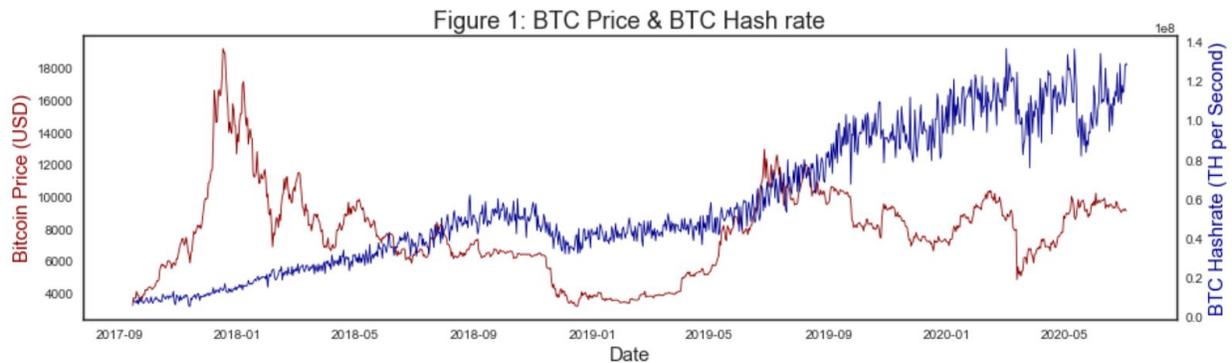


Bitcoin Hash Rate and Mining Difficulty Analysis

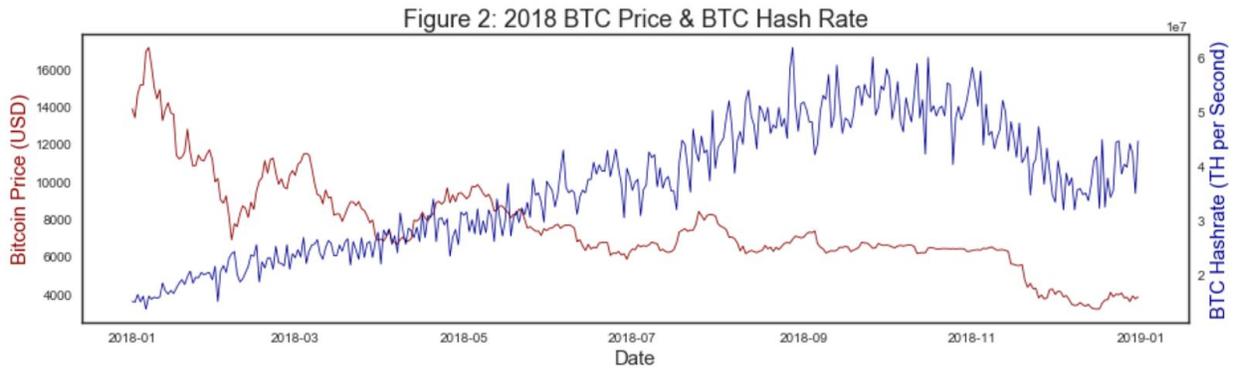
Author: Joel Ochoa

RedBlock would like to thank [Cryptoquant.com](https://cryptoquant.com) for their support in providing us with real time on-chain and market data.

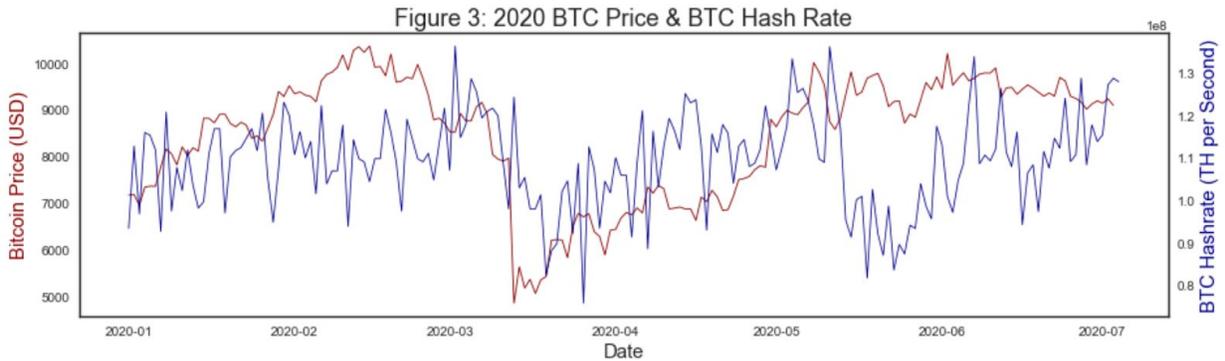
BTC Hash Rate Analysis



Hash rate is a measure that represents the speed that cryptocurrency miners need to confirm transactions on the blockchain. A high Bitcoin hash rate is an indicator of the health of the Bitcoin network. The higher the hash rate, the more secure it is against malicious actions such as 51-percent attacks. Thus, an increase in Bitcoin's hash rate represents higher security in the network, bringing greater confidence to Bitcoin investors. Figure 1 shows that the Bitcoin network hash rate has grown since 2017. However, from 2017 to 2020, there have been three main significant hash rate drops: one of 45.9% in 2018 and two more of 40.9% and 37.4% in 2020.

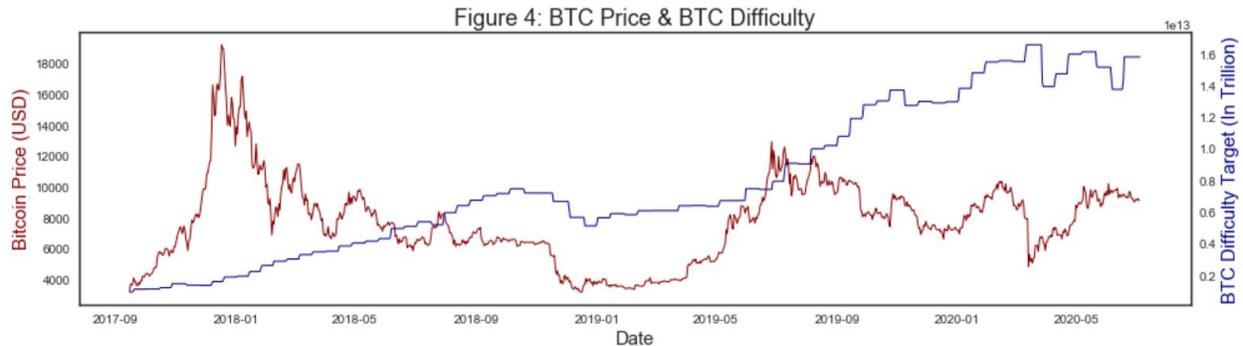


Based on Figure 2, the first drop happened at the same time that the price of Bitcoin plummeted 76% to a 15-month low at the end of 2018. This is the first time that Bitcoin market capitalization fell below \$100 billion since 2017 and the first time that Bitcoin's price fell below \$4,000.



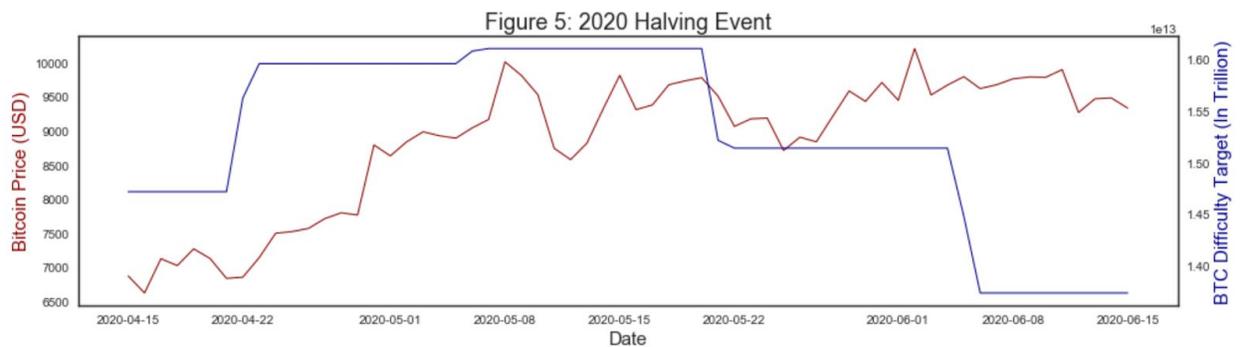
The second plummet also occurred when the Bitcoin price decreased by 58.1% from its \$10,500 high in February, 2020. The last plummet occurred after the 2020 halving event, when the increase in Bitcoin's mining difficulty made some miners scale back or shut down operations, decreasing the Bitcoin hash rate by 36.1%. As shown in Figure 3, 2020 has been a unique year for Bitcoin as its hash rate has not only plummeted twice already but has also spiked to its highest level ever recorded, reaching 136 TH/s on February 29. Based on the last 2 years of data, there is a moderate positive correlation of 0.58 between the Bitcoin network hash rate and Bitcoin price.

BTC Difficulty Analysis



Bitcoin difficulty represents the difficulty to mine a Bitcoin block. A high difficulty means that it will take more computing power to mine the same number of blocks. The difficulty adjustment is directly related to the total estimated mining power in the total hash rate in Figure 1. The difficulty is adjusted every 2,016 blocks.

Similar to the hash rate, Figure 4 shows that, in the last three years, Bitcoin difficulty has grown with the same three price drops as the hash rate. In general, as the hash rate increases, so does Bitcoin's mining difficulty. The biggest price drop in the last three years happened in March 2020, after the difficulty decreased around 15.5%.



The latest Bitcoin halving event happened on May 11, 2020. Before the halving, miners' reward was 12.5 Bitcoin per block mined. Post-halving, that reward decreased to 6.25 Bitcoins, meaning that the number of new Bitcoins per day decreased to 900 Bitcoins. As Bitcoin supply growth slows after the latest halving event, some investors argue that Bitcoin can be a potential hedge against fiat currencies in times of economic crisis.

Looking at Figure 5, the pre-halving price was around \$10,000, but on the day of the halving event, Bitcoin price dropped to around \$8,600, only to recover in price in the following days. Due to the hype around the Bitcoin halving event, it was no surprise that the Bitcoin price climbed to the psychological level of \$10,000, and that the subsequent price drop was a healthy correction as investors profited from the halving hype.

Source: Data collected from CryptoQuant and Bitstamp exchange website