BITCOIN HALVING AND MINING UPDATE: MID-2024 PERSPECTIVE

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We just passed the 20th of July, 2024, and approximately 90 days have passed since the pivotal bitcoin halving event in April. As a reminder, when we say “halving,” we are referring to the reward paid to miners for correctly solving the proof-of-work algorithm. Roughly every four years, the bitcoin protocol specifies that the reward paid to miners is cut in half (50, 25, 12.5, 6.25, 3.125, etc.). Why is the block reward reducing? Well, there will only ever be 21 million bitcoin, so for that statement to be true, there needs to be a mechanism to create the new supply, but not to do so indefinitely, and to ultimately wind down as the system gets closer and closer to this level. While Bitcoin was flirting with all-time high price levels earlier in the year, nearing $74,000, it is clear that the near-term trend in the price of this asset has changed.

The hypothesis: If there is less new supply coming online but the demand remains at a similar level, then there is a rationale—as is the case with any commodity—for the supply/demand balance to exert upward pressure on the price.

Historically, there has been significant price appreciation following halving events, but this has not been “immediate.” We have seen three halving events so far, and we also caution any investor that the past is not an exact guide to the future—we recognize that we do not know with certainty what may happen after this fourth halving.

Two of the last three halving events saw delayed price appreciation in bitcoin. In figure 1, there is a reason why the chart is showing the behavior of the bitcoin price over a period roughly 1,000 days post-halving, which would equate to something like 2.5 years. We do this predominantly in recognition that bitcoin’s price volatility is very high, so looking at things over any short-term horizon makes it difficult to glean any worthwhile insights. Over the short term:

- Many different macroeconomic variables can influence the price of bitcoin. For example, in 2024, many riskier, more speculative assets are trading in a manner where prices appreciate when interest rates are expected to fall, and prices fall when interest rates are expected to rise.
- Over a longer time, the fact that bitcoin is known as a “hard” asset—meaning no entity can increase the supply on a whim—can have a bigger influence. We know that the supply of fiat currencies can be increased whenever the respective governments decide to do so—so the further printing of money plus the degree of debt and deficits currently employed by Western governments can have a bigger impact on driving bitcoin’s price higher—but these details would likely have little to no influence in shorter time horizons.

To keep things in context, bitcoin closed just under $67,000 on the halving date of April 20, not too far from the current price of $63,000 as of the time of writing.

Figure 1: Bitcoin Price Performance Post Historical Halving Events

Sources: Glassnode, WisdomTree, as of 6/26/24. Rebased to 1 in from halving date. The vertical red bar indicates where we are as of June 26, 2024. Each halving date is different, but the chart is measuring roughly 1,000 days after each halving event, except for the most recent, where we are limited only to what can be seen up to June 26, 2024. **Bitcoin is highly speculative and involves a high degree of risk, including the potential for loss of the entire investment. An investment in bitcoin involves significant risks (including the potential for quick, large losses) and may not be suitable for all investors.**

Challenges for Miners

Bitcoin is a network, and bitcoin miners perform an important function to secure the network and ensure its capability to run effectively as designed. If one is looking at bitcoin, one should also understand the basics in terms of how miners are incentivized.

It is often reported that the bitcoin network requires a lot of electricity. It is the miners who are paying for that electricity in order to run specialized hardware designed to solve the bitcoin protocol, securing the network and creating the new blocks in the blockchain. In a sense, the electricity or energy is the cost, and the block reward is the revenue.

A halving of the block reward for the general miner, all else being equal, means potentially less revenue per block mined. We say “potentially” because if bitcoin’s price is appreciating quickly, the value of 3.125 bitcoin (the reward) can be higher. The number of bitcoin in the reward is constantly up until the next halving, but the price per bitcoin is not. On the other hand, the price of electricity is market-driven and largely dependent on where the mining operation is located.

If bitcoin’s price is not appreciating quickly and electricity is expensive, it is possible that the general miner, with a lower block reward, will see their profit margin compress or even disappear. This does not mean that miners immediately go out of business, but it is important to keep the general economics in mind as we all continue to watch how the market evolves.

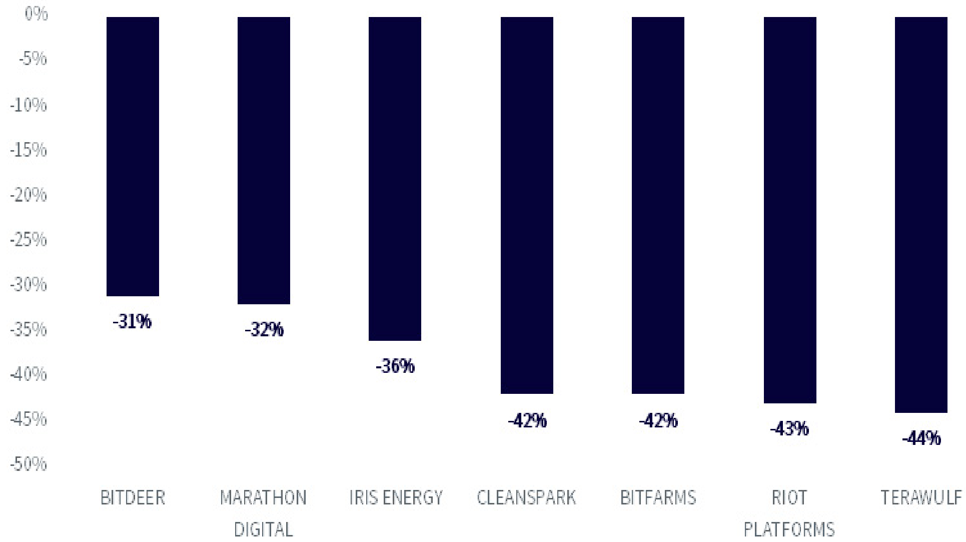
Post-Halving Mining Industry Developments

May’s bitcoin production saw a decrease compared to April due to the reduction in rewards resulting from the halving. Breaking this down in figure 2:

- Bitdeer, Marathon Digital, Iris Energy, Cleanspark, Bitfarms, Riot Platforms and Terawulf are all major mining operations.

- When we see that Bitdeer is associated with a -31%, this means that the supply of bitcoin that Bitdeer was able to mine in May 2024 relative to April 2024 was 31% lower. Each of the other numbers in figure 2 can be interpreted analogously.

Figure 2: May 2024 Month-over-Month Production of Bitcoin (BTC)



Sources: WisdomTree, Blockworks, https://blockworks.co/news/who-mined-most-btc-since-bitcoin-halving. These seven miners were shown due to data availability. **Bitcoin is highly speculative and involves a high degree of risk, including the potential for loss of the entire investment. An investment in bitcoin involves significant risks (including the potential for quick, large losses) and may not be suitable for all investors.**

The miners are responding to the challenges that they are currently facing.

- **Mergers and Acquisitions Activity:** The sector is seeing increased M&A activity, best exemplified by Riot Platforms' attempted hostile takeover of Bitfarms.[1] This is arguing for the path of greater scale leading to a better ability for miners to weather the storm of greater pressure on their potential profit margins.

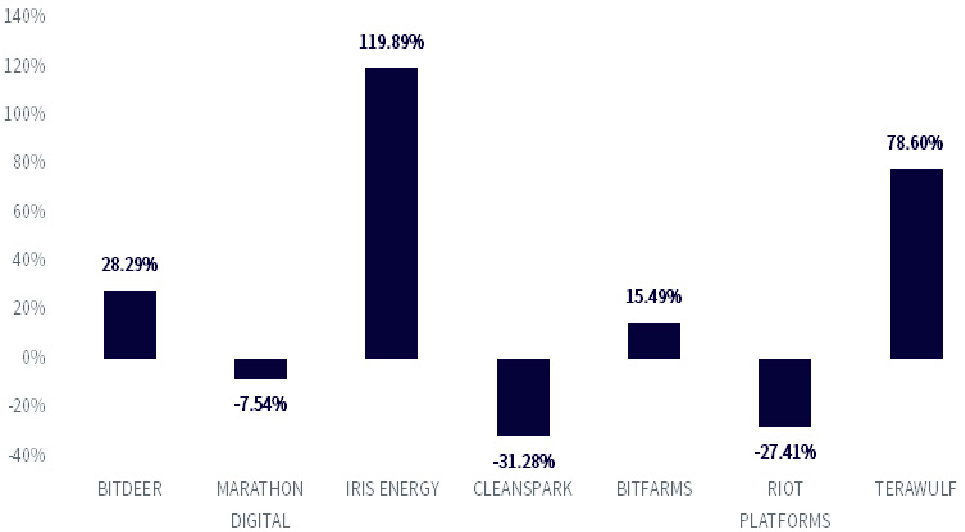
- **Operational Efficiency Focus:** Mining firms are investing in improved computing infrastructure to improve their ***hash rate***,[2] increasing their chances of success in receiving block rewards. If we think of M&A activity leading to individual miners with bigger operations—more systems designed to generate those new blocks—then increasing the hash rate could be interpreted as getting more out of each piece of hardware.

- **Diversification of Revenue Streams:** Companies like Terawulf and Iris Energy are exploring new avenues, such as offering their computing infrastructure for AI model training, capitalizing on high demand in this sector.[3,4] This is very interesting, recognizing that bitcoin mining is really just one application for an accelerated computing platform, and it could be interesting if certain firms can dial up or dial down their exposure to something like training AI models during times when this could be a better source of revenue than bitcoin mining.

There is a notable divergence in performance within the mining space. Well-capitalized and efficient firms are better positioned to thrive in an increasingly competitive ecosystem. Those that have been nimble and quick to adjust to the changing market dynamics have so far outperformed their peers.

In figure 3, we see how the miners shown in figure 2 have done in terms of share price performance over the past three months. Bitcoin mining company share price performance, we should note, can be extremely volatile, but we show these figures predominantly to emphasize that different miners have been able to respond differently to a challenging set of circumstances.

Figure 3: Three-Month Share Price Performance of Respective Bitcoin Miners



Source: Bloomberg, as of 6/26/24. These seven minders were shown due to data availability. **Bitcoin is highly speculative and involves a high degree of risk, includingthe potential for loss of the entire investment. An investment in bitcoin involves significant risks (including the potential for quick, large losses) and may not be suitable for all investors.**

Conclusion

As we navigate the post-halving landscape, consider a long-term perspective. Historical patterns suggest that significant price appreciation may not be immediate but has tended to evolve over several months following the halving event. Bitcoin’s deflationary nature and transparent monetary policy make it a compelling, in our opinion, with each halving event presenting an opportunistic entry point into the asset class due to the supply constraints it introduces, which has historically led to upward pricing pressure over the course of the following two-and-a-half years.

As a result of this event, the bitcoin mining industry is adapting, with efficient and innovative firms poised for growth ahead, amidst increased pressure from reduced bitcoin block rewards. While patience is required in the short term, the long-term prospects for bitcoin and the mining sector remain promising.

[1] https://www.bloomberg.com/news/articles/2024-05-28/riot-platforms-pursues-takeover-of-rival-bitcoin-miner-bitfarms

[2] A measure of computational power that is being used to mine and process transactions on a proof-of-work blockchain, such as bitcoin.

[3] https://investors.terawulf.com/news-events/press-releases/detail/79/terawulf-announces-may-2024-production-and-operations-update

[4] https://www.afr.com/technology/how-this-aussie-bitcoin-miner-is-cashing-in-on-the-nvidia-ai-boom-20240616-p5jm6w

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