NYDIG

MARCH 2022

Bitcoin **Halvings**

WHY THE MINING REWARD IS CUT IN HALF EVERY FOUR YEARS

TABLE OF CONTENTS

Bitcoin Halvings

Bitcoin is, by design, resistant to change.

However, every 210,000 blocks (roughly every four years), the protocol cuts the reward earned by miners for finding a valid block in half. This regular event is known as a halving.

So far, Bitcoin has undergone three halvings. The original block subsidy of 50 bitcoins was cut to 25 in 2012, 12.5 in 2016, and 6.25 in 2020. In total, the block subsidy will be halved 33 times. The final cut, which will happen around the year 2140, will mark the end of the block subsidy and signal that miners have created all 21 million bitcoins.

Like central bank interest rate announcements, halvings are highly anticipated events. But, unlike interest rate decisions, the adjustment leaves no room for conjecture. As a result, there's no need to parse past statements or evaluate forward guidance. Instead, Bitcoin reduces the block subsidy regularly and at a fixed amount, allowing network participants years to prepare for their impact.

Why Does Bitcoin's Subsidy Halve?

Given the significance of halvings, it might seem odd that they don't get a single mention in the Bitcoin white paper. Halvings are part of the protocol's code, but Satoshi (the creator(s) of Bitcoin) didn't explain why.

That said, it's not hard to guess what Satoshi's reasoning might have been.

First, Satoshi designed Bitcoin to resemble a commodity. A common characteristic between Bitcoin and gold, for example, is that they both have finite supplies. Halvings infuse bitcoin with another attribute of non-agricultural commodities, diminishing supply growth. Again, consider gold. As miners unearth the yellow metal, there are fewer substantive deposits to be found. Over time, gold miners expend more effort to pull gold out of the ground. In the same way, a halving lowers bitcoin mining's yield.

Second, halvings could have been included as a way to ensure an equitable distribution. The first miners, who naturally were taking the most risk by contributing resources to an unproven network, were enticed to do so with larger rewards (in bitcoin terms) than those who would join at later dates. By this line of thinking, halvings calibrate risk and reward.

Finally, halvings may have been included in anticipation of bitcoin becoming more valuable. By this logic, the block subsidy shrinks over time because it takes fewer bitcoins to compensate miners for their work in dollar terms.

How Halvings Affect Miners

All else being equal, halvings slice miners' profits in half. Thankfully, this doesn't come as a surprise. Miners have plenty of time to plan for lower block subsidies. Between halvings, they look for ways to streamline their operating costs.

So far, halvings haven't corresponded with significant drops in Bitcoin's hash rate. While less profitable miners inevitably face pressure, and some do close shop, those that remain have historically picked up the slack.

Nonetheless, this doesn't preclude the possibility that a future halving could, at least temporarily, trigger a material drawdown of the network's hash rate.

Bitcoin's Price and Halvings

There's no shortage of opinions when it comes to the topic of halvings and the price of bitcoin.

On the one hand, because halvings are as certain as the seasons, some argue that they are "priced in." By this logic, bitcoin's price at any given time accounts for its disinflationary supply. On the other hand, because Bitcoin is still proliferating, the impact of halvings may not be well understood by all users. For example, new bitcoin holders who bought between halvings might not know that the network curtails the issuance rate every four years.

At first glance, bitcoin's price chart wouldn't seem to reveal any direct link between halvings and price. However, each of bitcoin's most notable bull markets has kicked off within a year of a halving. This correlation lends credence to the idea that halvings mark the beginning of a new cycle in bitcoin's ongoing price discovery.

Key Takeaways

01

Halvings are pre-programmed and predictable cuts to the block subsidy. They occur every 210,000 blocks (approximately every four years) and, as the name suggests, they reduce the block subsidy by half.

02

No explicit reason was ever given for why halvings were included in the protocol's design. It is assumed that halvings are meant to solidify bitcoin's resemblance to commodities such as gold that have diminishing supplies.

03

Miners have years to plan for halvings. Still, with each halving, some miners will find that they can no longer operate at a profit.

04

Whether halvings impact bitcoin's price is a much debated topic. Some argue that because halvings are certain events, they are priced in. Others believe that they have historically been associated with the beginning of bull markets.

DISCLOSURES

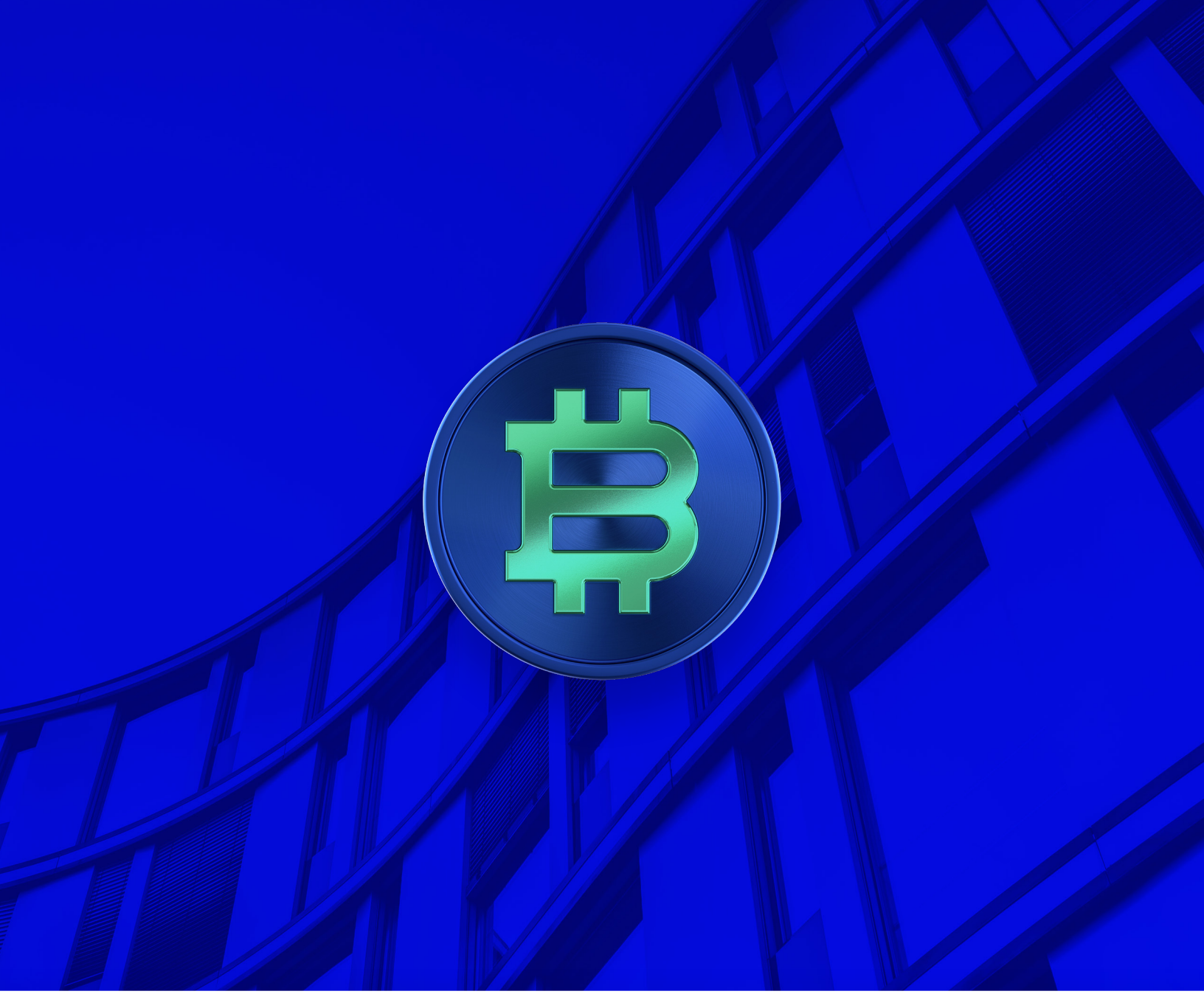
This report has been prepared solely for informational purposes and does not represent investment advice or provide an opinion regarding the fairness of any transaction to any and all parties nor does it constitute an offer, solicitation or a recommendation to buy or sell any particular security or instrument or to adopt any investment strategy. This report does not represent valuation judgments with respect to any financial instrument, issuer, security or sector that may be described or referenced herein and does not represent a formal or official view of New York Digital Investment Group or its affiliates (collectively, "NYDIG").

It should not be assumed that NYDIG will make investment recommendations in the future that are consistent with the views expressed herein, or use any or all of the techniques or methods of analysis described herein in managing client accounts. NYDIG may have positions (long or short) or engage in securities transactions that are not consistent with the information and views expressed in this report.

The information provided herein is valid only for the purpose stated herein and as of the date hereof (or such other date as may be indicated herein) and no undertaking has been made to update the information, which may be superseded by subsequent market events or for other reasons.

Information furnished by others, upon which all or portions of this report are based, are from sources believed to be reliable. However, NYDIG makes no representation as to the accuracy, adequacy or completeness of such information and has accepted the information without further verification. No warranty is given as to the accuracy, adequacy or completeness of such information. No responsibility is taken for changes in market conditions or laws or regulations and no obligation is assumed to revise this report to reflect changes, events or conditions that occur subsequent to the date hereof.

Nothing contained herein constitutes investment, legal, tax or other advice nor is it to be relied on in making an investment or other decision. Legal advice can only be provided by legal counsel. NYDIG shall have no liability to any third party in respect of this report or any actions taken or decisions made as a consequence of the information set forth herein. By accepting this report, the recipient acknowledges its understanding and acceptance of the foregoing terms.



NYDIG

Interested In Learning More?

NYDIG.COM/RESEARCH