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Bitcoin and its siblings, an alternative to safe-haven assets?

Global financial markets

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- As policymakers buy assets worth trillions of dollars, demand for safe-haven assets has risen, helped also by depressed interest rates and growing concerns about inflation.
- The turnover of many cryptocurrencies as well as the number of people using them has increased too. Despite a sharp sell-off in March, they have been among the best-performing assets year-to-date, and their correlation to the price of gold has risen.
- We review the performance of select crypto-currencies and traditional asset classes over recent years, and share some observations that we think are helpful to assess their attractiveness as an alternative to safe-haven assets and as a portfolio diversifier.
- Our main takeaway is that given their high volatility and the size of the past drawdowns, cryptocurrencies might be attractive to speculative investors, but they are neither a suitable alternative to safe-haven assets, nor do they necessarily contribute to portfolio diversification.
- For investors looking for a defensive tilt to their asset allocation, we currently recommend gold, investment strategies that exploit option-implied volatility to phase market entries, and the use of relative value positions.

Source: Unsplash, André François McKenzie.

Bitcoin and other cryptocurrencies captured widespread attention in 2017 when their prices skyrocketed (see Fig. 1). The period that followed saw them plunge in value and waning interest from mainstream investors. Many observers at this time declared this to be the end of cryptocurrencies.

Yet cryptocurrencies have not gone away. Although most have failed to recover fully from their deep drawdowns, they appear nevertheless to have benefited significantly from the simultaneous demand from investors for both riskier assets and safe havens (see Fig. 2). Both these trends have been driven by the fall in real interest rates—the difference between nominal interest rates and inflation—on the back of trillions of dollars of asset purchases by central banks. This has caused shares, gold, silver, and safe-haven currencies such as the Swiss franc to rally. However, so far this year, Bitcoin has outperformed all these assets.

Fig. 1: How to build a legacy as a rock star asset

Price performance of select assets, indexed (August 2015 = 100)

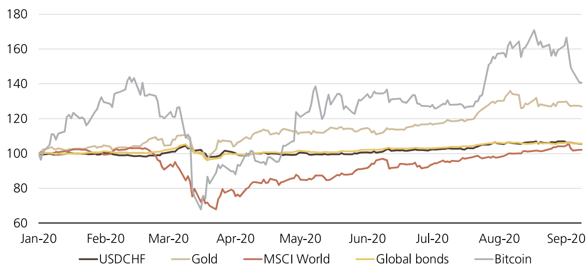
Source: UBS, Bloomberg, as of 8 September 2020

In light of these impressive performance numbers, we provide some further analysis on how well Bitcoin and other cryptocurrencies compare to traditional assets and analyze their attractiveness as safe havens.

We base our assessment on a review of historical volatility, correlations, and drawdowns. We do not forecast a future Bitcoin/US dollar exchange rate, as we are not comfortable with the available tools and models for such an exercise. However, we note that even if Bitcoin were to replicate just a small fraction of its historical performance, it could still outperform traditional asset classes. This might suggest a justification for some exposure, despite its extraordinary high volatility.

Fig. 2: At the top of the 2020 performance league

Price performance of select assets, indexed (1 January 2020 = 100)



Source: UBS, Bloomberg, as of 8 September 2020

For investors interested in a fundamental assessment, we refer to the report from our Chief Economist, Cryptocurrencies, Beneath the bubble, Chief Investment Office WM, 12 October 2017.

Two other interesting publications in this context are:

Understanding China's digital currency and blockchain initiatives, Chief Investment Office GWM, 23 April 2020, which discusses the push for centralized digital currencies by China, as well as central banks and other public entities globally, and links these initiatives to our thematic investment advice in the fintech area.

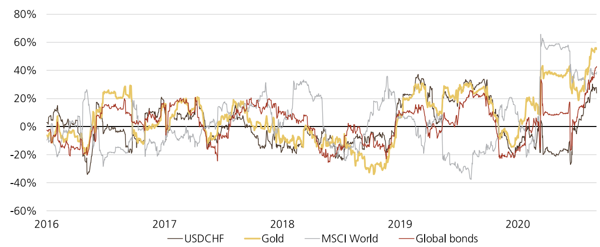
Enabling technologies, Chief Investment Office GWM, 23 April 2020, which discusses how enabling technologies, like artificial intelligence, augmented reality/virtual reality, big data, cloud computing and 5G, are set to transform many industries in the coming years. This longer term investment theme also allows investors to gain exposure to the blockchain technology, without the need of a direct investment in cryptocurrencies.

Morphing into a safe-haven—how correlations have changed over time

A low correlation between one asset and another can help to diversify a portfolio. This used to be an interesting feature of Bitcoin and other cryptocurrencies, given their close-to-zero average correlation with other asset classes (Fig. 3).

Fig. 3: Bitcoin's correlation to other asset classes has changed since the crisis

Three-month rolling correlation between Bitcoin and various other assets



Source: UBS, Bloomberg, as of 8 September 2020

Interestingly, the situation changed markedly at the start of the COVID-19 crisis. As turmoil roiled financial markets, most correlations turned sharply positive. We think this is likely related to the unprecedented increase in liquidity needs, forcing investors to convert assets into cash as well as indiscriminate selling and technical factors, such as the growing relevance of algorithmic trading and momentum-based strategies. Not even gold was immune to this initial reaction. The yellow metal tanked 15%, despite its reputation as a safe-haven.

Since then, however, some correlations have started to revert, while others have increased further. We find it remarkable that Bitcoin's correlation to gold has reached the highest levels in its history, underpinning anecdotal evidence that some investors consider it a viable alternative to gold due to its strictly limited supply.

A strictly limited supply is obviously an important argument used to justify a higher price, but we also remind our readers that this alone is not sufficient to guarantee such an outcome. What ultimately determines the price of a good or service is the equilibrium between supply and demand.

Our conclusion: Economics 101 states that supply and demand determine price, and on that basis cryptocurrencies might rise further. But even if supply is truly limited, investors should believe that demand really will increase. Supply may also increase in the form of new digital currencies. If history is any guide, rising cryptocurrency prices would likely encourage a crop of new coin offerings.

Timing is everything

Most cryptocurrencies are notorious for their high volatility. This can be a blessing or a curse, depending on the timing of the purchase. Year-to-date in 2020, cryptocurrencies have been among the best performing assets globally (see Table 1). After a solid start to the year and a substantial correction during the market crash, prices recovered swiftly and are now trading substantially higher than at the start of the year.

Table 1: Top in terms of absolute performance, average in terms of risk-adjusted returns, poor in terms of drawdowns

Select return metrics of various assets and cryptocurrencies; sample period: 1 January 2020 – 8 September 2020, daily log returns

	USDCHF	Gold	MSCI World	Global bonds	Bitcoin	Litecoin	XRP	Bitcoin Cash	Ethereum	EOS
Return (ytd)	5%	24%	2%	6%	34%	13%	20%	9%	95%	5%
Volatility (p.a.)	8%	20%	34%	6%	74%	100%	84%	103%	98%	102%
Risk-adjusted return	0.7	1.2	0.1	0.9	0.5	0.1	0.2	0.1	1.0	0.0
Maximum drawdown	-6%	-12%	-34%	-9%	-53%	-61%	-59%	-66%	-61%	-65%

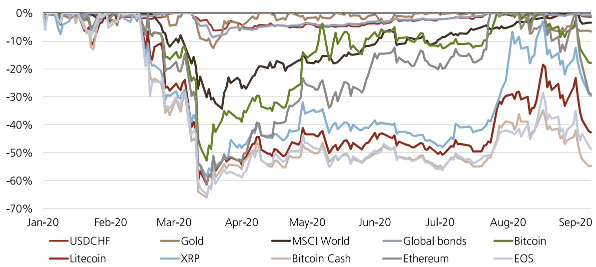
Source: UBS, Bloomberg, as of 8 September 2020

With a risk-reward ratio (annualized volatility divided by annualized return) of 0.5, Bitcoin's risk-adjusted return compares favorably to most other cryptocurrencies, but not to defensive assets like gold or bonds.

The picture becomes less favorable when we look at the maximum drawdown. This metric calculates the biggest possible loss an investor could have faced over a time period, i.e., it shows the loss in wealth of someone who bought at the top and sold at the bottom. For the cryptocurrencies in our sample, this metric has varied between 50% and 65% in the last eight months, which is high even when compared to the most volatile sectors of stocks. In addition, drawdowns not only tend to be quite pronounced, they have also tended to be prolonged. For example, Bitcoin cash and Litecoin are still trading substantially below their highs reached in early 2020 (Fig. 4).

Fig. 4: Steep drops possible

Drawdowns of select assets, 2020

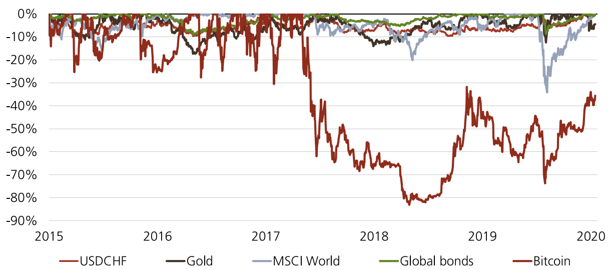


Source: Bloomberg, UBS, as of 8 September 2020

Such substantial losses are also possible with traditional assets. Some countries fail to meet their obligations vis-à-vis bond holders with alarming frequency, and of course companies can go bust. Both situations can result in substantial and permanent losses. One difference, however, is that many traditional assets pay coupons or dividends. For a diversified bond or stock portfolio, these regular cash flows buttress total returns and often substantially reduce the drawdown over time (see Fig. 5).

Fig. 5: Hold your breath

Drawdowns of select assets; sample period: 18 August 2015 – 8 September 2020



Source: Bloomberg, UBS, as of 8 September 2020

Our conclusion: The timing of investments in cryptocurrencies is of utmost relevance given the combination of potentially sharp drawdowns and the lack of regular interest or dividend payments. The latter is typically an attribute of safe-haven assets, but when combined with the magnitude of past corrections, we see the appeal of Bitcoin as a safe-haven significantly reduced. That said, investors who are very trading-oriented or can avoid outright exposure through relative value trades, e.g., through trading one cryptocurrency versus another, might find these large price swings appealing.

Survivorship bias

The limited data availability complicates an assessment of the longer-term attractiveness of cryptocurrencies. One exception is Bitcoin, which launched in 2009, and has also been one of the most popular coins.

Over a five-year period, Bitcoin has comfortably outperformed most other assets in absolute terms, with an annualized return of more than 70% (Tab. 2). The performance of other cryptocurrencies assessed here looks a lot less favorable, however. We compare the performance of five major cryptocurrencies in table 2 below. Their absolute returns are all negative, and their maximum drawdowns have been mostly even greater than Bitcoin's.

Our conclusion: Choosing the right cryptocurrency is of utmost importance. This underscores the point raised above. A clear view on the future demand drivers for any given cryptocurrency is crucial. Focusing on the great performance of the winners, instead of also taking into account the meager performance of the losers, is a well-documented phenomenon in behavioral finance.

The risk of regulatory changes is also crucial in this regard. Compared to Libra, the digital currency project launched by Facebook, cryptocurrencies haven't received much attention from authorities and regulators. If Bitcoin and other cryptocurrencies were to be used more widely, they might come to be viewed as a risk to financial stability. In combination with existing concerns that cryptocurrencies are used to finance criminal activities, the risk of regulatory measures would likely rise, potentially undermining the demand for decentralized coins. In this sense, Bitcoin et al. could become victims of their own success.

Table 2: Choose carefully where you invest

Select return metrics of various assets and cryptocurrencies, annualized in %; sample period: August 2015 – September 2020 and February 2018 – September 2020, respectively

						Shorter sample period: February 2018 - September 2020				
	USDCHF	Gold	MSCI World	Global bonds	Bitcoin	Litecoin	XRP	Bitcoin Cash	Ethereum	EOS
Return	1%	11%	7%	4%	76%	-36%	-39%	-62%	-28%	-77%
Volatility	7%	14%	16%	5%	72%	96%	87%	113%	91%	105%
Risk-adjusted return	0.2	0.8	0.4	0.8	1.1	-0.4	-0.4	-0.5	-0.3	-0.7
Maximum drawdown	-10%	-17%	-20%	-9%	-83%	-91%	-78%	-95%	-91%	-91%

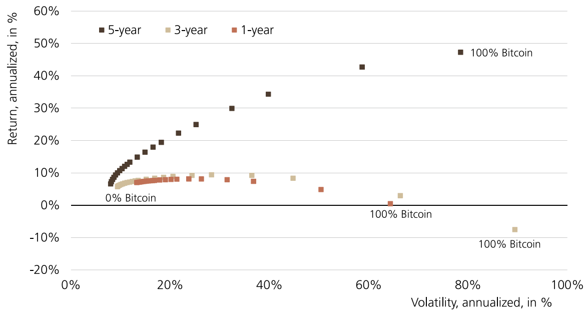
Source: Bloomberg, UBS, as of 8 September 2020

Portfolio context

We conclude by assessing whether cryptocurrency exposure can help to diversify a portfolio. Again, we focus on Bitcoin, given the more limited data for other cryptocurrencies. We take the data of a diversified UBS portfolio and then calculate risk-adjusted returns for a combined portfolio with Bitcoin exposure varying between 0% and 100% (Fig. 6). In our simulations, we rebalance our portfolios every month.

Fig. 6: But adding some exposure helps, right?

Risk and return of a traditional portfolio with a varying degree of Bitcoin exposure; calculations are based on monthly log returns and assuming a monthly re-balancing of the portfolio; no transaction costs were included



Source: Bloomberg, UBS, as of 8 September 2020

Our conclusion: What all our simulations have in common is that they rapidly increase the volatility of the overall portfolio to levels most investors would typically not feel comfortable with. Over the longer term, i.e., five years, the return of Bitcoin has been sufficiently large to boost absolute returns quite a bit. In addition, a moderate exposure would not have compromised risk-adjusted returns too significantly. But this assessment becomes less favorable over a shorter timeframe. Over the last one and three years, a small Bitcoin exposure would have resulted in higher total returns too, but at the cost of a much faster increase in annualized volatility. As a result, the risk/reward would have deteriorated sharply.

Conclusions

Over various periods, Bitcoin and other cryptocurrencies have substantially outperformed other assets. However, their high volatility and large drawdowns cast serious doubt on their suitability as a safe-haven asset. The growing correlation to other assets, if maintained, might also start to compromise their merits as portfolio diversifiers. As such, we think these assets should be viewed as speculative instruments rather than potential alternatives to safe havens or effective means of portfolio diversification.

Our analysis suggests the following observations:

1. Not suitable for standard risk profiles: An investor's risk tolerance must be high to tolerate potentially large losses. Trading-oriented investors might find appeal in such price swings, but our analysis shows that getting the timing wrong can result in destruction of capital.
2. Survivorship bias: Choosing the right cryptocurrency is of utmost importance; while Bitcoin has done fantastically well over a longer-term horizon, other cryptocurrencies have fared a lot worse. In our view, investors often focus on the performance of the winners, without taking into account the performance of the losers. Differentiating between the winners and the losers requires a good understanding of the demand and supply drivers of any given cryptocurrency.
3. The lack of dividend and coupon payments: The timing of investments in cryptocurrencies is of high relevance due to the combination of potentially sharp drawdowns and the lack of regular interest or dividend payments. Risk assets commonly experience large drawdowns, and without regular cash flows this can more easily result in a permanent loss of wealth.
4. Limited diversification benefits: Our Bitcoin backtest improved the returns of a portfolio given its high absolute returns and its low correlation to other asset classes. More recently, however, correlations have increased and returns declined, suggesting Bitcoin may now be less suitable as a portfolio diversifier.

For investors looking for a defensive tilt to their asset allocation, we recommend gold, investment strategies that exploit option-implied volatility to phase in market entry, and relative value positions, in addition to staying invested in a broadly diversified manner. We refer interested readers to UBS CIO's last monthly letter, The dog that didn't bark, Chief Investment Office GWM, 20 August 2020.

These strategies will admittedly not compete with another market frenzy in cryptocurrencies, but they appear very attractive when we look at expected, risk-adjusted returns. For investors who are aiming to preserve and grow their wealth over time, we think these solutions are more suitable than an investment in cryptocurrencies.

Appendix

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