**BITCOIN STOCK-TO-FLOW MODEL**

Precious metals such as gold and silver have maintained their monetary value and role throughout history because of their unforgeable costliness and low rate of supply. Gold is of such high value both because the mining and supply of gold is not just tedious, but insignificant to the current supply, and because the vast stores of gold around the world cannot be replicated. These metals are considered ‘store of value’ commodities because they retain their value over long periods as a result of their relative scarcity. Bitcoin is similar to these metals because it is also scarce. It is the first scarce digital object to exist because, there are a limited number of coins in existence, and the process of mining the 3 million coins left takes a large amount of electricity and computing effort, and cannot easily be faked. Hence, the supply rate is consistently low.

Stock-to-Flow ratios evaluate the total amount of a commodity currently (the current stock) available against the amount mined in a particular year (the flow of new production). A higher ratio means the commodity is increasingly scarce and as such is more valuable as a store of value. Currently, gold has the highest SF value (62) as it will take about 62 years of production to get the current stock, and silver has an SF value of 22. Bitcoin currently has a stock of 17.5 million coins and a supply rate of about 0.7 million coins per year, which brings its SF value to 25. This is why it is placed in the category of goods like gold and silver.

When a miner finds the hash that satisfies the proof-of-work (PoW) required for a valid block, a new block is created. On average, this happens about every 10 minutes, and these new blocks contain new bitcoins. The Coinbase, the first transaction in each block, contains the block reward for the miner that found the block. The block reward comes with a subsidy. This subsidy consists of the fees that people pay for transactions in that block and the newly created coins. The subsidy starts at 50 bitcoins and is halved every 210,000 blocks (about 4 years). Halvings are very important for bitcoins money supply and SF as they cause monetary inflation (the supply growth rate) to be stepped and not smooth.

The Stock-to-Flow model used by PlanB in his paper “Modeling Bitcoin Value with Scarcity” was written in 2019 where he runs a linear regression using the natural logarithm of the SF metric of bitcoin as the independent variable and the USD market capitalization as the dependent variable. He forecasts that by the next halving of bitcoin, which would be May 2020, the price for a bitcoin would be $55,000 with an SF of 50.

Many cryptocurrencies that utilize Bitcoin’s code have the same supply schedule as Bitcoin, yet their SF values do not come into consideration when discussing their valuations. This leads to the belief that the SF model applies only to bitcoin and is unrealistic. The market capitalization for gold has held valuations between $60 billion to $9 trillion, all at the same SF value of 60. A range of $8 trillion is not very indicative of explanatory power and lends itself to the obvious conclusion that factors other than the supply rate of gold drive its USD valuation, and so the USD valuation of bitcoin is subject to change due to other factors.

Despite the forecasted predicted price for bitcoin by May 2020, the highest price bitcoin traded at for the year was recorded in August where it traded for a high of $12,359. Currently, as of the 23rd of September 2020, bitcoin trades for a high of $10,586 and a low of $10,398, which are all far off from the prediction of the Stock-to-Flow model. The main reason for this can be therefore be seen as a result of its over-reliance on the bitcoin SF value and its scarcity concerning its market value, whereas several other factors influence its value such as the few discussed below.

1. Government Regulations: Bitcoin is a decentralized currency, which means government regulations and policies regarding fiat money do not apply to it, but several governments have started to implement laws to regulate Bitcoin, and the regulations cause the prices to rise or fall as they may threaten to ban or hinder cryptocurrency exchange.
2. Hackers: The recent Bitcoin scam that occurred when major US Twitter accounts were hacked and posted tweets claiming to want to give back to the society by doubling Bitcoin sent to them caused a massive frenzy, and in turn, a loss of trust for the cryptocurrency.

The Stock-to-Flow paper should be treated with high skepticism as it is more of a marketing piece showing the potential Bitcoin has in terms of increased value in the future based on its scarcity than proper analysis. Though it may prove to be true as time goes on, it should not be the main factor leading to one’s investment in Bitcoin.