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# Cross-trend study: Bitcoin's price and exchange balances

# Marriage of trends: Exchange balance effects on Bitcoin's price direction

We continue to focus on Bitcoin in many of our reports as it remains the gateway asset for most if not all investors into the cryptocurrency space. The way Bitcoin goes, so does the rest of the price sentiment for cryptoassets. And sure, some tokens might make a few moves on their own, but the general direction is pinned to the king of cryptocurrencies. In this In-Depth report, Copper looks to establish whether or not there are trend lines that give an accurate picture marrying various metrics from on-chain exchange reserves, retail accumulation, price and technical indicators. The report finds significant fundamental support from trend lines established based on exchange reserve changes.

Drawing trend lines is a fairly arbitrary exercise to begin with. Whilst linear trends can be drawn against the price data for different periods of time, looking at full datasets up to current price movements in such a manner gives little forward insight as to whether or not what the data is suggesting is accurate. Full datasets are de facto a moving target. They're valuable, but not helpful in making any sense of the volatility Bitcoin sees. Linear trend lines are as good as the period you're zooming in on.

With that in mind, for any forward outlook, periods must be selective. The fear here, however, is a confirmation bias were traders might draw lines that visually might "make sense". The result of such graphs is nothing short of a Jackson Pollock of diagonal lines.

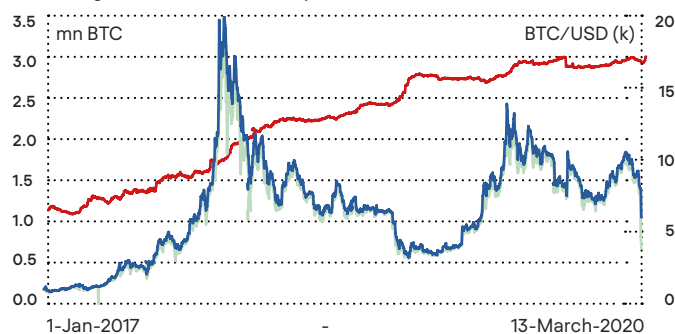
## Starting points

How does one select the data points on price charts that can have some forward insights to market dynamics before the fact?

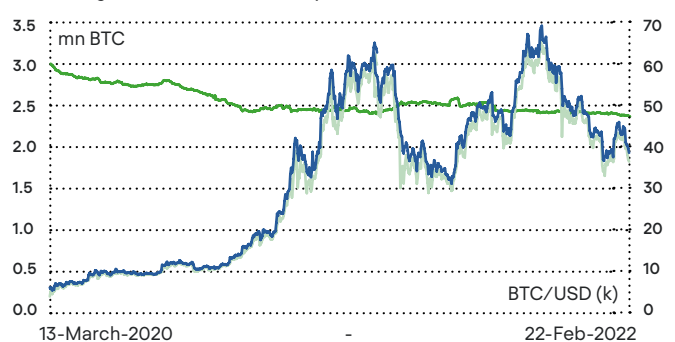
Time and time again, this research team has highlighted that Bitcoin is purely a supply and demand asset class. Despite the soundings of the crypto crowd, Bitcoin isn't programmatically designed to just go up without enough long-term investors.

But, on the overall, supply and demand dynamics are fairly transparent. On-chain metrics offer some indication. But exchange balances have their flaws, of course, as it discounts investors who are trading on a platform and choose not to self-custody. And mapping out exchange reserves is also not a simple matter. Which is why this team uses multiple sources. And we'll identify some differences that can be quite large.

1: Exchange reserves increased by 163% from Jan 2017 & 13-March 2020



2: Exchange reserves decreased by 21% from 13-March 2020 & 22-Feb-2022



Nevertheless, there are two charts that stand out to this research team for Bitcoin that highlight supply/demand dynamics and price. These charts are as much proof as someone can establish that Bitcoin does have fundamental value as far as direction (see charts above). What needs to be addressed is volatility.

As far as price, we have conducted this very study to establish whether various metric trends can account for volatility, and whether or not there are any identifiable patterns.

As previously mentioned, selecting data points to establish a trend line is an arbitrary exercise. In order to minimize any visual bias (i.e. drawing a trend line that suits some bullish or bearish narrative) we highlight the key events that have happened on both exchange balances (supply/demand) and price cycles.

To start off, our first identifiable point was 12th March 2020 that came to be known as 'Black Thursday' when Bitcoin plummeted to its low of the year. The reason why this is a very important data point to consider is that it also coincides with the peak of exchange reserves looking back at data from as far as we could from on-chain analytic providers, Cryptoquant and Glassnode.



This data point proves a simple point; when reserves went down, prices went up. The 2017 rise to near \$20k was more of a 'bubble' so to speak until it also hit bottom in 2019 as reserves kept going up (see charts 1 & 2).

### Same direction but different

It's important to note that on-chain metric providers have an extremely difficult task of identifying exchange wallets. Data providers can be more conservative than others in tagging certain wallets as belonging to exchanges. And exchanges continue to change their own internal processes for security purposes.

The differences can be fairly major. At one point, there was a 224k Bitcoin exchange reserve difference between Cryptoquant and Glassnode with a \$3bn value at the time (see chart 3).

Nonetheless, the general direction of both data providers are the same with peaks and bottoms mirroring one another.

### The tricky bit

Having identified the first key point as previously mentioned, establishing the second point(s) that would define a trend line becomes a lot more difficult.

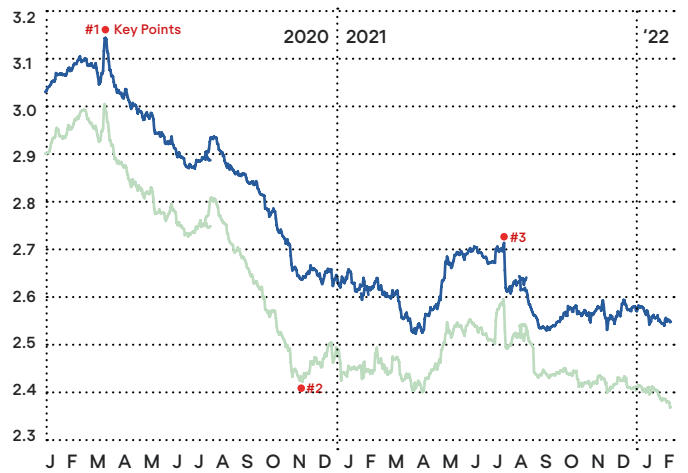
This is why we've attempted to pinpoint various important dates that coincide with either a shift in price, bottom and top cycles, and changes in exchange supply to see whether there is something telling on what investors are potentially looking at. (The aforementioned Jackson Pollock but with added supply dynamics for good measure).

Continuing on this train of thought, exchange supplies reached a bottom and began to move sideways from 16 November 2020 as far as data from Cryptoquant is concerned. Interestingly, Bitcoin has been trading across and below this diagonal for 2022 which could either indicate a bottom, or in the midst of a reversal cycle (see chart 4).

Despite dipping below this trend line recently, daily swings to the high have been above it. More importantly, the +10% dip on 24-Feb-2022 was short-lived only to bounce right back above this line on the same day.

As far as reserves hitting their lowest are concerned for both 2020 and 2021, the trend line indeed has a few more trading tells (see chart 5). Prices revisited this line in August and September before rallying to Bitcoin's all-time-high. Prices also visited this fundamental trend line for the majority of December and January 2022 before plunging precipitously below it.

3: Total exchange balances: **Cryptoquant** vs **Glassnode** (mn BTC)



#	Date	Key point notes	Data provider
1	12-Mar-2020	2020 Peak Reserves	Both
2	16-Nov-2020	2020 Bottom Reserves	Cryptoquant
3	27-Jul-2021	2021 Reserves Peak	Both

4: BTC/USD (k): **High Low Trendline** between 12-Mar-2020 and 16-Nov-2020



5: BTC/USD (k): **High Low Trendline** between 12-Mar-2020 and 27-Jul-2021





This led us to another two points that could be just as relevant - the two price lows of 2020 and 2021. Whilst Bitcoin has come close to these prices multiple times last year, it never dipped below.

## Classic

Whilst the previous trend lines have been drawn up against key changes and points in time relative to exchange balance supplies, a trend line between the two price lows also has a great deal to say.

Fundamentally, since supplies peaked in 2020, market cycles have given us a great deal of indication as to price movements. Granted, it's extremely volatile. But as exchange reserves continue to go down (or sideways), price's will be affected.

The trend line drawn out between the two lows, that of 2020 and 2021, shows that there is important information to its validity, as we've previously shown in other reports.

While this might seem as a "fair price" for Bitcoin, the reality is that the cryptocurrency swings above and below it. Effectively, there is no 'fair price'. But what it can tell us, so long as exchange reserves continue to go in the downward direction, is whether or not the cryptocurrency is undervalued, overvalued, and by how much relative to the trend. Last year's April peak was north of 70% away from this line and quickly came down.

As of publishing, Bitcoin's price is -40% from this trend line, its lowest since the start of 2021 (see chart 7). If one was to take our previous drawn trendline assessing the 2020 balance lows (see chart 4), perhaps indeed the bottom is in. After all, supplies are now ever so slightly moving downwards once again looking at Cryptoquant's data (see chart 3).

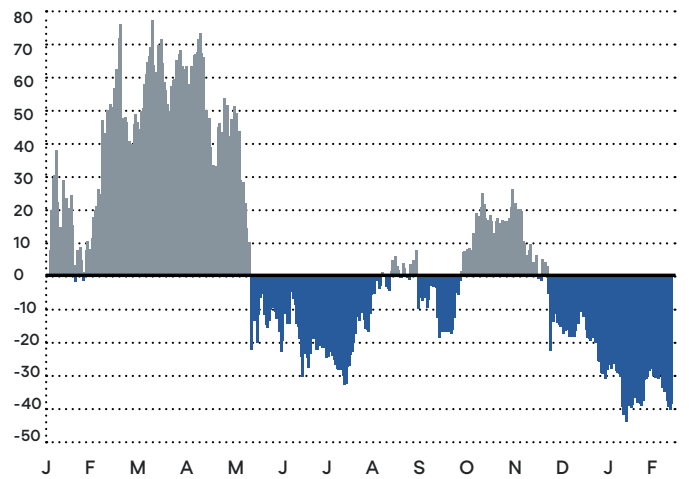
In consideration of the trend line drawn between the peak reserves of 2020 and 2021 (chart 5), the percentage price difference shows to be almost reflective of one another on the upper and lower bound (see chart 8).

Relative to that trend line, Bitcoin hit a whopping -46% from the price. Again, this line was drawn against the peak exchange reserves, both fundamental data points that are important in any analysis as it indicates how much and at what price levels people are selling at.

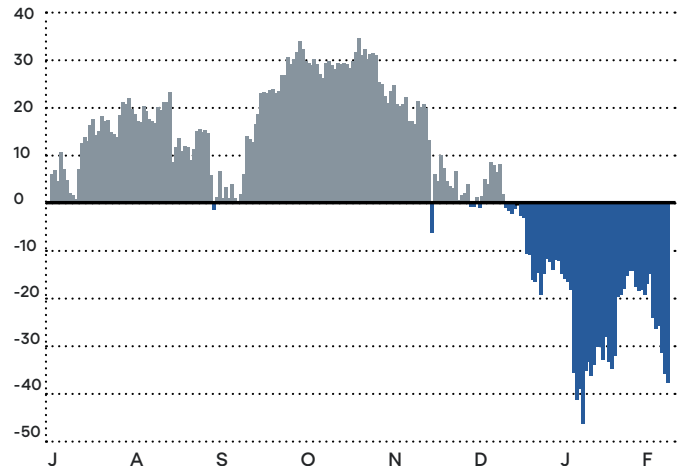
6: BTC/USD (k): High Low Trendline between 12-Mar-2020 and 4-Jan-2021



7: % Price difference against trend line between two lows (above) From 4-Jan-2021 (Year's low)



8: % Price difference against trend line between 2020 & 2021 peak reserves From 27-Jul-2021



Caveat: All lines will be in an upward direction with some more than others. We're not arguing that markets are bullish. It does however answer the simple equation that prices go up as supplies go down - and the supply on exchanges continues to downtrend albeit only slightly. Reversals can happen at any time.

NB: Data providers continuously update their exchange wallets. As such, this is the best information at this point in time.



9: Trend lines: BTC/USD (k): 13-Mar-2020 up to 31-Dec-2022



When all is said, we've highlighted three key trend lines, none of which random. We've added a fourth price trend line (see chart 9) that also signified the bottom following the overnight geopolitical crisis in Europe. What these lines are effectively telling us about Bitcoin's price movements is that there are two key influences to market prices. Firstly, fundamental data married with price movement signals potentially true supply/demand bottoms. And secondly, algorithmic investors trade along price trends. This was also an [assessment](#) made by Sam Bankman-Fried, FTX CEO recently. The numerous market cycles happening since last year, all the while reserves down trending, helps quantify the subject matter. There is symmetry within the chaotic swings.

## Taking a closer look

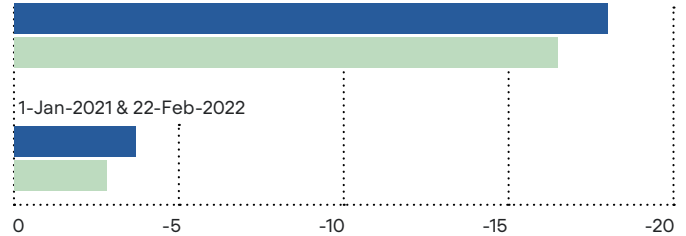
Whilst the trend lines do have significance, the general bullish sentiment has us question and explore the potential downside risks too.

More analysis is required to confirm whether or not exchange balances do indeed play a significant role in established whether Bitcoin is under of overvalued. Calling a price bottom in such a volatile asset is precarious at best. But we can see whether or not the fundamentals line up.

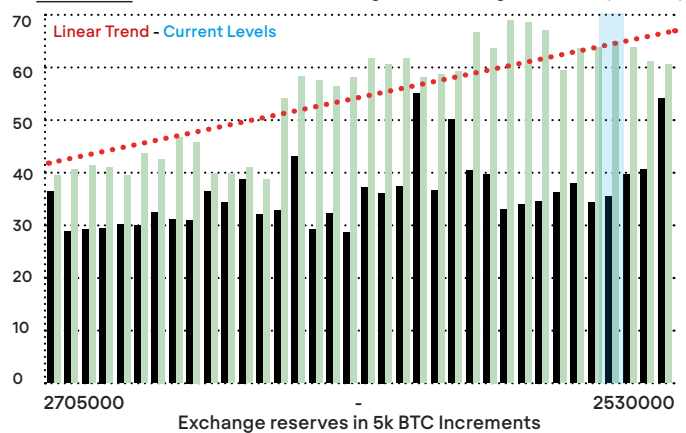
Bitcoin has clearly traded exponentially since 2020 price bottom and peak reserves. Exchange reserves dropped 18% from its 'Black Thursday' bottom till the start of 2021. That resulted in a near 10x price increase. On the other hand, from 2021 to date, reserves have dropped only another 4%. Prices still saw large swings.

Looking at price levels at different reserve levels can't explain volatility, the differences can be quite massive at face value (see charts 11, 12). What we do see however is fundamentally sound price direction. And current reserve levels appear to be on the lower-bound of the potential wide-range spectrum.

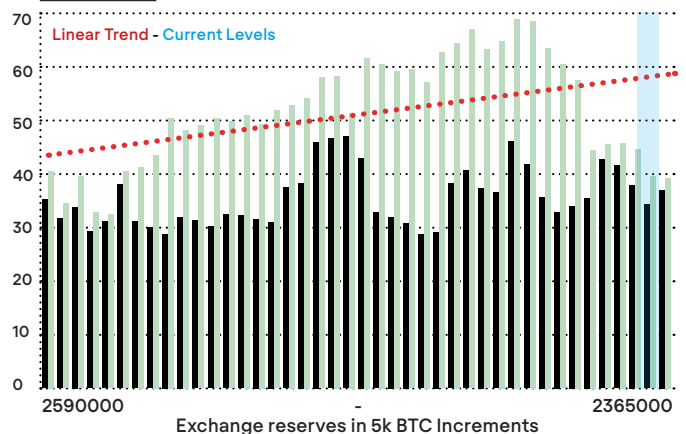
10: Exchange reserve % change between dates [Cryptoquant](#) [Glassnode](#) 13-Mar-2020 & 31-Dec-2020



11: [Glassnode](#): BTC/USD Price Min Max against exchange reserves (mn BTC)



12: [Cryptoquant](#): BTC/USD Price Min Max against exchange reserves (mn BTC)





## Getting expensive for retail?

Since 2021, there have been fourteen significant price cycles for Bitcoin (see table). A look at on-chain Bitcoin accumulation by small investors holding between 0.1-1BTC shows that nearly 50k Bitcoins have been added. That would equate to the equivalent of 14% of the Bitcoin block rewards minted during that period. Not a small number for small investors, and certainly a picture into what might be happening on centralized exchanges too. Retail remains an important factor.

But the data also suggests that there is a good deal of misfire in timing market swings. These addresses added a whopping 40% of the total additional Bitcoins during bear cycles. The biggest addition in these addresses came during Bitcoin's all-time-high cycle whilst markets were heading down (see chart 13).

More revealing however is the reality that these investors are either jittery or might have little left to invest. In the 2021 cycles when Bitcoin hit just under \$30k (cycles 1 & 9), these addresses bought up almost 24k Bitcoins. In the January 2022 cycle, when Bitcoin dropped to just under \$33k, a mere 126 Bitcoins were added to these addresses. These investors once again seem to have mistimed markets and added an additional 6k BTC during the latest bear cycle.

The data also reveals that the majority of the accumulation by these investors came at a price point between \$47-48k (see chart 14). Ultimately this could suggest that many investors could be under water, depending on how much they've averaged in, and at what time.

## Collateral quandary

One of the more interesting trends is the near non-stop downhill trend of supplies on spot market exchanges (see chart 15 overleaf). Month-on-month supplies on key exchanges dropped an average of 1% since 2020. Only 30% of the time did these wallets see an increase.

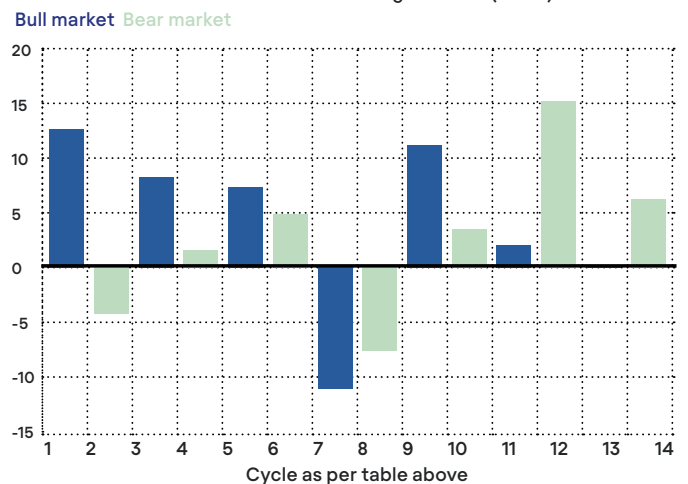
The relevance of this cannot be understated. Whilst overall exchange reserves are critically important, large investors are more than likely to seek their placement on regulated spot exchanges.

The other side of the coin, derivative markets, can blur lines as traders might be moving their Bitcoin into these platforms to use as collateral and the use of higher leverage than available to them on spot markets. Several reserve level spikes happened on derivative exchanges in the various market cycles.

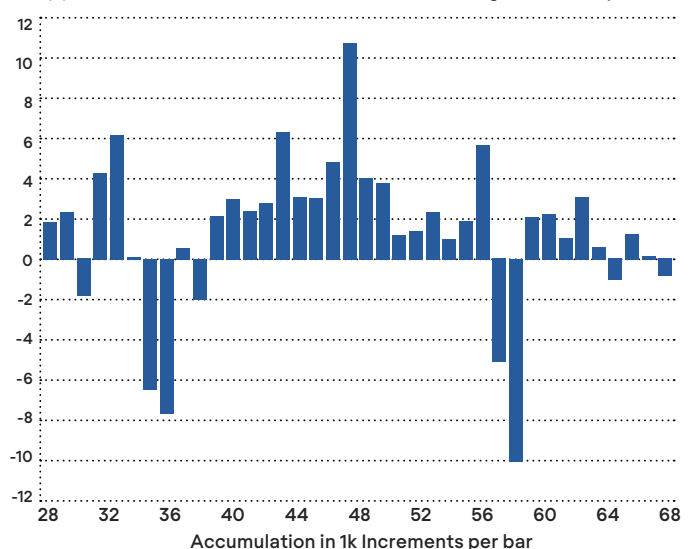
Bitcoin Price Cycles since 2021

Cycle #	Start Date	Price (\$)	Sentiment Turn
1	22/01/2021	28732	Bull
2	21/02/2021	58367	Bear
3	28/02/2021	43016	Bull
4	13/03/2021	61788.45	Bear
5	25/03/2021	50305	Bull
6	14/04/2021	64899	Bear
7	25/04/2021	47044.01	Bull
8	10/05/2021	59592.2	Bear
9	20/07/2021	29301.56	Bull
10	07/09/2021	52944.96	Bear
11	21/09/2021	39600	Bull
12	10/11/2021	69000	Bear
13	24/01/2022	32933.33	Bull
14	10/02/2022	45855	Bear
15	24/02/2022	34333.2	Bottom in?

13: Increase/decrease of addresses holding 0.1-1BTC (k BTC)



14: (k) Number of Bitcoin added in addresses holding 0.1-1BTC vs price





## Strength gets relative

Many traders and algo's look to technical indicators to develop their strategies. While Technical Analysis (TA) holds a mixed bag of success in indicating price reversals and further discounts actual fundamentals, the reality is that they are deployed by investors.

It's important to understand that indicators such as these are only as powerful as how many people believe it. Bordering on 'Group Think', various indicators have some success so long as a lot of other people are sharing the same vision at the time.

The most popular, the Relative Strength Index (RSI), is likely to be a part of traders strategy. Copper has looked into this topic in a past report ([read here](#)).

Looking at the RSI at the top and bottom during cycles seen since 2021, shows that market participants are quicker to enter and exit positions than the traditional 'oversold' or 'overbought' thresholds would suggest (see chart 16 & 17).

The data shows that towards the bottom, there is a great deal more 'fear of missing out' with investors going back in. And towards the top, market participants are more than happy to exit positions taking profits, even if the indicator would suggest there is still room to grow.

## Sensitivity training

The study has been able to establish several important market trend lines that coincide either with fundamental shifts or market algorithmic price strategies.

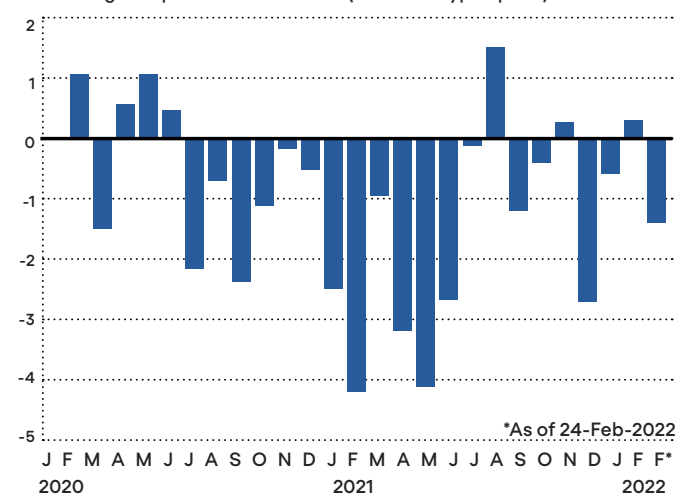
The key finding, really, is that Bitcoin traders and investors will have to use different metrics to establish whether they are entering the market at an opportune time or not.

As far as the data shows, Bitcoin's exponential price movements can happen with small changes in overall exchange reserves - the maximum available for sale at the time.

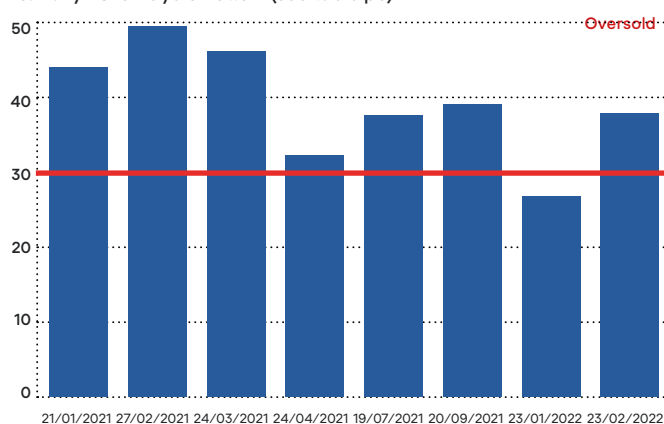
Investors will need to continue looking at these levels and potential changes in trends when taking a position, long or short.

We would like to emphasize again that Bitcoin is as pure a supply and demand asset class as they come. Everything is for sale at the right price.

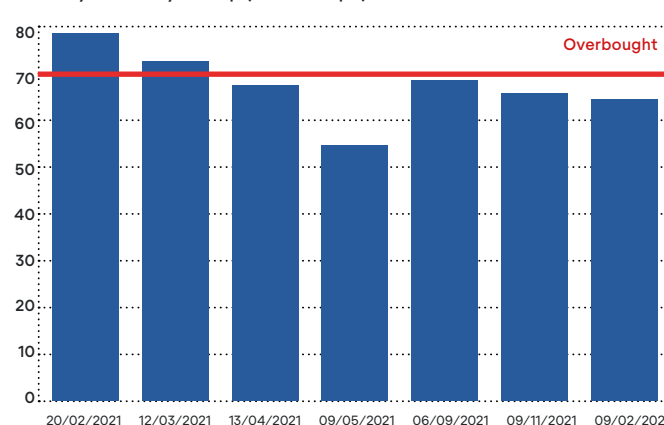
15: % Change in spot market reserves (Source: Cryptoquant)



16: Daily RSI on Cycle Bottom (see table p6)



17: Daily RSI on Cycle Top (see table p6)



### Data Sources

CoinAPI - CryptoQuant - Glassnodes

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