BITCOIN STOCK-TO-FLOW MODEL

The Bitcoin (BTC) Stock-to-Flow (S2F) model attempts to value BTC in a way similar to other scarce assets like gold and silver. The model quantifies scarcity by taking the total global supply of the cryptocurrency and dividing it by annual production. Its basic concept is that widely produced commodities like oil, wheat, copper etc. are not good stores of value because there is always new supply online. Theoretically, since only small amounts of new BTC are regularly introduced, its value is more stable. Also, owing to the claim of the campaigners of the model, BTC is scarce with relatively high cost of production, its flow is completely predictable and its highest supply is capped at 21 million coins. Interestingly, through the BTC halving, the amount of new supply entering the system is halved every 210,000 blocks (roughly four years). It is assumed that a significant relationship exists between S2F and market value statistically, therefore BTC's price should significantly increase over time due to its continuous reduced S2F ratio.

These properties make BTC a scarce digital resource with profoundly compelling characteristics to retain value over the long-term. However, the limitations of the model might outweigh whatever sense it carries.

What are the Limitations of the BTC S2F Model?

Its assumption is that scarcity, as measured by the model, should drive value. Meanwhile, scarcity alone does not account for value.

The model fails when BTC does not have other useful qualities asides scarcity.

Gold for example has other useful qualities like predictable flow, global liquidity etc. that makes it a relatively stable store of value compared to fiat currencies, which are prone to devaluation. Even though, gold is not all that uncommon – after all, there are 190,000 tons available - the S2F ratio suggests that it is valuable because its annual production compared to the existing stock is relatively small and constant and not for the same reasons accepted by the "followers of the S2F model". Additionally, S2F model being a long-term valuation model needs a larger data set for more reliability.

The valuation of an asset requires considering its volatility. Historic data from Coinmetrics reveal that BTC's volatility might decrease over time. If the volatility is predictable to some extent, the valuation model may be more reliable. While volatility might be diminishing on the macro level, BTC has been priced in a free market from its inception and so, the price is mostly self-regulated on the open market by users, traders and speculators.

The fact is every model is as strong as its assumptions, and the S2F model has not accounted for all aspects of BTC valuation (including its relatively low liquidity and likely exposure to sudden spikes of volatility). Also, BTC has only been around for a little more than ten years, thus, it is still pretty much new for any solid conclusion. Hence, my submission is that the BTC S2F model is not suitable, however, it can be exploited and/or improved.

REFRENCES

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