VOLMEX Volatility Update

Does the post-Bitcoin halving environment mean an end to volatility?

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May 1, 2024

In exploring the immediate aftermath of the Bitcoin halving event on April 20th, 2024, i.e., post-halving adjustment period, it is clear that the halving acted as a resolution-of-uncertainty event, significantly impacting the volatility and market dynamics of cryptocurrencies. Following the halving, the Bitcoin implied volatility (BVIV) experienced a significant decrease, a 24.2% drop from 74.54 to 56.47. This shift in implied volatility, indicative of expected market sentiment towards future price fluctuations, was not mirrored by substantial price movements, suggesting a stabilization effect.

Similarly, Ethereum's implied volatility (EVIV) decreased by 15.9%, moving from 61.94 to 52.08, even as its price showed a slight upward trend during the post-halving adjustment period. This pattern indicates a broader market adjustment to reduced uncertainty following the halving. The comparative analysis of implied and realized volatilities, particularly the sharper decrease in Bitcoin's implied volatility relative to its realized volatility, underscores a significant recalibration of market expectations concerning risk and reward.

Furthermore, the changes in spot-volatility correlations for both Bitcoin and Ethereum reveal a decrease in the magnitude of correlations, with Bitcoin's one-week spot-vol correlation moving to -20% from -56%. This decline suggests a lesser degree of linkage between price levels and volatility, and more of a reduction in market uncertainty.

Most notably, the volatility risk premium (VRP) for both Bitcoin and Ethereum saw dramatic reductions. Bitcoin's VRP collapsed to 2.5% from 15%, and Ethereum's to 8.5% from 18%. The VRP, which measures the difference between market-expected future volatility (implied) and actual volatility realized later, significantly narrowed, indicating a realignment of market expectations to a more stable and predictable environment post-halving, in contrast to the price action on May 1, 2024. This adjustment reflects a market consensus that future volatility may be less than previously anticipated, a direct

consequence of the resolution of uncertainty introduced by the halving event. A possible reason for Ethereum VRP to drop less is that the SEC's ETF decision on May 23, 2024 acts as an additional uncertainty on ETH price. This also confirms that VRP captures the premium related to future uncertainty.

In summary, the Bitcoin halving not only adjusted the supply mechanism of Bitcoin but also played a crucial role in recalibrating crypto market dynamics and investor expectations. The decrease in VRPs and changes in correlations indicate a market trending towards stability, where future uncertainties are considered with less concern. This reflects a broader expectation of more predictable market conditions post-halving.

Appendix

Since the Bitcoin halving until the recent market move on May 1, call it the "post-halving adjustment period", Bitcoin implied volatility, measured by BVIV, went sharply down to 56.47 from 74.54. This 24.2% volatility fall was not accompanied by strong price action as can be seen in Figure 1 below.

Figure 1. BTCUSD (Bitfinex) and BVIV (Volmex)

Similarly, Ethereum implied volatility decreased 15.9% from 61.94 to 52.08 during the same time window, as shown in Figure 2, while the price moved slightly upwards.

Figure 2. ETHUSD (Bitfinex) and EVIV (Volmex)

The downturn trend in implied volatility during the post-halving adjustment period was steeper than the realized 1-month volatility, measured by BVRV1M, as can be seen in Figure 3.

Figure 3. BVIV (Volmex) vs BVRV1M (Volmex)

Ethereum volatilities followed a similar pattern as Bitcoin vols, as shown in Figure 4 below.

Figure 4. EVIV (Volmex) vs EVRV1M (Volmex)

Lastly, we saw major changes in spot-volatility correlations as shown in Figure 5 and Figure 6 below.

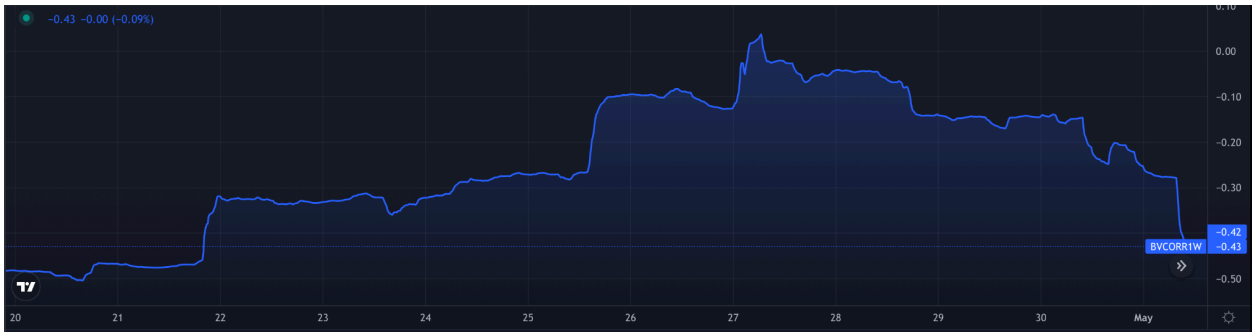

Figure 5. BVCORR1W (Volmex)

Magnitude of Bitcoin spot-vol 1-week correlation, BVCORR1W, went down to neg 20% from neg 56%, while that of Ethereum decreased in magnitude to 18% (negative) from 54% (negative).

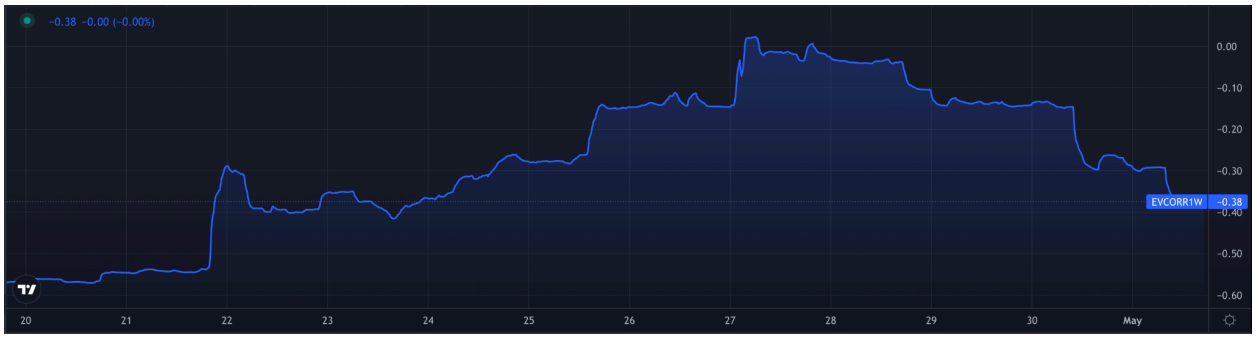

Figure 6. EVCORR1W (Volmex)

During the post-halving adjustment period, Bitcoin volatility risk premium (VRP)[1] crashed to 2.5% from 15% while Ethereum VRP went down to 8.5% from 18%.

[1] The volatility risk premium refers to the observation that implied volatility is often higher than what volatility actually materializes, i.e. realized volatility. The difference between the implied volatility and the realized volatility is where the risk premium comes in. Essentially, VRP is a measure of the premium that investors expect for bearing additional risks due to the uncertain future volatility of asset returns.

Figure 7. BTC VRP (red), ETH VRP (orange) and VRP difference (green)