
A case study in risk management

Cryptocurrency and Blockchain Assets Research Note | February 2023

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Key takeaways

- Risk-weighted asset allocation and rebalancing is a simple yet powerful analytical lens and process that can help identify exposure to large losses from any single investment or asset class.
- We review the portfolio impact of the large drawdown in cryptocurrencies from a risk lens perspective and find that cryptocurrencies are highly potent additions to portfolios requiring small allocations to produce a sizable impact on a portfolio's performance.
- On a flows basis, investors continued to shy away from crypto-related assets. We see few first-time buyers entering the market and a historically large ratio of net sellers-to-buyers in Q4 2022.

Applying a risk lens to cryptocurrencies

As of the close of the year, Bitcoin sold off almost 65%, an astounding amount. Yet it may be surprising that this sell-off falls roughly within statistical expectations for this asset class due to its extremely high volatility. In fact, the historical volatility of Bitcoin and other cryptocurrencies has been roughly 60% or higher in a number of cases, which can be interpreted to indicate that investors should expect a gain or loss in this vicinity or more roughly a third of the time¹ if one assumes this volatility is to persist.

¹ Historical volatility is not always indicative of future volatility.



The degree to which this drawdown has impacted investors depends on their risk management skill and execution (or perhaps luck). Said differently, we know that all assets can cause losses in our portfolio. However, we really want to protect our portfolios from losing A LOT of money. For this reason, lenses on portfolio risks help us minimize the chances that this might happen. Let's take a look at one such lens.

Asset allocations are typically considered on the basis of how much capital is allocated to different investments. While this accounts for how the money is allocated, it doesn't provide a good view of which assets actually drive performance. As shown below, in a portfolio with a 20% allocation to cryptocurrencies, crypto will represent the bulk of the risk in the portfolio (more than 50%). So a risk-weighted view of asset allocations can provide further insight into what drives the performance of portfolios.

We calculate risk-weighted asset allocations by multiplying the dollar allocations by the realized annual volatility of the asset. While past volatility is certainly not an indication of future volatility, it can help provide a better sense of the risk profile of investments and what allocations are broadly driving portfolio performance. Risk views that combine all exposures including publics and privates are critical to understanding a portfolio's exposures.

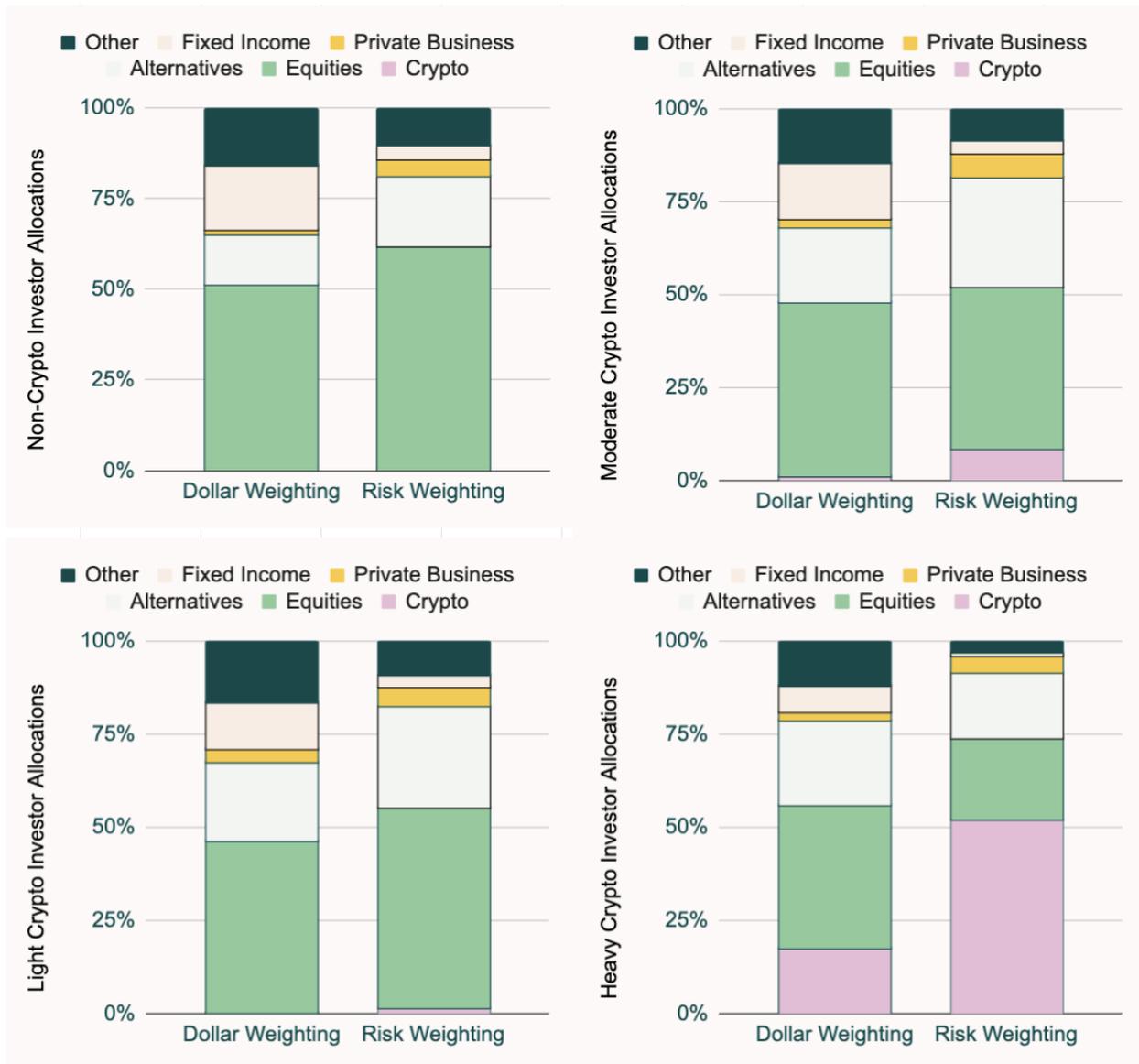
In Exhibit 1 we see a comparison of capital allocations versus risk-weighted allocations. While the capital-weighted portfolio appears to be somewhat diversified in the "Heavy Crypto" portfolios, we see far less diversification in the risk-weighted view. In fact, cryptocurrencies dominate the portfolio. This is because cryptocurrencies have historically been extremely volatile, approximately 3–6 times more than most other assets in the portfolio.



Exhibit 1

Crypto risk-weightings represented over 50% of overall portfolio risk among the top third of investors.

Average portfolio risk allocations as of December 31, 2021



Source: Addepar

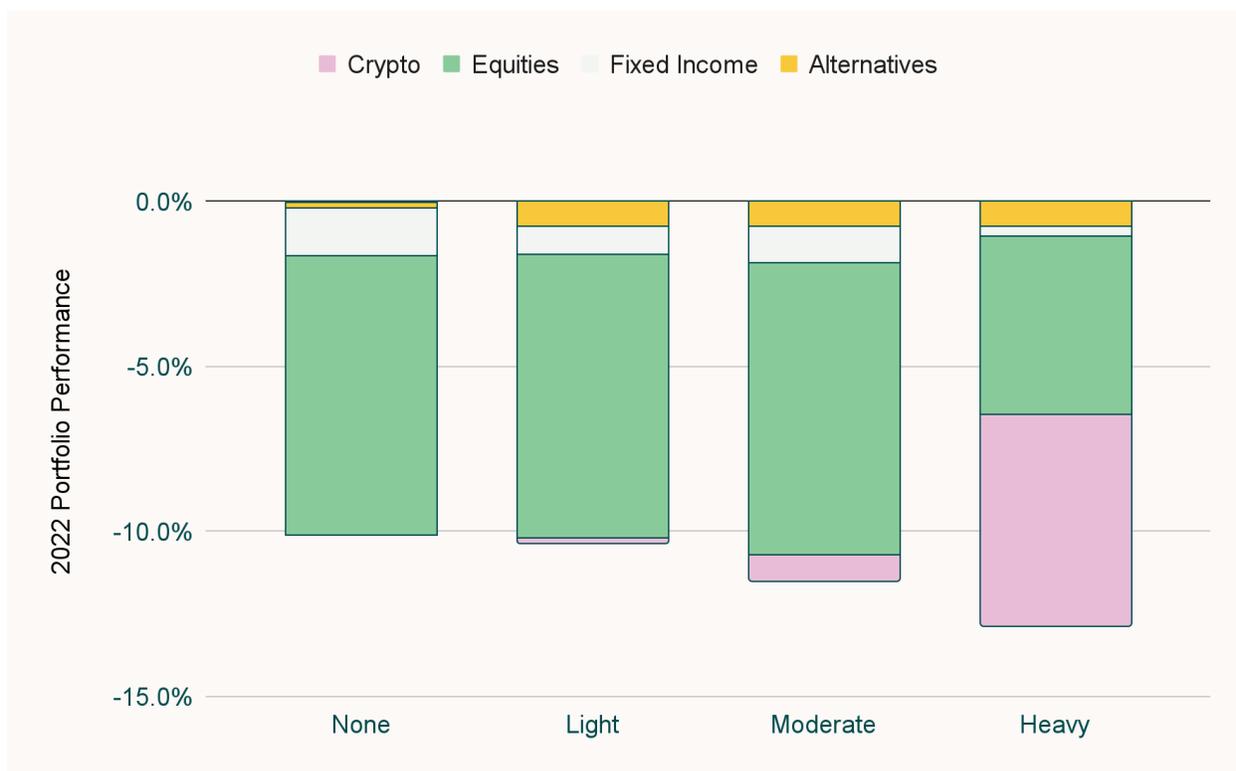
We grouped crypto investors into three equally sized classifications (light, moderate and heavy) based on dollar-weighted exposures to crypto-related assets as of December 2021 and compared them to investors who held no crypto positions entering 2022.



As shown above, investors with the highest risk-shares coming into the year were the hardest hit. The figure below shows overall 2022 portfolio performance across non-crypto investors and those who held light, moderate and heavy risk-shares of crypto in their portfolios. The most exposed crypto investors entering 2021 had 50% of their risk allocated to cryptocurrencies and blockchain-related technologies on average. In 2022, approximately half of their losses were driven by falling cryptocurrency valuations.

Exhibit 2

Crypto investors with the largest risk-share toward crypto had 3% lower returns in 2022. 2022 portfolio performance with breakout of crypto's contributions to overall portfolio performance



Source: Addepar

We grouped crypto investors into three equally sized classifications (light, moderate and heavy) based on dollar-weighted exposures to crypto-related assets as of December 2021 and compared them to investors who held no crypto positions entering 2022.



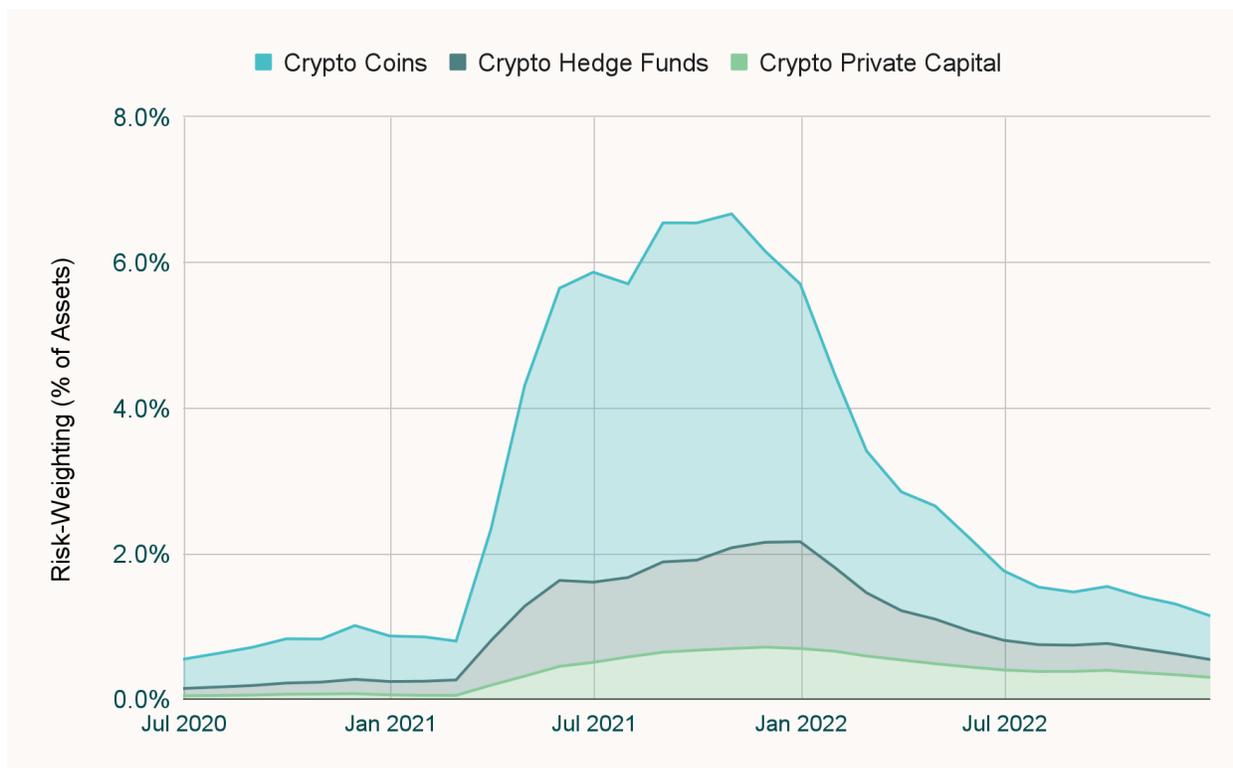
Another common practice for investors who actively manage risk is to ensure that the risk weights to assets stay the same over time. This is equivalent to rebalancing on a risk-adjusted basis. This helps ensure that the expected absolute return contribution remains within consistent bands over time. Arguably, this can be particularly challenging with highly volatile assets such as cryptocurrencies, which only makes the best practice even more important. As shown below, average investors who invested in cryptocurrencies did not follow this.

Exhibit 3 presents the aggregate amount of risk taken by investors in crypto through time. This is a function of total dollars invested in crypto-related assets, price changes in crypto in relation to other asset classes and crypto's volatility through time. Coming into 2022, investors on aggregate had outsized exposures to crypto. Driven primarily by the decline in crypto prices relative to the rest of their portfolios and decreasing crypto volatility throughout the year, investors ended 2022 with aggregate risk exposures 5x lower than where they had begun the year.



Exhibit 3

Investor risk exposures to crypto fell 80% in 2022 from their Q4 2021 levels
3-month moving average



Source: Yahoo! Finance

Risk-weighting is calculated by taking the dollar-weighting of crypto investments and multiplying by the ratio of 3-month Bitcoin volatility to the 3-month volatility of a portfolio that is 60% equities and 40% fixed income.

Interest in cryptocurrencies has been cooling

2022 marked a challenging year for cryptocurrency and blockchain-related technologies. As cryptocurrency prices fell and other systemic issues hit the market, such as the FTX failure and accompanying ripples throughout the industry, expected returns by investors fell and investors began to take risk off the table.

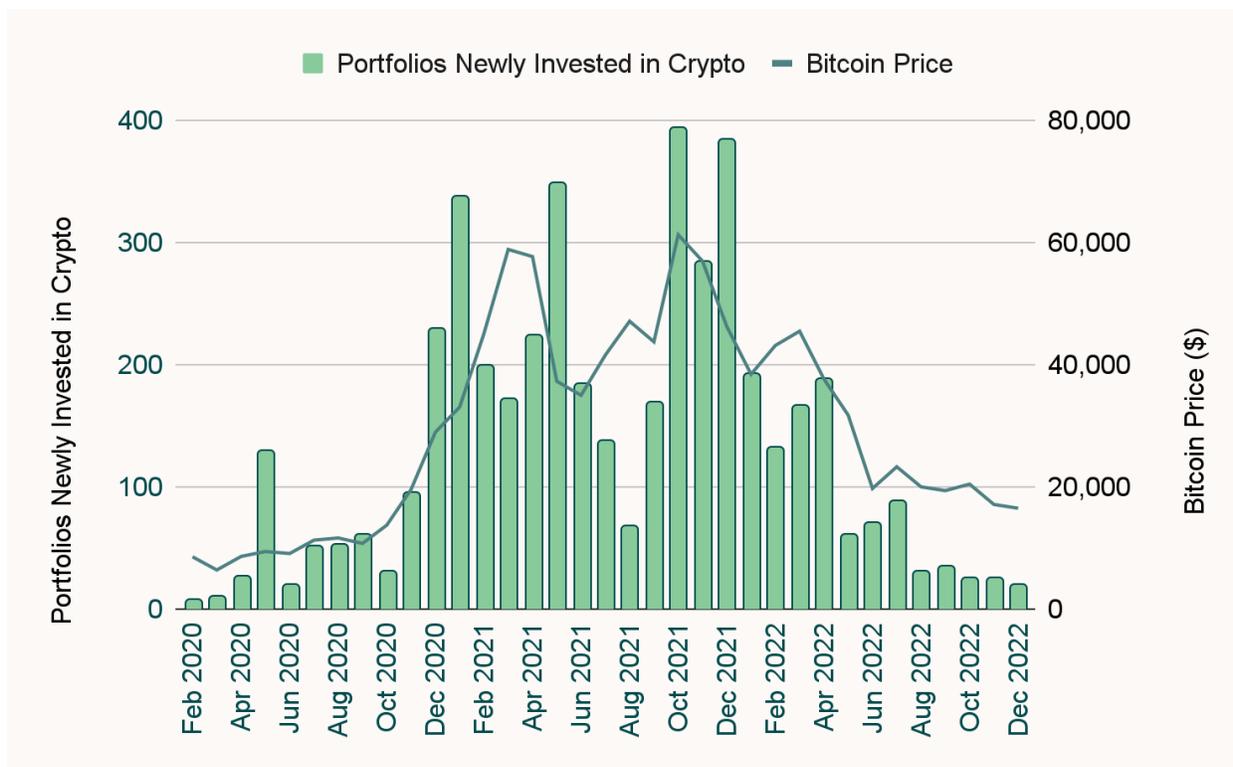
The chart below shows the total number of new crypto investors per month against Bitcoin prices from February 2020 through December 2022. After Bitcoin prices fell more than 70% from their October 2021 highs, new investors at first flocked into the market to buy the dip. But as prices



continued to fall into 2022 to settle at multi-year lows beginning in June 2022, few new investors entered the market.

Exhibit 4

The total number of new crypto investors has dramatically decreased as prices have declined. Number of investors investing in crypto for the first time, Bitcoin price, Feb 2020–Dec 2022

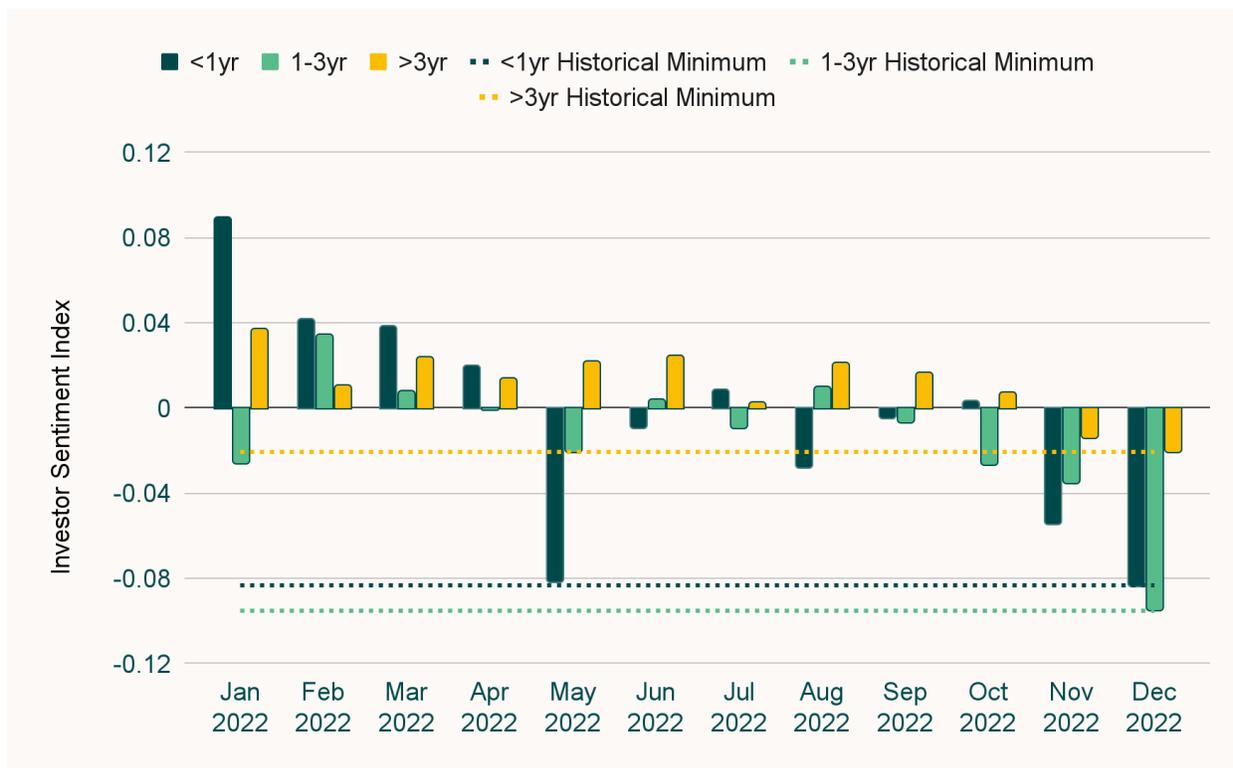


Source: Addepar for investor data; Yahoo! Finance for Bitcoin prices

While new investors were slow to enter the market in the second half of 2022, already established crypto investors’ sentiment also turned negative. Exhibit 5 below shows monthly sentiment of investors who had first invested in crypto less than one year prior, between one and three years earlier and over three years from the current date. For the first time in recorded history, long-term investor sentiment turned negative in November and December of 2022, while short- and medium-term investor sentiment hit new lows in December 2022.

Exhibit 5

Crypto investor sentiment hit historic long-term lows in December 2022. Investor sentiment by length of investment, Jan 2022–Dec 2022



Source: Addepar

Sentiment is computed by taking the number of portfolios with net positive cryptocurrency-related flows in a period, subtracting the number of portfolios with net negative cryptocurrency-related flows, and dividing by the total number of portfolios with crypto-related positions during that period. We only examine portfolios with greater than \$100,000 in assets to avoid unnecessary noise. Historical minimums are calculated back to January 2020.

Conclusion

2022 was a challenging year for all, especially for crypto investors. However, losses provide a tremendous opportunity to reflect upon our skills as investors and learn from the experience. We believe that understanding, and then managing, relative asset-class risk can be one of those lessons. In this note, we've shared several best practices to assess your portfolios and the assets held within them. For an individual examination of your exposure to crypto, as well as all other asset classes in your portfolio, please email us for more information at Research@Addepar.com.



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