**The Bitcoin Stock-to-Flow Model**

A Stock-To-Flow ratio is the ratio of the amount of available stock of the commodity to the production, or generation, rate of the commodity at a particular time interval, typically yearly. This measure is usually used for commodities which hold value significantly over a long time, often due to the difficult nature of making these commodities available, resulting in scarcity. They are often referred to as Store of Value commodities. Examples include gold and silver.

The stock-to-flow ratio is used to predict valuation of these commodities, and a high ratio would indicate that the great amount of the commodity is not used up via various means, but stocked up. Thus, a higher ratio would imply that the particular commodity is more valuable at the particular point in time.

This model of value prediction has been thought to extend to bitcoin, the first ever digitally scarce commodity. With consideration of the scarcity of bitcoin in the cryptocurrency market, and the intensive nature of mining the very few left to be mined, it is believed that it would follow the same trend as with the aforementioned Store of Value Commodities. The theory of the relationship of commodity valuation with the stock-to-flow ratio was originally coined by a Dutch investor, who published a paper hypothesizing that Gold, the commodity with the highest market value in the world, has its valuation linked to its Stock-to-Flow ratio. He then proceeded to create a regression model comparing bitcoin’s valuation with its Stock-to-Flow ratio. The model fit well enough, even with an R-squared value of about 95%. With the outcome of the findings, the world picked up the model and implementations have spread worldwide.

**Problems with the Model**

However, there were some problems around the design of the experiment by the Dutch investor. Firstly, the resulting Stock-to-Flow model was based on an assumption that the returns of an asset didn’t pose any uncertainty and no account was taken into that. Also, the regression model implemented was one of a linear fashion, which took into consideration the halving system implemented with bitcoin mining after about 210,000 blocks, in approximately 4 years, to minimize supply so as to maintain Stock-to-Flow ratio. With this, the model would predict bitcoin to reach about 230 billion USD by 2045, and continue increasing to an infinite sum at the limiting halving amount of zero. This will definitely not be true based on underlying factors with a third problem being that the value of gold varied from about 60 billion to 9 trillion at the same Stock-to-Flow ratio of 62, which indicates that other factors, other than Stock-to-flow, greatly influenced the valuation of Gold. This, therefore, invalidates the underlying hypothesis on which this model was established.

Although this model has shown some good correlation in past years, it is expected that it would fail over time as the assumptions backing it contradict the basic ideas of statistics and finance.

REFERENCES

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