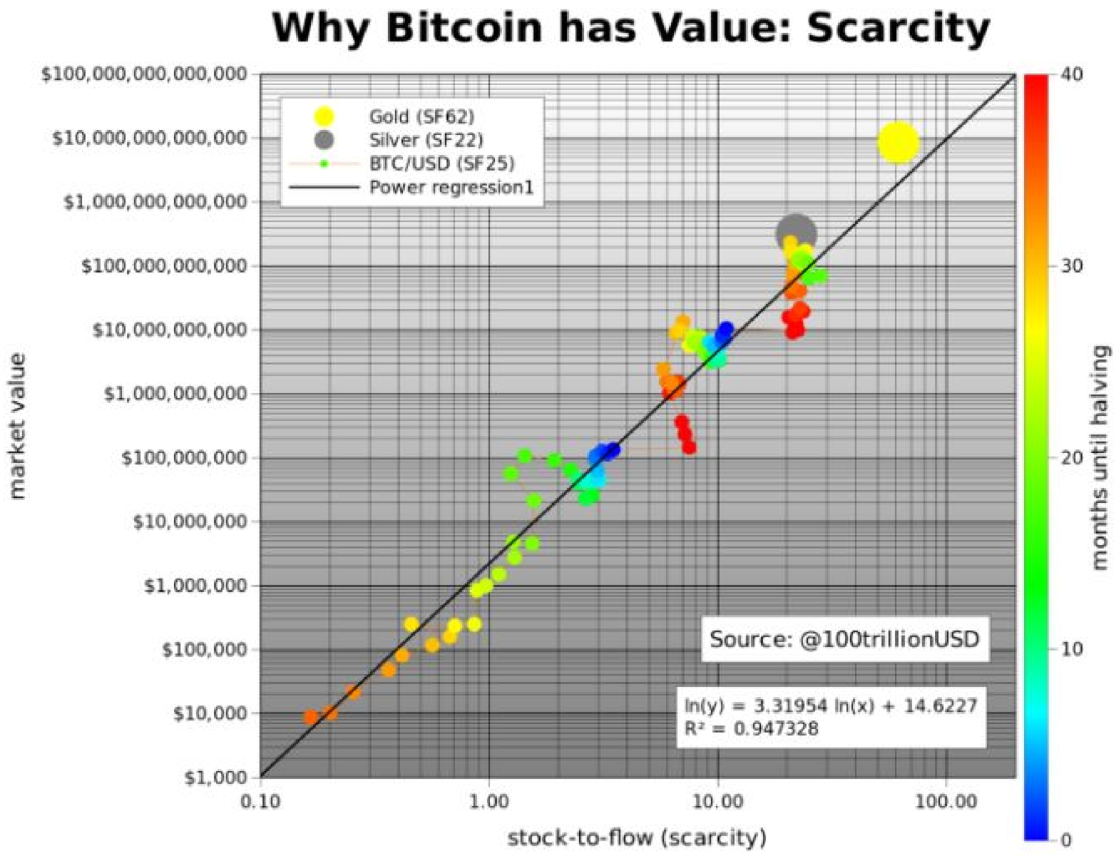
STOCK-TO -FLOW MODEL

Satoshi Nakamoto designed a decentralised digital currency called Bitcoin in 2009[1]. It works as a virtual currency that uses peer to peer technology to provide payment. To ensure that supply shrinks over time, every 210,000 blocks, or about four years, the reward issued to miners gets cut in half. These are called “halving events”. A Bitcoin halving event is when the reward for mining Bitcoin transactions is cut in half. This phenomenon is what led to the scarcity of Bitcoin which the twitter user known as “Plan B” decided to base their stock-to-flow model on. From here on, we will refer to the stock to flow model as SF.

Plan B’s stock to flow model is based on the hypothesis “...that scarcity, as measured by SF, directly drives value.” It is also based on the assumption that the market capitalisation of scarce goods like gold or silver are directly gotten from the rate of increase in their supply.

The SF model is simply the ratio of current supply to new supply, where current supply is called stock i.e the size of existing reserves and new supply is called flow, which is the yearly production.

Bitcoin has a stock of 18,375,000 and a supply of 328,500/yr which gives an SF of 56, close to the SF of gold (hence the popular name “Digital gold”). The current stock of gold is 185,000 tonnes with a yearly flow of 3000 tonnes, which gives an SF of 62. A higher stock to flow ratio means the commodity is increasingly scarce and the SF value itself represents the number of years it would take to attain the quantity of the current stock. The inverse of the SF ration gives the yearly supply percentage of the commodity.The annual supply growth of gold equals 1.6% and even a doubling of the annual flow from 3000 to 6000 tonnes only increases the annual supply growth to 3%.



Source: [modeling bitcoins value with scarcity]

The use of the stock to flow model for Bitcoin price estimation has been criticised by people and professional bodies alike. The whole premise for the reliance of the model is made in this direct quote from the original medium article “The likelihood that the relationship between stock-to-flow and market value is caused by chance is close to zero”.

There are a lot of identifiable problems with this model. There is no proof that the stock to flow ratio of Gold is what drives the price, and as such the whole premise of the model is flawed. Infact, SF has no clear relationship with the market value of gold over the last 100 years.[2]

More interestingly, by taking the model and extending it 30 years into the future, Bitcoin seems to increase almost exponentially until it converges to infinity.[3]

Bitcoin is digital gold, and it does not need to rely on false statistics for this to be true.

REFERENCES

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2. https://strixleviathan.com/blog/2020/6/29/a-chameleon-model-why-bitcoins-stock-to-flow-model-is-fatally-flawed

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