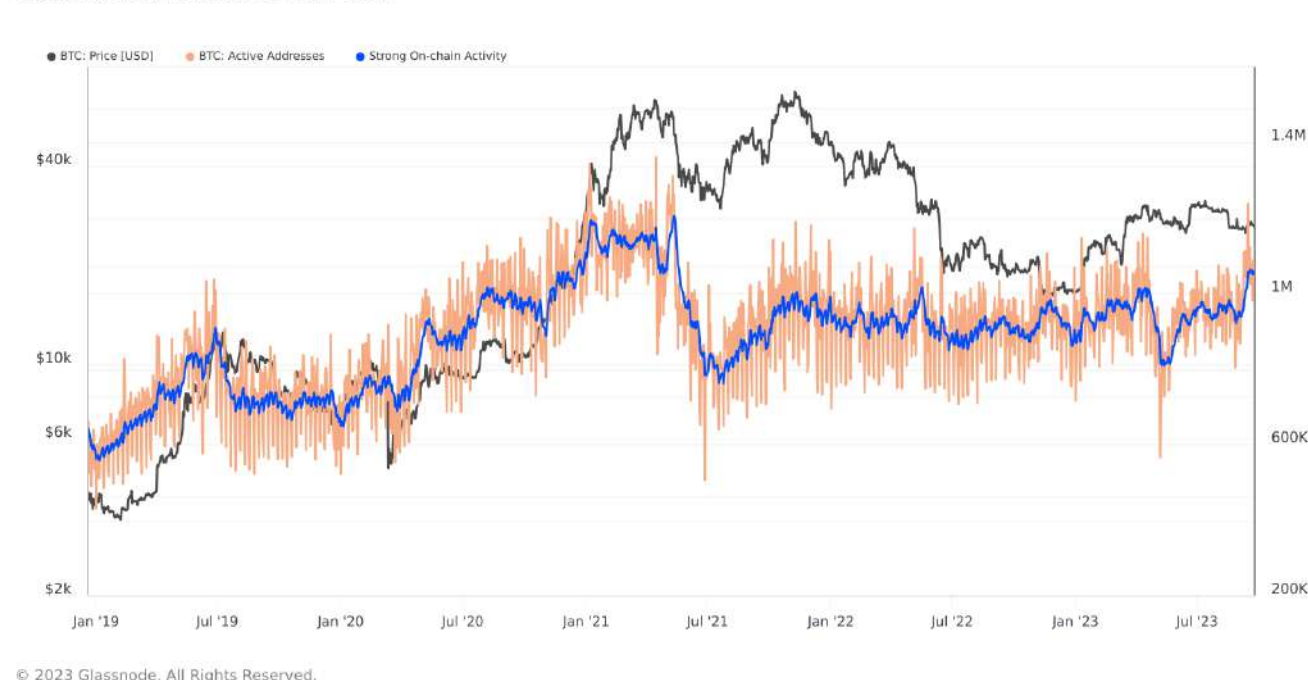
Network Growth and Value

By analyzing metrics focusing on user activity on a blockchain network, investors can glean insights into the underlying trends of its current health and future growth potential. These metrics offer a multifaceted view of network utilization, user adoption, and value transfer, enabling traders to make informed predictions about the network's future value. A solid understanding of these metrics can also help anticipate market movements and adjust trading strategies accordingly.

Some of the key metrics allowing to gauge a network's value and growth are:

- **Active Addresses:** Represents the unique addresses that were either a sender or receiver in successful transactions each day, reflecting the trend and magnitude of daily active users for the network. High activity is synonymous with increased demand and speculation, typical of bull markets, while low activity is indicative of reduced demand and is characteristic of bear markets.

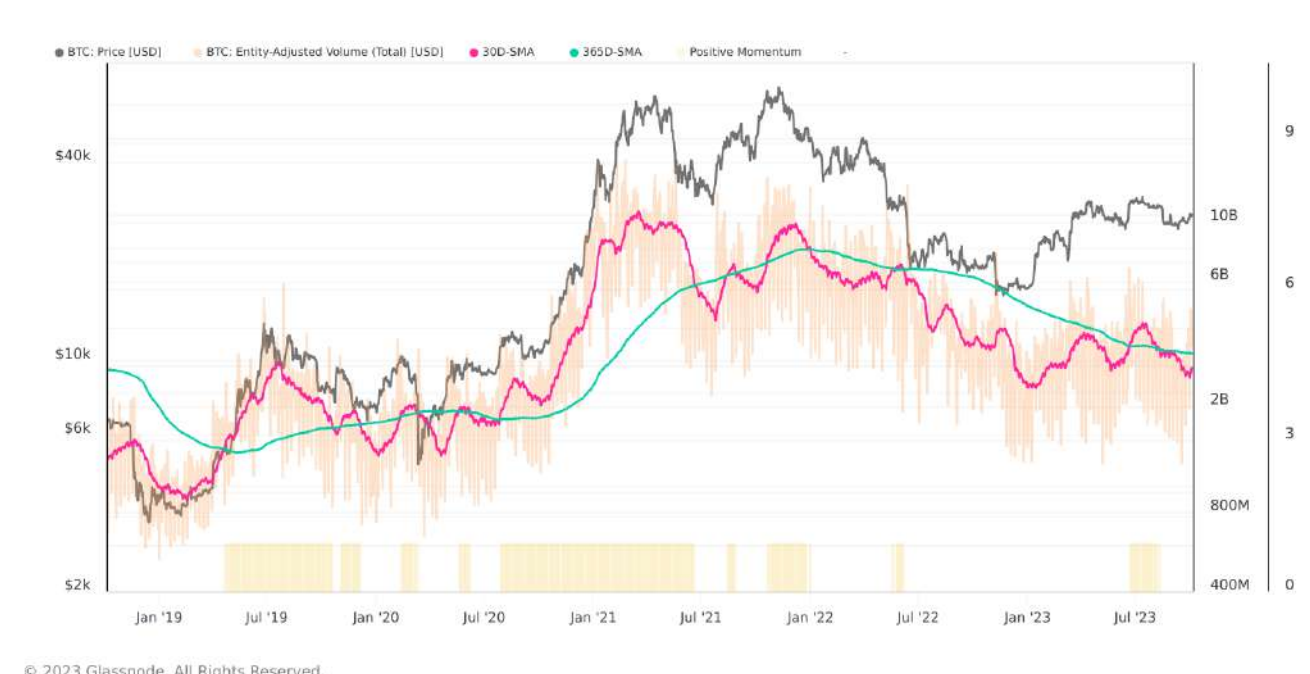
Bitcoin Active Addresses 14D-EMA



- **Addresses with Non-Zero Balance:** Denotes the unique addresses holding a positive amount of coins, offering insights into longer-term network adoption trends. Uptrends signify increasing aggregate adoption and growing on-chain participation, while downtrends indicate a reduction in non-zero addresses.

- **Transaction Counts:** Measures the daily number of confirmed transactions, encompassing various transaction types and providing a snapshot of overall network activity. High values suggest an increasing demand for block space and value settlement, indicating growing utilization of the network, while low values signal decreased network effects.
- **Transaction Volume:** Represents the total value settled by the blockchain daily, after filtering out non-economical transactions, and indicates the overall demand for value settlement and block space. High values indicate increased demand for value settlement and block space, while low values suggest a decline in these demands.

Bitcoin: Transfer Volume Momentum (Entity-Adjusted)



When these metrics show an uptick in transaction counts and active addresses but not in transaction volume, this suggests increased network usage but with insignificant value movement. This scenario typically forecasts sideways price action, indicating a stable market without significant upward or downward movements.

Traders can leverage these insights to align their strategies with the observed network activities and trends, optimizing their positions in the prevailing market conditions.

If you would like to explore this topic in greater detail, please visit our dedicated [dashboard](#).

Profit Indicators and Market Timing

Understanding and incorporating profit and loss metrics can significantly enhance trading strategies by providing nuanced insights into market conditions, investor spending behaviour, and as well as market sentiment. By considering these metrics in conjunction with entity balances and network activity indicators, traders can time their entry and exit points as well as recognize market tops and bottoms.

To grasp how these metrics can be applied, it may be practical to consider them within the framework of 'climate' and 'weather' analogy. Entity balances and network activity metrics represent the 'climate', providing a high-level overview of market conditions. On the other hand, profit and loss metrics can be thought of as the 'weather patterns', offering a more detailed, day-to-day view of market activities and trends.

Key profit and loss metrics that allow traders and investors to recognize these changing patterns are:

- **Realized Profit and Loss:** This metric reassesses the value of coins when they are spent on-chain relative to the value when they were last moved, providing insights into the magnitude of profit or loss realized between coin acquisition and disposal events. It reflects aggregate market sentiment, capital inflows or outflows, and trends in network profitability.

- **Net Unrealized Profit and Loss (NUPL):** NUPL shows how much investors would stand to gain or lose if all units of a given currency were sold today. It represents the delta between the asset's creation price and its current price, providing a network-wide view of profit and loss states and, by extension, provides a gauge of investor sentiment. The deviation of NUPL from zero can help in discerning market trends towards tops and bottoms.
- **Spent Output Profit Ratio (SOPR):** SOPR provides insights into the degree of realized profit and loss for all coins moved on-chain, reflecting macro market sentiment, profitability, and losses taken over a particular time-frame. It considers only coins moved in the timescale considered and takes the ratio between the fiat value at the time of UTXO creation and the fiat value when the UTXO is spent.

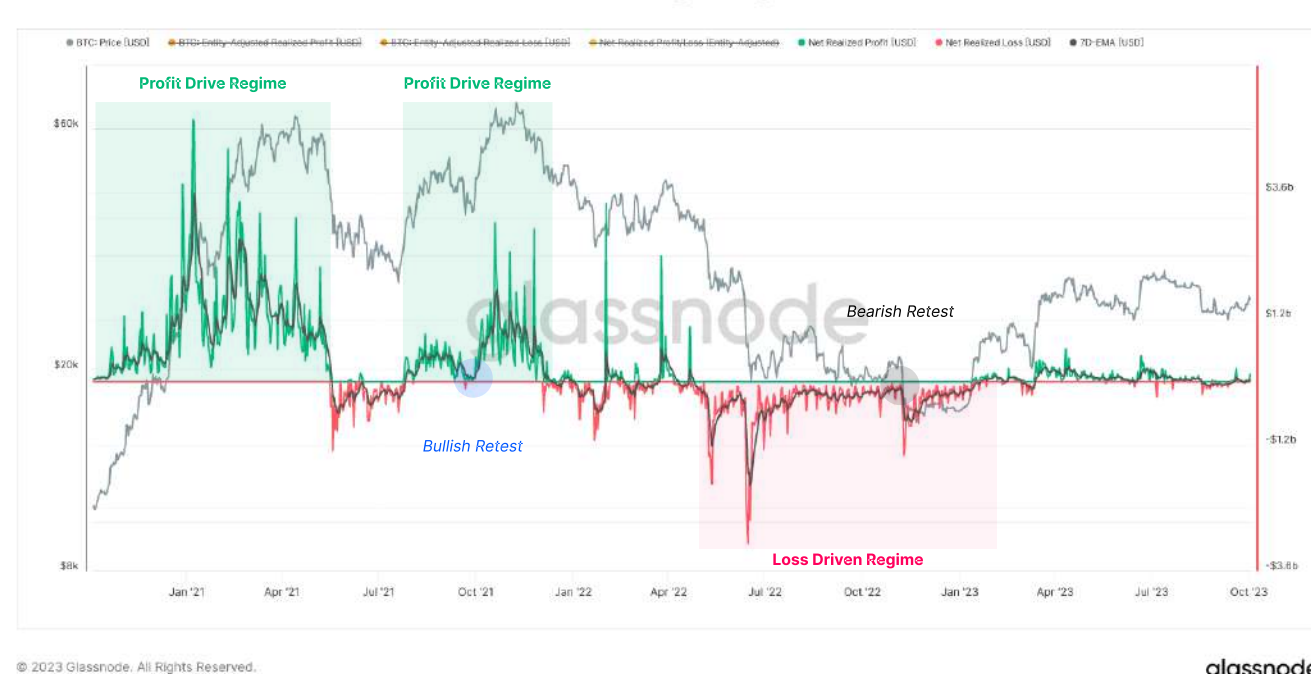
Traders can apply these metrics to identify market trends and decide whether to go long, add to their position during a correction ('buy the dip'), short when the market is becoming overheated, or exit the position when a bull market starts turning into bear.

For instance, during an uptrend, significant peaks in realized profit and loss may signal a time for caution, as excessive profit-taking can lead to market tops. Generally, in a robust uptrend, profit and loss metrics will find support on the neutral level, indicating that investors are buying at their cost basis and not selling at a loss.

When profit and loss metrics return to neutral and SOPR returns to one, it suggests that the market is in an uptrend, with investors buying at their cost basis and those in profit not selling, indicating market stability. An undercut in these metrics can serve as a contrarian indicator, signaling a potential buying opportunity as it reflects panic selling by those who bought at the local peak.

If you would like to explore this topic in greater detail, please visit our dedicated [dashboard](#).

Bitcoin: Net Realized Profit/Loss (Entity-Adjusted)



Case Study: On-Chain Data in Investment Decisions

In this section, we will show how the metrics and indicators we have discussed can be incorporated into trading and investment decision-making by examining a specific period in Bitcoin's history through the lens of a discretionary trader.

We will focus on the 2019 rally of Bitcoin, exploring how a trader could have utilized on-chain analysis to discern whether the market was entering a new bull phase or merely experiencing a bear market rally.

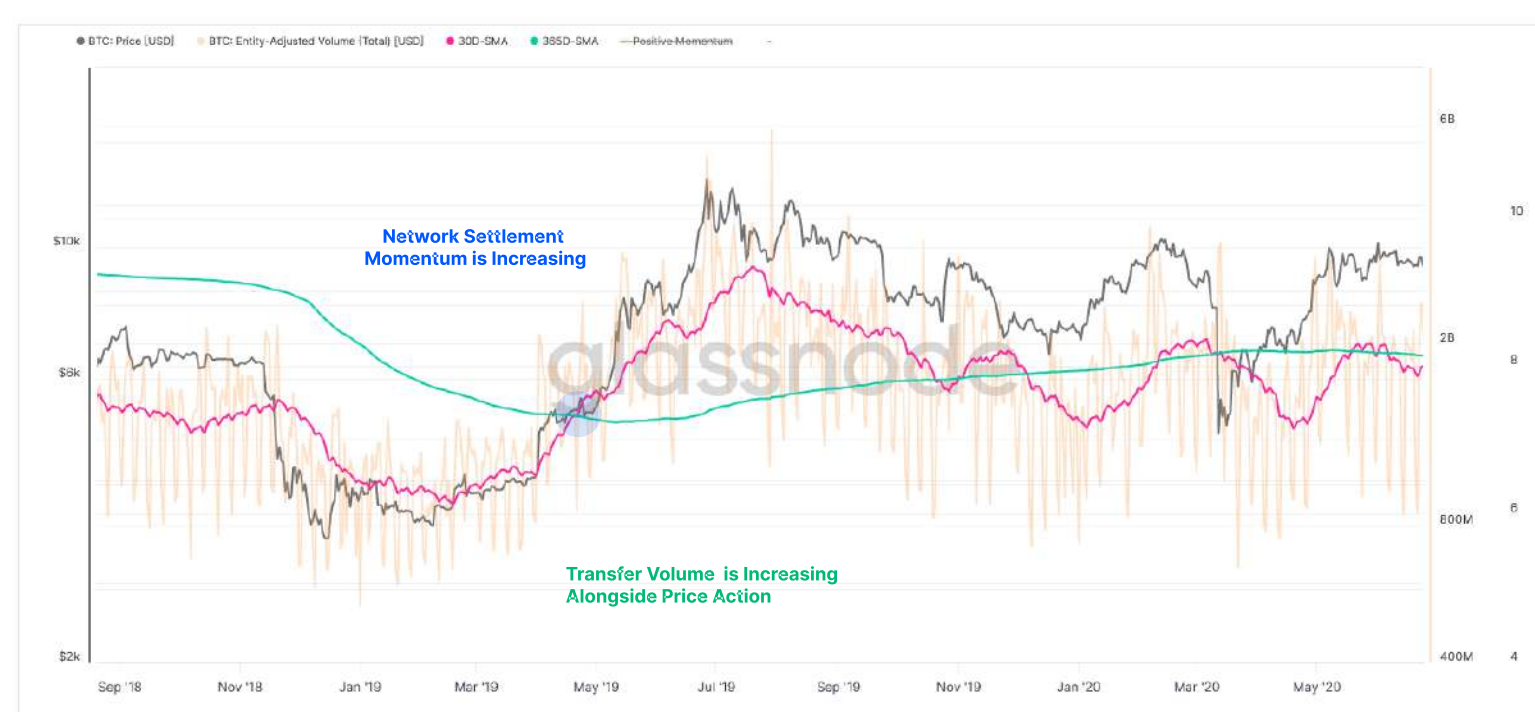
We will also explore how these metrics could have aided in determining optimal entry and exit points and identifying opportunities for shorting the market.

Judging the Investment Climate

In 2019, Bitcoin experienced a notable rally, with prices soaring from \$4K to \$14K per BTC. At the initial stages of the rally, key network activity metrics were signalling a potential temporary reversal of the prevailing bear market trend.

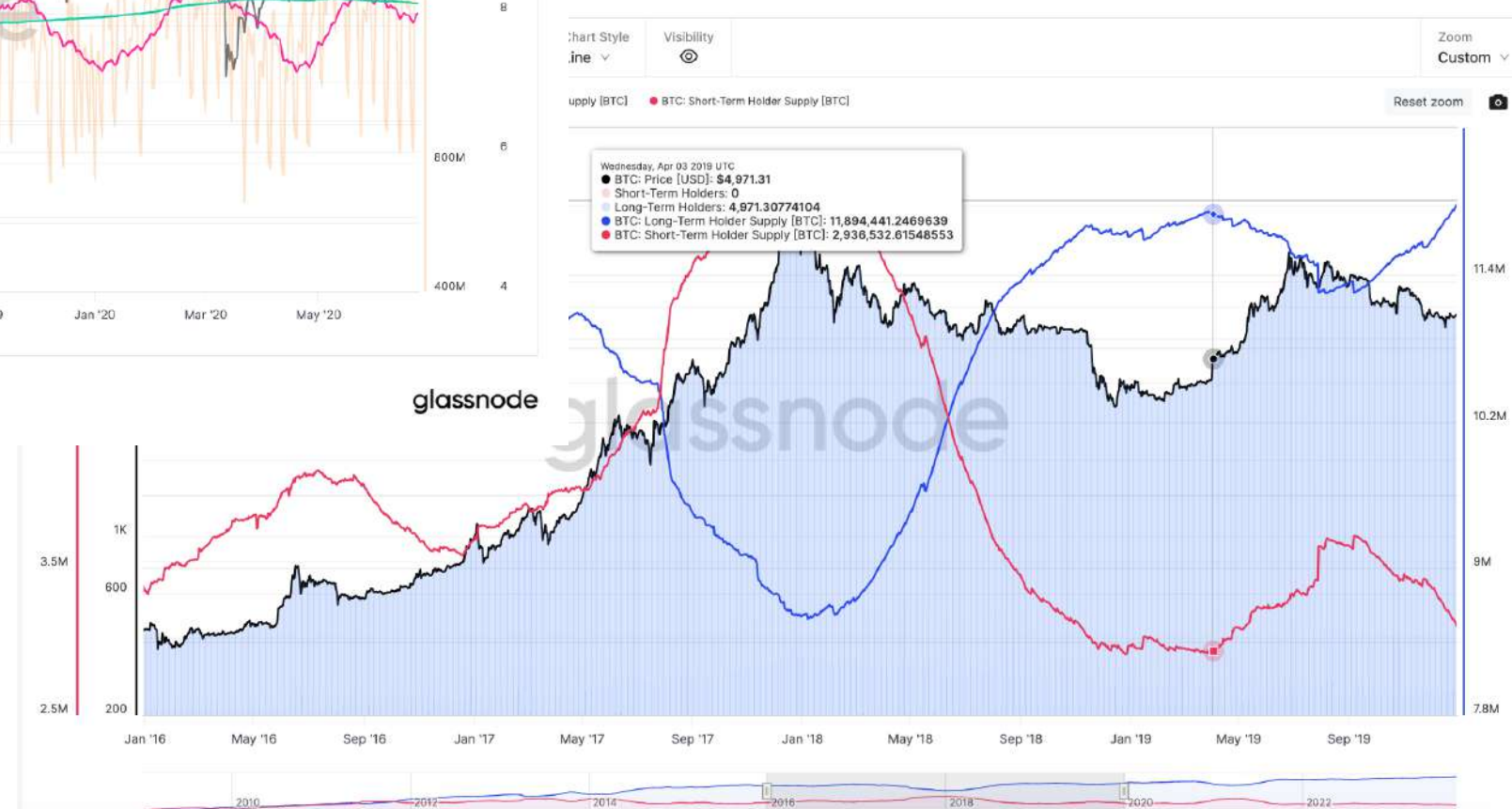
For example, **Exchange Volume Momentum** indicated a trend shift as the 30-day SMA surpassed the 365-day SMA. Meanwhile, **long-term holders** decreased, while **short-term holders** rose slightly. Both signals hinted at a potential opportunity to open a long market position.

Bitcoin: Transfer Volume Momentum (Entity-Adjusted)



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"Concurrently, there was a gradual decrease in long-term holders and a slight increase in short-term holders."



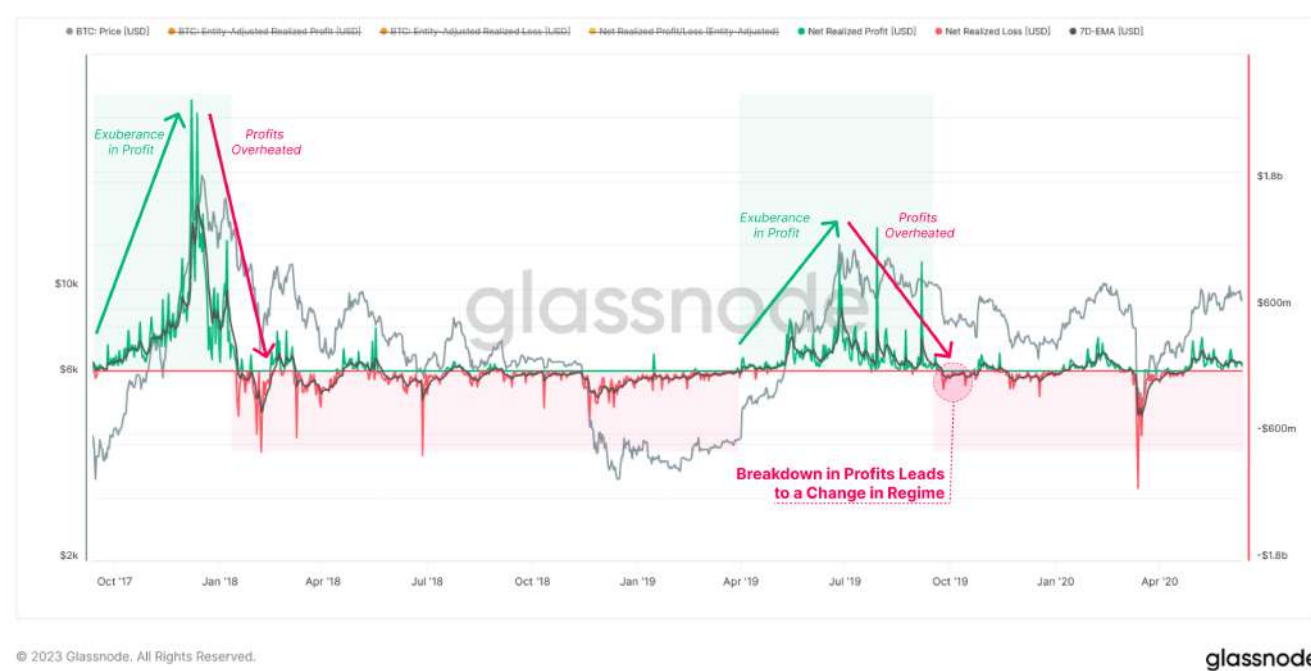
Timing the Market with On-Chain Analysis

The network activity and entity balance metrics provided crucial insights into the investment climate at the time. However, discerning the optimal exit point or identifying a time to short required gauging the investment weather required keeping the pulse on the profitability metrics as well.

In that regard, when prices reached around \$12K, there was a noticeable overheating in **profit and loss**, which persisted for a while before experiencing a significant deviation below.

This deviation marked a shift in market dynamics, with investors transitioning from buying their cost basis to selling it, indicating a change in investor psychology and an elevated risk perception.

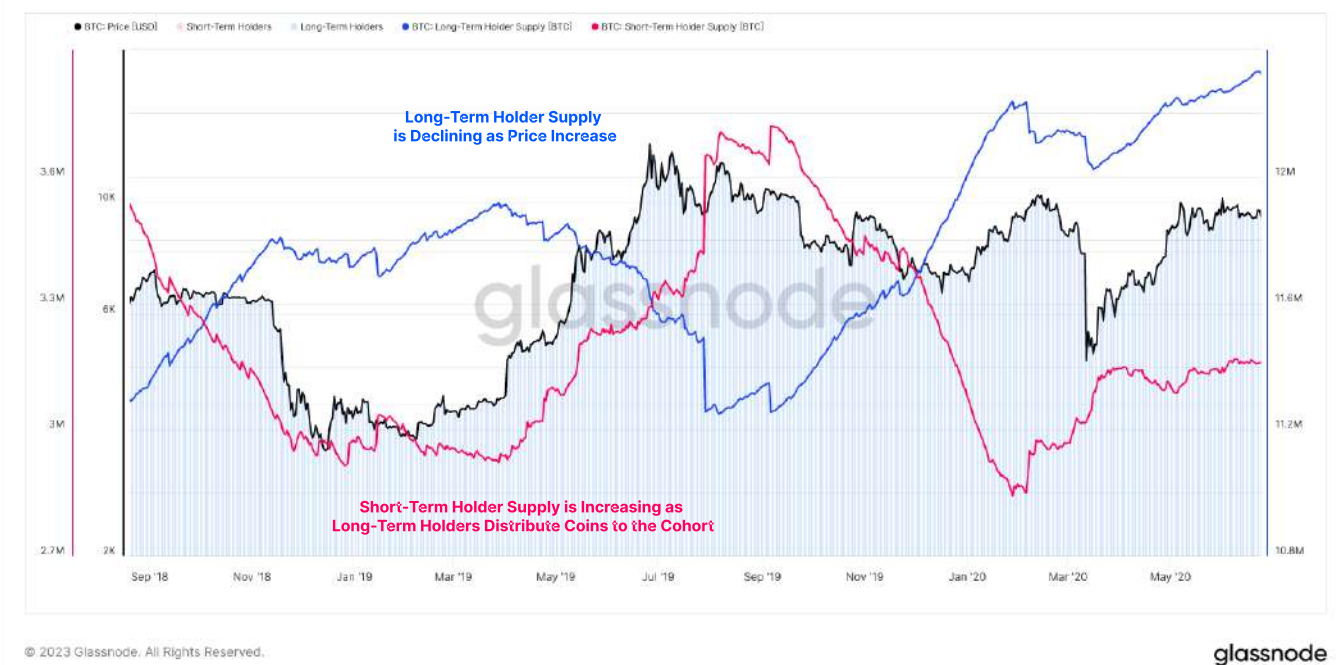
Bitcoin: Net Realized Profit/Loss (Entity-Adjusted)



At this point, traders could employ other metrics from our framework to optimize their next steps in this potentially volatile situation.

Notably, a massive surge in **short-term holders** around the same time was a typical sign of 'buying the top' FOMO, while the **shrimp supply** remained constant, indicating no influx of new retail investors to drive prices higher:

Bitcoin: Long/Short-Term Holder Threshold

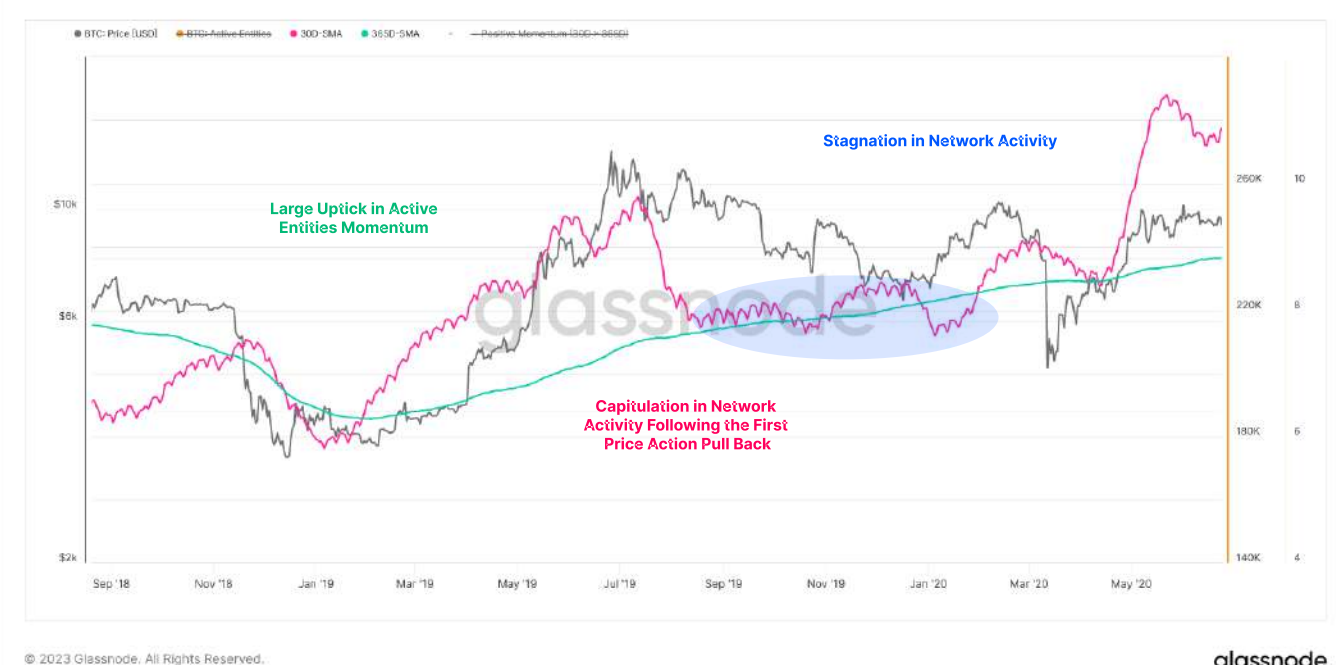


Bitcoin: Shrimp Net Position Change [Entities < 1 BTC]



Active addresses showed a distinct uptrend until the price topped near \$12K, yet these numbers never approached the highs seen in 2017/2018. Notably, active addresses plummeted even as the price saw just a modest drop. While the price managed to bounce back to \$11K from an initial dip near \$9K, active addresses maintained their descent.

Bitcoin: Active Entities Momentum



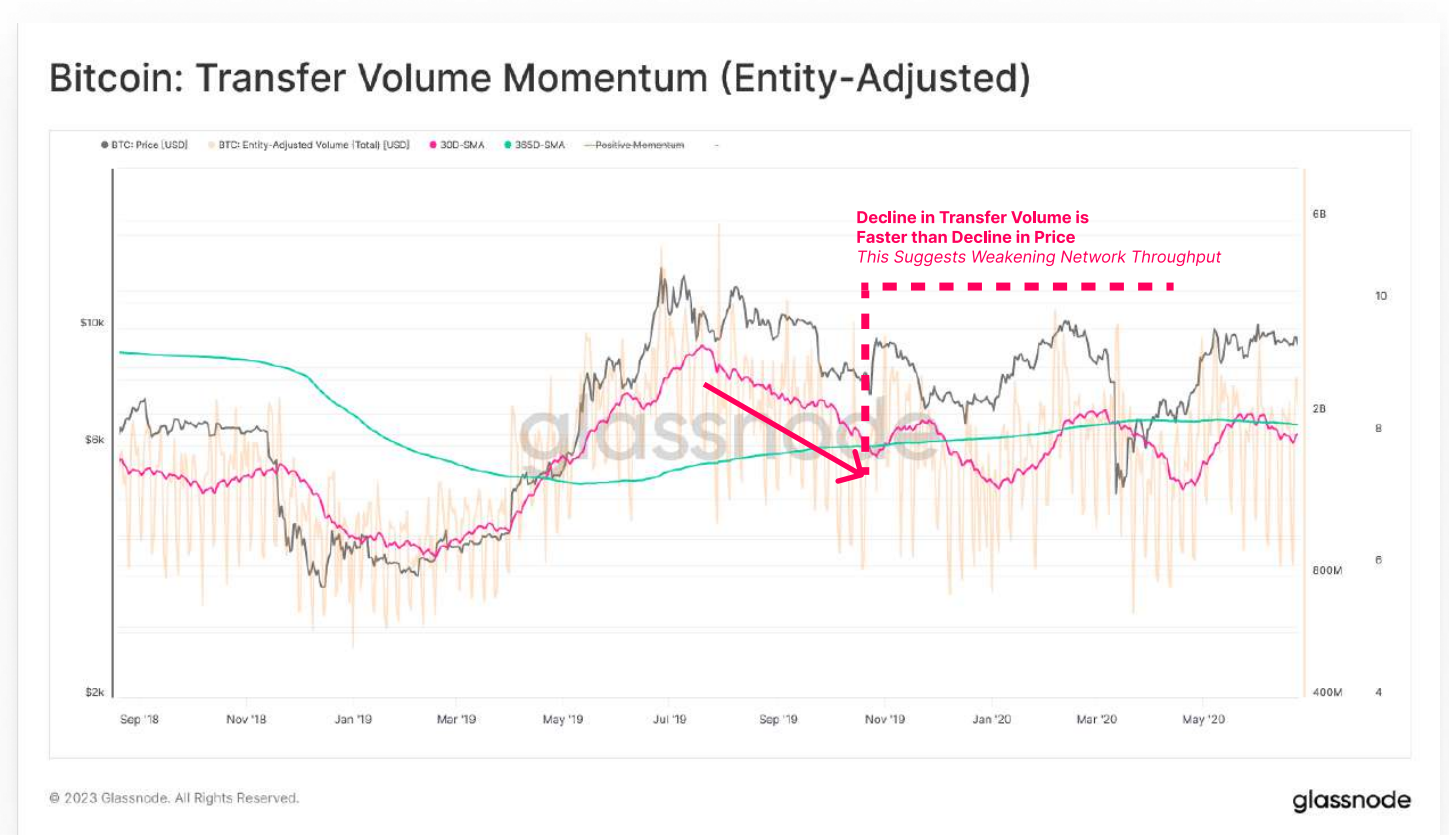


This divergence - where price appeared to rise without a corresponding increase in other relevant metrics in our framework- suggests a potential bearish signal. It hints that the upward price movement may not have been driven by organic activity but rather could be indicative of other forces at play, casting doubts over the sustainability of the price rally.

The transfer volume told a similar story, making new lows despite the price recovering to \$11K:

Conclusions

These observations would have suggested that \$11K was an opportune moment to short. This aligns with our analogy of weather and climate; the overall climate did not change, indicating that the market was experiencing a bear market rally rather than entering a new bull market.



Thus, a discretionary trader, armed with these insights and metrics, would have been well-positioned to navigate the market dynamics during the 2019 rally, making informed decisions on entry, exit, and shorting opportunities, and interpreting the market movements as indicative of the prevailing market climate.

Stay ahead in the cryptocurrency markets with Glassnode's exclusive insights!

Dive deep into weekly trends with Week **On-Chain**, unveiling innovative indicators to elevate your trading game. Or bridge the gap between traditional finance and the crypto realm with **Finance Bridge**, tailored for traditional financial entities and offering a macro lens on key on-chain metrics.

Harness the power of on-chain data and unlock unparalleled insights with Glassnode's suite of tools. Subscribe here: <https://forms.glassnode.com/newsletter>

Risk Management and Quantitative Analysis

In the previous sections, we explored how on-chain analytics and Glassnode's tools can help understand market trends and build strong trading strategies. Next, we will shortly present two specialized use cases that further highlight the practical value of on-chain analytics in different aspects of digital asset trading or investments.

The first one is a detailed framework for managing risks in crypto exchanges, which is crucial for hedge funds, asset managers, and similar entities with exposure to digital assets through these venues. The second one is designed for those interested in quantitative approaches, showing how Glassnode's innovative approaches to presenting on-chain data can be used to enhance backtests and modelling.

For a deeper dive into these use cases, you can refer to the linked documents, which act as comprehensive guides for institutional entities wanting to make the most out of on-chain analytics in these specialized fields.

Exchange Risk Management

Exchanges represent the biggest vectors of counter party risk in the digital asset ecosystem. Glassnode delivers proprietary tools that utilize on-chain analysis to identify, monitor, and manage exchange risk. These tools include:

- **In-depth charts:** Glassnode's charts monitor Bitcoin and Ethereum exchange flows, exchange tokens and composition of their asset mix. Updated every 10 minutes, they provide immediate insights into an exchange's financial health.

- **Alert system:** Users receive instant notifications when inflow and outflow volumes cross set thresholds, facilitating timely responses like further analysis or risk mitigation strategies.
- **Exchange dashboards:** These centralized dashboards streamline monitoring of major crypto exchanges, presenting BTC, ETH, and stablecoin data, along with transaction volumes in one view.

We have also developed an actionable framework for exchange risk management and mitigation that provides traders and investors with a step-by-step process to ensure swift identification of high-risk scenarios. This framework represents a multifaceted approach that based on the following exchange data:

- **Monitoring assets and reserves:** Liquid assets like BTC and ETH might indicate strength, while other volatile cryptocurrencies could hint at higher risk.
- **Tracking inflows and outflows:** Decreasing inflows can imply waning trader confidence, and large outflows might suggest uncertainty.
- **Exchange tokens:** The stability of an exchange token depends on its trading volume, ownership distribution and supply discrepancies.

Follow this [link](#) to download our comprehensive report which includes a case study of FTX collapse and shows how traders and investors can avoid such risks with Glassnode.



Quantitative Applications

Glassnode's high-fidelity on-chain and financial market data are perfect for the purposes of quantitative analysis and systematic trading. Using our data sets, quants can supercharge their models, expand backtests, and find new strategies to beat the market.

Here are some of the features that make Glassnode a perfect partner for quants venturing into the digital asset market:

- **Unrivalled metric library:** We have the longest-running on-chain data collection in the industry with 1000+ unique BTC metrics and extensive altcoin coverage.
- **Precise entity-adjustments:** Glassnode's industry-leading labelling and clustering technology removes noise and delivers a clear picture of market participant behaviour.
- **Performant, unified REST API:** With baseline latency of just 220 ms and support of up to 1200 calls per minute, our API is built for speed, efficiency, and precision, enabling seamless integration of on- and off-chain data with your models and automations.

Point-in-Time Metrics

Due to the dynamic nature of blockchains as well as our data clustering algorithms, some of our on-chain data sets related to specific entities such as exchanges may at times require revisions. This poses a challenge for quantitative traders who rely on stable data sets for precise modelling and backtesting.

While this problem isn't unique to Glassnode, we have developed a unique solution that is absent from our competitors' offering - immutable data streams known as Point-in-Time Metrics (PiT)

This targeted solution is designed to tackle specific issues like look-ahead bias, enabling you to optimise trading models, algorithms, and research publications without the limitations of mutable data.

In practical terms, PiT metrics provide snapshots of data at specific moments, effectively freezing them in time. By using this feature, the analyst can access historical snapshots of entity-adjusted data as it was available on specific dates. This allows for accurate backtesting and ensures a reliable evaluation of the strategy's performance.

Follow this [link](#) to learn more about data mutability in the cryptocurrency ecosystem and how Glassnode tackles this challenge using Point-in-Time metrics.

Comparing Mutable and Point-in-Time Metrics



The blue line represents mutable metrics, which show the most up-to-date knowledge about the blockchain, while the green line shows Point-in-Time metrics with unchangeable historical data.

Enhance Your Crypto Trading Strategies With Glassnode

Empower Your Crypto Trading with Glassnode's Sophisticated Tools

Don't let market uncertainties dictate your trading decisions. Harness the power of Glassnode's cutting-edge on-chain analytics to gain unparalleled insights into market trends, holder activities, and network dynamics. Leverage the advantages of our proprietary tools, including:

- In-depth market trend analysis to identify potential entry and exit points.
- Comprehensive holder activity insights to understand market saturation and accumulation phases.
- Detailed network dynamics to gauge overall market health and activity.

With Glassnode's advanced analytics, you can navigate the crypto market with enhanced precision and confidence, making informed trading decisions based on reliable data.

Contact Glassnode's Dedicated Sales Team

Ready to transform your trading strategy? Explore our platform with a free trial! Discover the power of Glassnode's 3,700 metrics, beautifully visualized charts, thematic dashboards, custom workbenches, and super fast API, and witness the transformative impact they can have on your trading strategies.

For a more detailed walkthrough, schedule a demo with one of our experts. We are excited to demonstrate how Glassnode can be a game-changer for your trading endeavors in the crypto space.

Take the initiative to refine your trading strategies in the crypto market: sales@glassnode.com

