The "stock-to-flow" ratio (also refereed to as S2F) is a model which makes it possible to estimate the scarcity of any precious metal by dividing the total stock already mined by the quantity produced annually. The higher this ratio, the less sensitive(higher) the price of the precious metal being considered. S2F = stock / flow

For example, for gold, S2F ratio is estimated at 62. Production rate is 3.000 metric tonnes and total stock is 185.000 metric tonnes.

S2F = 185.000 / 3.000 = ~62

For silver, S2F ratio is estimated at 22.

But how could this model be applied to bitcoin to predict the evolution of its price?

Unlike other "commodities", the exact amount of bitcoin is known and the upcoming production rate can be estimated with great precision. Knowing that a block is created every 10 minutes,its "stock to flow" ratio is doubled every 210,000 blocks (4 years). If we compare the evolution (since 2009) of its "stock-to-flow" ratio and that of its value in euros, we can indeed see a statistically significant relationship… until today:



Source: digitalik.net

This model help predict the prize, but this predictive model has some obvious limits:

The first is that of demand. Just because an asset becomes scarcer does not mean that its demand will mechanically increases. Many altcoins based on Bitcoin's scarcity model have not seen the same success at all.

The second is that this model will not always be reliable. If we analyze the graph a little further, each bitcoin should be worth 1000 billion dollars in 2050 and then tend towards infinity when all the bitcoins are mined!

The S2F cannot be used to predict Bitcoin price effectively since most of the assumption made are wrong. This is because this assumptions are made with small number of data points. Bitcoin has only gone through two halving periods hence not enough data to make such an assumption

The proposed relationship between Gold and Bitcoin is not reliable because:

- Liquidity level: A quick analysis show that they differ in areas like volumes of purchase and sale operations that directly impact the level of liquidity. The result can be seen in the price since, bitcoin increased its total market capitalization from $41B to US $ 112B and gold, which is worth 70 times more than bitcoin worldwide ($ 7.8T vs. $ 112B), does not show the same consistency as the results obtained for bitcoin with the S2F model.

- Volatility; One of the important aspects for the analysis of the pri ce of the assets, are the variations they present. In the case of bitcoin and gold, we could say that there is a distant behavior between both assets since, the volatility levels of bitcoins have been much higher than those of gold and the causes of these variations in both assets, could be considered mutually exclusive.

As a personal opinion, it is possible that the S2F model is useful to determine the cost of bitcoin, but not the price.