Marketing Material

The Halving Hype

– Decoding Bitcoin's 2024 Halving

Xtrackers by DWS × galaxy

In A Nutshell

- Bitcoin halvings, which occur roughly every four years, are highly anticipated events in the cryptocurrency ecosystem. With each halving, the number of new bitcoins issued per block is reduced by 50%. Thus, Bitcoin's inflation rate is lowered, making Bitcoin a scarcer asset and increasing its attractiveness as a store of value over time.
- Halvings lead to nuanced technical and economic implications and were in the past followed by substantial bitcoin price increases. While halvings decrease Bitcoin's new supply and increase public attention, there are also security concerns due to decreased miner revenues.
- This halving differs from previous halvings and occurs during a time of changed macroeconomic circumstances, greatly increased Bitcoin accessibility via ETPs, and expanding utility for Bitcoin, which leads to new revenue streams for miners.

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Introduction to Bitcoin halvings

Like clockwork when the Bitcoin block number strikes a multiple of 210,000, which happens about every four years, a Bitcoin halving occurs.[1] This event, which is eagerly anticipated by the Bitcoin community, reduces the issuance of new bitcoins by half and thereby limits inflation of the bitcoin supply. As the cornerstone of Bitcoin's monetary policy, each halving marks a significant milestone in the evolution of the oldest and largest cryptocurrency.

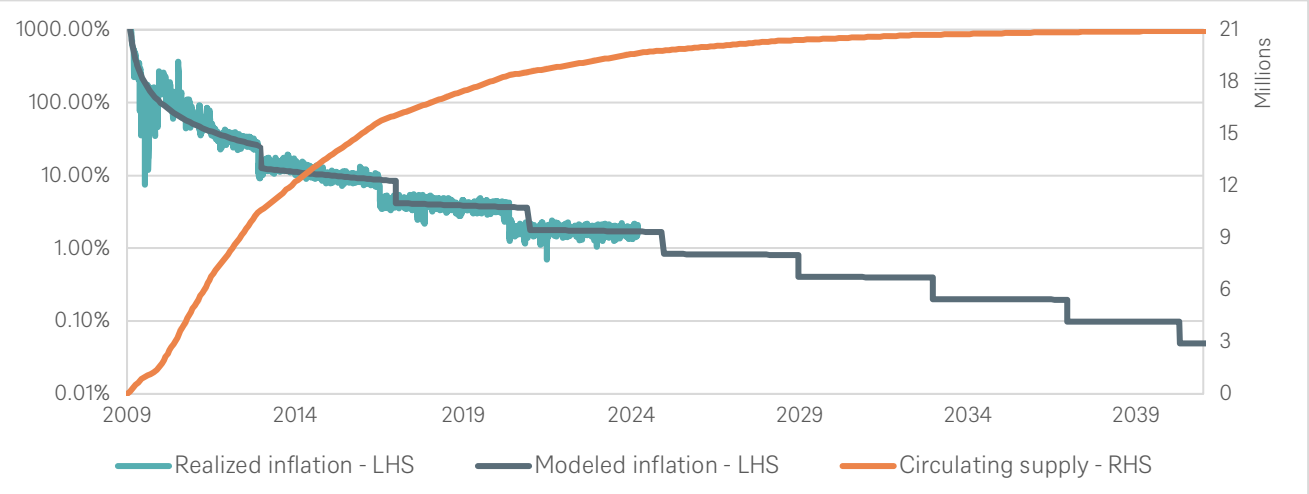
Bitcoin halvings capture the attention of Bitcoin enthusiasts, investors, miners and the broader public alike. With the next Bitcoin halving just around the corner, currently expected to occur on April 20th, 2024,[2] the anticipation of the event is growing. Join us as we explore the mechanics, historical trends, and potential implications of Bitcoin halvings.

Bitcoin halving mechanics

Bitcoin halvings reduce the miner block subsidy by half. This mechanism enforces Bitcoin's fixed supply of 21 million coins and thereby supports one of its core value propositions of scarcity. Each Bitcoin halving reduces the rate at which new bitcoins are created. Initially, the block subsidy was set at 50 bitcoins per block when Bitcoin launched in 2009. With the next halving, expected to occur in April 2024, the block subsidy will be reduced from 6.25 to 3.125 new bitcoins per block.

This halving will reduce bitcoin's annual inflation rate, the percentage of new coins issued per year divided by the current supply, to below 1%. By the end of this halving period, expectedly in 2028, Bitcoin's circulating supply will amount to more than 20.3 million bitcoins, representing approximately 97% of its total supply.

Figure One: Bitcoin inflation and supply



Sources: DWS International GmbH, 2024; Galaxy Research, as of March 2024.
Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

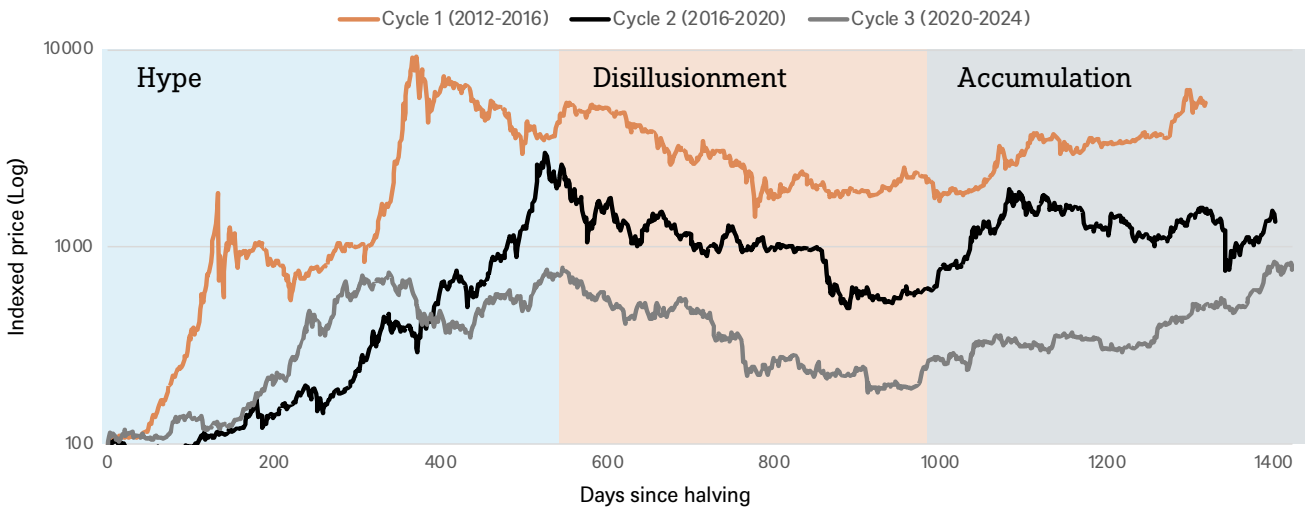
[1] So far, the Bitcoin network has experienced three halvings. The first one occurred in November 2012 (block 210,000), the second one in July 2016 (block 420,000) and the third one in May 2020 (block 630,000).
[2] Source: Coinmarketcap, as of April 12th, 2024

Newly issued bitcoins, the so-called "block subsidy", are currently the main source of income for Bitcoin miners. For each block that Bitcoin miners successfully add to the Bitcoin blockchain, they receive a block subsidy and the respective transaction fees. While varying significantly over time, the block subsidy has in the past on average accounted for approximately 94,95% of Bitcoin miners' income.[3] Thus, the Bitcoin price needs to continue to rise over time and/or transaction fees need to increase in order to maintain Bitcoin miners' revenue after halving events. As Bitcoin miners are economically incentivized to secure the network, their revenue directly translates into Bitcoin's security. For example, lower revenues could lead to some miners becoming unprofitable and thus ceasing their operations, leading to a lower degree of decentralization and a lower hashrate, i.e., computational power, securing the network.

Past halvings

The three previous halving cycles have shown that while halvings present challenges to miners, they may also offer opportunities for long term value appreciation of bitcoin (see figure 2). While past performance is not indicative of future results, analyzing historical data can offer valuable insights. Historically, halvings have framed bitcoin's four-year price cycles, with each halving date marking the beginning of a new cycle. Just as new technologies or applications progress through cycles of heightened expectations and dips of disillusionment, the price of Bitcoin has traced a similar trajectory, marked by periods of hype, disillusionment, and accumulation in each cycle. While these phases aren't rigidly defined or fully synchronized with each other, the pattern indicates that the market views each halving cycle as if it marks the start of a fresh new technological era. In the past three halving cycles, periods leading up to the halving event often saw an increase in interest in the asset class and subsequent price increases. However, the immediate aftermath of a halving has seen more volatility and mixed reactions as miners readjust their operations and market participants adjust their positions and take profits. Nonetheless, in the months and years that follow, the price has trended upwards, suggesting that the diminished new supply issuance puts upward pressure on bitcoin prices over the long term. However, with a limited sample size of only three halvings, and all halvings having occurred in different macroeconomic environments than the current one, it remains to be seen how the upcoming halving will play out.

Figure Two: Historical data on bitcoin price performance following past halvings



Source: Galaxy Digital, as of April 4, 2024; Data sources: bitcoin prices from Coinmarketcap, halving dates and phases from Galaxy Research.
Past performance is not a reliable indicator of future returns.

[3] Source: Galaxy Research, as of April 11, 2024; Miner revenues from January 2020 to December 2023

Consequences of Bitcoin halvings

Halvings are key events for the entire Bitcoin ecosystem. Besides assessing past performance cycles during the previous halving phases, nuanced technical and economic implications can be evaluated.

Potential positive consequences:

+ **Scarcity and confidence in Bitcoin's value proposition:** Each halving reinforces Bitcoin's perfect scarcity and its value proposition as a digital store of value. Over time, with each halving bitcoin's inflation rate decreases, making Bitcoin a more attractive store of value.

+ **Reduction in available supply:** The reduced number of newly issued bitcoins may reduce available supply on the market and may thereby, in case of equal or heightened demand, create upward price pressure in the market.

+ **Increased public attention:** Bitcoin halvings tend to garner media attention and public interest, raising awareness about Bitcoin and cryptocurrencies more generally. This heightened attention may stimulate adoption.

Potential negative consequences:

– **Short-term volatility**: Immediately after Bitcoin halvings, bitcoin prices have often exhibited heightened volatility, with market participants readjusting their positions and reacting to the decreased supply issuance.

– **Miner profitability:** Halvings impact miners' profitability, as their currently most relevant income source, the block subsidy, gets reduced by 50%. This leads to miners with higher operating costs needing to seize their operations. Thus, in the long term, consolidation and centralization of mining power may increase.

– **Network security concerns:** A decline in miner participation following a halving could weaken the overall network security. With decreased miner activities due to lower economic incentives, Bitcoin network attacks could become less costly.

How this time is different

The upcoming halving occurs at a significantly different time compared to the previous three cycles. For the first time in history, the bitcoin price has reached a new all-time high before the halving. Many investors now being able to gain easier access to bitcoin, heighted interest rates and new Bitcoin use cases all indicate how this time is different.

– **Enhanced accessibility via ETPs:** In about three months of trading, US Bitcoin spot ETFs have garnered over 840,000 bitcoins, more than 4% of total circulating supply,[4] underscoring the pivotal role of traditional financial instruments as an access point for many investors.

– **Macroeconomic environment:** This halving unfolds within a substantially different macroeconomic context. Previous halvings occurred during periods of exceptionally accommodative monetary policy, while this halving occurs in a time where market participants foresee interest rate cuts by major central banks.[5]

[4] Sources: Bloomberg Intelligence, Galaxy Research, as of April 10, 2024
[5] Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

– **Bitcoin block space evolution leading to higher transaction fees:** While miners' revenue from the block subsidy will halve, revenue from transaction fees is anticipated to rise due to increased demand for Bitcoin block space. Innovations, prominently Ordinals, have elevated transaction fees to at times constitute more than 25% of total average mining rewards,[6] a significant uptick compared to the 2023 average of 5.87%.[7]

Appendix

Xtrackers by DWS × galaxy

In 2023, Xtrackers by DWS, a large and established provider of high-quality exchange-traded products, and Galaxy, a financial services innovator in the digital asset and blockchain technology sectors have formed a strategic alliance to advance European digital asset adoption. Both allies are focused on an education-first approach to digital assets and provide simple, efficient and reliable access to selected cryptocurrencies.

The strategic alliance leverages the combined expertise and track record of two leading players in investing and digital assets. Xtrackers by DWS is a large and established provider of high-quality exchange traded funds (ETFs) and exchange traded commodities (ETCs). Providing efficient 'passive' exposure to diversified indices or to single commodities, Xtrackers ETFs and ETCs provide a comprehensive set of dependable investment tools for effective portfolio allocation.

Galaxy is a global digital asset financial services institution that offers a broad range of financial services across its three business units, global markets, asset management and digital infrastructure solutions. As of Feb 29, 2024, Galaxy's Asset Management unit oversaw USD 10.1 billion in digital asset AUM across a broad range of passive, active, and venture strategies.

[6] Source: Galaxy Research, February 12, 2024,
[7] Source: Coin Metrics, April 12, 2024

Glossary

Bitcoin: The first and largest digital asset, enabling decentralized peer-to-peer transactions. Bitcoin with a capital B refers to the blockchain network, while bitcoin with a lower-case b refers to the cryptocurrency.

Block: A block is a data structure where digital transactions are stored. They are the basic building block of blockchains.

Blockchain: A blockchain is a chain of blocks of data that are immutably chained together via cryptography and stored on a distributed and decentralized database.

Blockchain transaction fees: Blockchain transaction costs, also known as transaction fees, are fees paid by users for the processing and validating of their transactions on a blockchain network. These fees are typically paid in the native cryptocurrency of a network and serve as an incentive for miners or validators to include transactions in a block and secure the network. Transaction costs vary and depend on factors such as network congestion, transaction size, and priority set by users.

Coin: See native cryptocurrency.

Cryptocurrency: A digital asset recorded on a Blockchain that is often neither issued nor controlled by any centralized authority.

Digital asset/crypto asset: Digital assets represent value, rights and obligations on a blockchain.

Exchange-traded commodity / certificate (ETC): ETCs are usually secured debt obligations that are backed by one or more underlyings. ETCs can be traded on exchange.

Exchange-traded fund (ETF): A security that tracks an index or asset like an index fund, but trades like a stock on an exchange.

Exchange-traded product (ETP): An umbrella term for exchange-traded funds (ETFs), exchange-traded commodities / certificates (ETCs) and exchange-traded notes (ETNs).

Miner: A participant in the consensus of a proof-of-work blockchain, adding blocks to the blockchain for rewards.

Mining: Mining is the process of creating valid new blocks containing transactions for proof-of-work based blockchains. To link a new block to the last one, a computationally intense mathematical puzzle must be solved.

Native cryptocurrency: In the context of cryptocurrencies, native to a blockchain refers to the primary and original cryptocurrency of a specific blockchain. A native cryptocurrency typically plays a central role in the consensus mechanism of its blockchain and is used for paying transaction fees in the network.

Ordinals: Bitcoin Ordinals are digital assets attached to a satoshi, the lowest denomination of a bitcoin, through a process called inscription. The Ordinals protocol allows users to create NFTs, non-fungible tokens, on Bitcoin. Ordinals have created an additional use case for Bitcoin beyond its use as a means of payment and store of value.

Proof-of-work (PoW): A blockchain consensus mechanism, where miners compete to solve computationally intensive puzzles to validate transactions and create new blocks.

Cryptocurrency specific risks

Cryptocurrency price volatility: High intra-day price volatility of cryptocurrencies may result in potential losses for investors

Blockchain technology risk: Nascent blockchain technology may result in system disruptions, cyber security risks, source code risks, hacking attempts, forks, problems relating to activity peaks, etc.

Regulatory and policy risk: Ongoing changes in regulations and policies in relation to cryptocurrencies may lead to adverse impacts for investors

Counterparty risk: Crypto brokers and counterparties (e.g., cryptocurrency custodians) may be less established compared to traditional counterparties

Liquidity risk: Instability in cryptocurrency markets may lead to (temporary) illiquidity of underlying assets

Adverse Environmental and Social Impacts (ESG): Certain cryptocurrency features such as the consensus mechanism may lead to adverse environmental and social impacts

Fraud risks: Cryptocurrencies may be used for criminal activities (e.g., ransom software, money laundering, terrorism financing)

Operational disruption: Immature processes in combination with above general risks (e.g., blockchain technology risk) may lead to operational disruption and risks

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