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ListedReserve Managed Fund

Investor Note: The bitcoin halvening, six months to go

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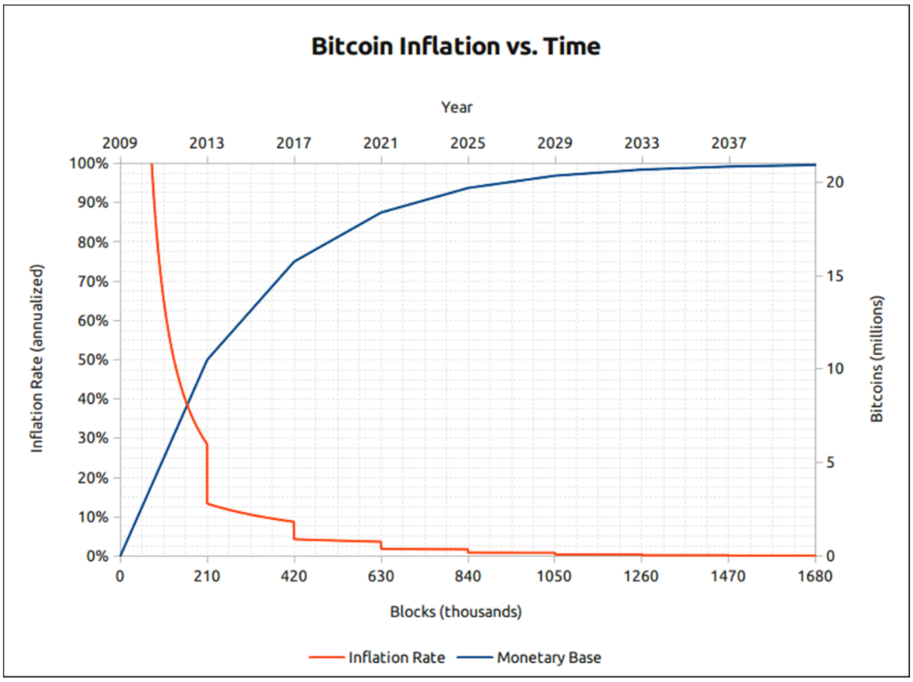
Bitcoin Halvening

Investors might be aware of the concept of a bitcoin halvening. Every four years the supply of new bitcoin halves. Since bitcoin launched in 2009 there have been two halvenings in 2012 and 2016. The next is scheduled to occur at some point in May 2020. The actual timing of a halvening depends on bitcoin mining power. Rather than specifically every four years, halvenings occur every 210,000 blocks, each block is 10 minutes long (on average) so, new supply halves every four years.

Bitcoin Supply Curve

The chart below lays out the bitcoin supply curve. As you can see issuance was steep up until 2013, the rate of new supply (inflation) currently stands at around 3.5% annually and will fall to 1.75% in May 2020 and 0.83% in 2024.



What to expect as we approach May 2020

The halvening is likely to attract a lot of media attention as it did in 2016. The main thing to remember is that we are holding this asset because it is scarce, that is its primary feature. In 2020 it will become the most scarce asset ever. That sounds rather dramatic but it is a fact because the inflation rate of bitcoin will fall well below that of gold.

To illustrate how tight supply is becoming, we can look at Q3 2019. During the quarter, 162,000 bitcoins were mined with a value of roughly US$1.6 billion. That sounds like a lot but if we consider the Grayscale Investment Trust and Square sold US$400m of bitcoin in the same quarter, then we have two businesses in one geography consuming 25% of all current supply. It is little wonder in this scenario that the price run up in 2019 has been so strong.

That all said, the halvening is not as simple as new supply halves, so price doubles. There will be a number of consequences which are less well understood that could have negative short term effects on price.

Miners and the halvening

Bitcoin miners make their money successfully resolving blocks and collecting the block reward and transaction fees, every 10 minutes. It can be a hugely profitable endeavor, but it requires massive investment in IT infrastructure. Imagine then you are a bitcoin miner and run a reasonably efficient operation. You have a 20% profit margin with a bitcoin price of $10,000, which is a good business.

	Pre-Halvening	Post-Halvening
Monthly mining income	2,000,000	1,000,000
Electricity costs	(1,000,000)	(1,000,000)
Hardware depreciation	(400,000)	(400,000)
Staff costs	(100,000)	(100,000)
Other costs	(100,000)	(100,000)
Profit/(Loss)	**400,000**	**(600,000)**

As soon as the halvening arrives bitcoin miners will receive 6.25 bitcoins per block instead of the current 12.5. Their income, assuming static price (a very big assumption), halves. Profitable mining businesses become instantly unprofitable because the cost structure remains the same. This could cause miners in difficulty to dump coin holdings onto the market to generate cash to support their operations.

The point is, pressure on price need not only be upward, in the short term it can be significantly downward due to the economic consequences of the halvening on miners. None of this of course is terminal but it simply makes the path less smooth than it is sometimes imagined to be. Paradoxically then, the halving of supply can actually cause more bitcoins to come onto the market.

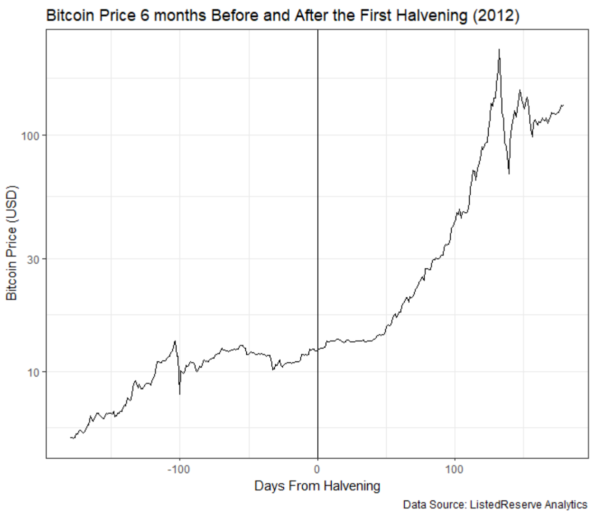
Ecosystem stress

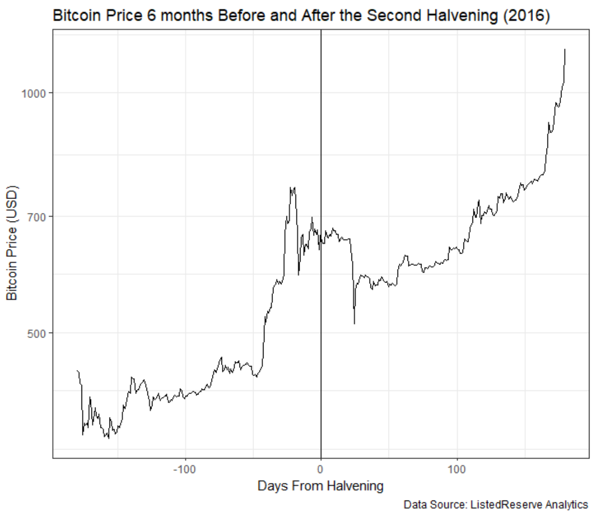
In traditional finance where ecosystems get stressed there is a lender of last resort who can provide liquidity into a market. Traditional financial markets have all sorts of circuit breakers that prevent markets doing anything too unusual (like the stock-exchange suspends trade during steep falls to break the pattern of black box traders etc.) We have seen Repo market stress in the US this year simply eliminated by the Fed printing money. As you will know we stand for everything that the Federal Reserve doesn't, but we can say that they do ease market stress, even where that stress might ultimately be a good and necessary thing.

Bitcoin's markets have none of those things. Trade is never suspended, it is a 24 hour market and we do not know how this major supply shock will impact spot price, futures, markets or traders in general. One concern is that there is a price super spike causing regulators to take action that we would prefer they didn't.

What happened last time?

Performance in 2012 and 2016 reveals why investors get excited about the run up to halvenings. In 2012 the bitcoin price rose 2.3 times from $5 to $12 in the 6 months prior and in 2016 it rose 1.7 times, from $350 to $650. That could well attract speculative investment again this time and those speculative investors will look to leave about one month prior (so in late March 2020). Do not be surprised if they price starts to dip with 6 weeks to go.





Conclusion

The bitcoin ecosystem is somewhat more complex than is often made out. At its heart are the miners. The halvening is potentially problematic for them and can cause short term price disruption as coins are dumped onto the market to ease liquidity issues at struggling operations. In addition, the halvening event will very likely attract speculators who will attempt to exit prior to the halvening.

So, do not automatically anticipate strong price action immediately after May 2020, it could happen, but it is unlikely to be immediate. Again, patience is key.

In the end demand and supply determine price. This cannot be gamed, certainly in the run-up and the months following there can be short term demand and supply factors that will impact price but do not be put off by them. The strongest gains in the bitcoin price have historically always come in the **year following** a halvening.

Halvening	6 months prior	6 months post
2012	140%	971%
2016	45%	38%

Halvening	12 months prior	12 months post
2012	384%	8918%
2016	142%	285%

As they say, past performance does not guarantee future performance. It is also true though that when there is less of something, it generally becomes more valuable and historically that has been the case with bitcoin through each era of its supply curve. The chart below shows the price through the eras, it might help you understand why people talk about a $100,000 bitcoin, by no means a certainty but not as fanciful as most people think.

- The lower section the period between 2009 and 2012: bitcoin price finishes at US$12
- The middle section (after the first halvening), bitcoin price starts at US$12 and ends at US$658 in 2016
- The highest section (second halvening period), bitcoin price starts at US$658, today it stands at US$8,700
- We are now almost exactly six months from halvening number three.