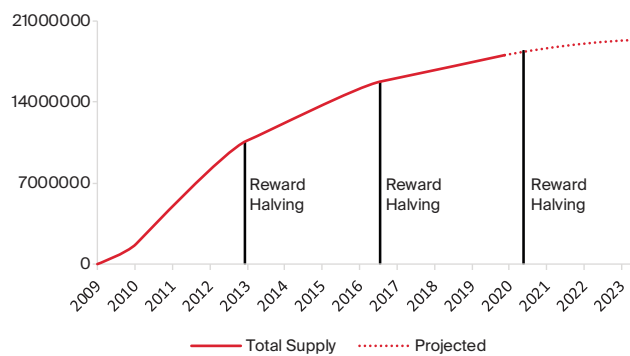


The two last “halvening” events, which cut the block reward handed out to miners in half, occurred in November 2012 and July 2016. Following the 4-yearly rhythm that is deeply embedded in Bitcoin’s protocol code, the next “halvening” is set to take place around May of 2020.

Bitcoin’s “Monetary Policy” Changes in 2020

At block number 630’000, the reward handed out to miners for finding the block will be reduced from the current 12.5 BTC to 6.25 BTC. The predefined schedule for issuing new bitcoins ensures scarcity: There will never be more than 21 million BTC in circulation, and any attempt to change that – e.g. through a hard fork – will most likely encounter massive resistance from the Bitcoin community.

BTC Total Supply



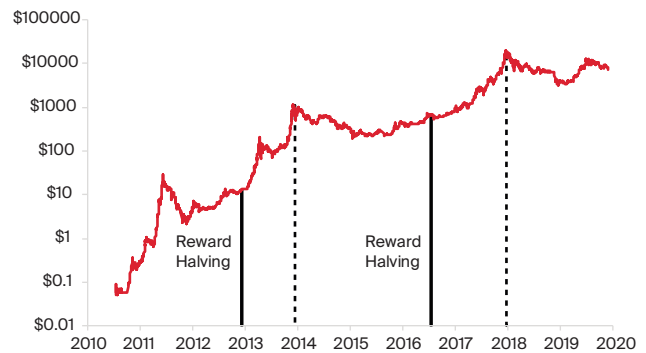
Source: blockchain.com, Bitcoin Suisse Research.

Bitcoin issuance halves every 210’000 blocks, or approximately every 4 years. Currently, the rate at which bitcoins are issued to miners sits at about 3.6 % of the total supply per year. In May 2020, this number will be reduced to about 1.8 %.

The maximum supply of 21 million BTC will be reached in 2140. However, since issuance slows down with time due to the halvings, the majority of bitcoins that will ever be in existence have already been mined today. The current total supply sits at around 18 million BTC, or 85.7 % of the maximum supply. Additionally, it is worth noting that a significant number of bitcoins have most likely been lost – meaning the original owner has lost access to the private key that controls them. A study² estimates that 2.3 to 3.7 million BTC have been lost permanently, which further reduces the effective total supply.

In the past, the block reward halvings have led to extended price rallies following the event.

BTCUSD



Source: 99bitcoins.com, Bitcoin Suisse Research.

The Bitcoin price has increased significantly following the previous reward halvings. From the time of the halvening (black line) to the next peak (dashed line), returns on investment of 9’143 % and 2’890 % were achieved, respectively.

The question is now whether the third reward halvening will lead to a similar price rally. In principle, the halvening is a predictable event, and all information is publicly available – the supply side increase of the supply and demand equilibrium will be lower. Thus, under the efficient-market hypothesis, the halvening should be “priced in” – however, this was not the case for the first two halvings as Bitcoin’s price history shows. In a network whose economic incentives for miners are directly correlated to network security due to higher or lower hashrate, price is certainly a non-negligible variable.

Effects of the Halvening

After May 2020, the block reward will pay less for network security. This will heavily impact the economics of the mining business. The cost to mine one BTC depends on a variety of factors, such as electricity costs, mining difficulty and hashrate per unit of power. A recent study estimated the cost to mine 1 BTC at an electricity price of \$0.05/kWh to be around \$5.6k.³ This cost will increase considerably post-halvening, affecting especially miners using older mining gear and leading to the obsolescence of equipment with lower hashrate-to-power ratios.

In the past, however, halvings have not led to decreases in hashrate (see page 20). After both instances, the subsequent price rallies ensured that miners remained profitable. The time after the first