**FINANCE**

1. **Bitcoin Stock-to-Flow Model**

**Overview**

In this paper I will be explaining the Bitcoin Stock-to-flow Model, highlighting its importance and relevance but also its shortcomings.

**Understanding Stock-to-Flow (SF) in relation to Bitcoin**

Stock-to-Flow model relates the all time amount of a resource in its reserves and its current production rate over a time period. It was typically applied to precious metals like Gold, Silver, Palladium and Platinum but with the rise of cryptocurrencies it is now also applied to Bitcoin and Ethereum.

The model creates a relationship between the Stock-to-Flow of a resource and its market value. It is generally believed that the higher the SF value of a resource the higher its market value. The SF value has a direct relationship to scarcity, the harder it is to obtain the resource the more valuable it is in the market like in the case of Gold. Bitcoin’s scarcity is a different case, as it is not a physical currency, its scarcity comes from the fact that it uses a lot of electricity to generate new Bitcoins.

Bitcoins are generated by miners who find a new hash that satisfies the PoW of the new blocks that are created every few minutes. The first transaction for that new block is called the coinbase and it contains a reward for the miner that found the block. “The block reward consists of the fees that people pay for transactions in that block and the newly created coins (called subsidy). The subsidy started at 50 bitcoins, and is halved every 210,000 blocks (about 4 years). That's why 'halvings' are very important for bitcoins money supply and SF. Halvings also cause the supply growth rate (in bitcoin context usually called 'monetary inflation') to be stepped and not smooth”.

"Precious metals and collectibles have an unforgeable scarcity due to the costliness of their creation. This once provided money the value of which was largely independent of any trusted third party. [..][but] you can’t pay online with metal. Thus, it would be very nice if there were a protocol whereby unforgeably costly bits could be created online with minimal dependence on trusted third parties, and then securely stored, transferred, and assayed with similar minimal trust. Bit gold." — Szabo

The less readily available the resource the higher its value, the higher its value the higher its SF and the higher its SF the higher its market value, or so we would like to believe.

**Drawbacks of the Stock-to-Flow model for Bitcoin**

Relying on one factor to make decisions in any given scenario would lead to an oversight, the more variables and information you have to work with the clearer the picture of your prediction. The same applies to the buying and selling of Stock or Bitcoin.

The Stock-to-Flow model relies on only one parameter, the SF value and in turn the scarcity of Bitcoin in relation to its market value, it believes that the SF is enough to determine its worth on the market, in a Utopian world this could work.

In 2019 a Medium user PlanB used the SF model to predict the price of Bitcoin at its next halving which would be May, 2020. He showed a linear regression model using past data to determine the rate of Bitcoin at that date:

“The predicted market value for bitcoin after May 2020 halving is $1trn, which translates in a bitcoin price of $55,000. That is quite spectacular. I guess time will tell and we will probably know one or two years after the halving, in 2020 or 2021. A great out of sample test of this hypothesis and model”. — PlanB

And yet, that was not the case as of May, 2020, at that date Bitcoin was trading at a high of $9,999.93 (May 8, 2020) and a low of $8,568.88 (May 12, 2020). Very disappointing for what we expected using the SF model. The question is: Why did the SF model fail, given that past data predicted it would not?

As previously stated, the model relies only on one variable, the scarcity of Bitcoin, but 2020 has shown us the unexpected by way of the different tragedies we’ve suffered this year. There are a myriad number of factors that affect trade of a stock:

1. Hacker attacks: Despite the difficulty to the near impossibility it takes to hack Bitcoin, some hackers have found a way around getting people to send them Bitcoin. On July 15, 2020, between 20:00 and 22:00, high profiled individuals on twitter had their accounts compromised, all the accounts asked individuals to send cryptocurrency to a certain Bitcoin account and would be rewarded as it was a way to give back to the community, a lot of people fell for the scam and that in turn affects people’s trust in Bitcoin.
2. Government Policies: Because Bitcoin is a decentralized banking system and in turn the governments of the world do not have access to people’s account, they try to put in place policies that would help them regulate Bitcoin, even going as far as to label it as a risky investment as is the case of the SEC (Securities and Exchange commission of Nigeria).
3. News: Let's take the outbreak of the CoronaVirus as a case study, the effects of the pandemic on economies has been felt all over the world:

“The total market value of digital currencies tracked by CoinMarketCap fell from US$308 billion on 14 February to less than US$118 billion on 12 March. Bitcoin, the world's largest digital currency by market capitalisation, dropped from above US$10,400 on 13 February, to less than US$4,120 on 12 March”. —fxcm.com

**Conclusion**

The Stock-to-Flow model is flawed in its prediction of the expected price of Bitcoin based on its scarcity alone, as we can see the market value of Bitcoin is affected by other factors as well, it is not a bad model but it is not one people should rely on to make investments in Bitcoin, at least not alone.