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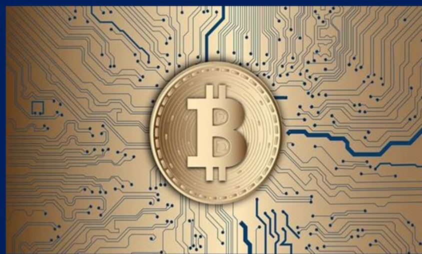

Bitcoin – A New Asset Class? - Part 2 of a 2 Part Series

In part one of the series, we examined the evolution of Bitcoin and its historical performance. This week, as promised, we will explore how portfolio managers and investors can use Bitcoin in a portfolio context. Before we look at scenarios, let us look at how the crypto currency performed over the last two weeks. At the time when published our last article, February 12, 2021, the crypto traded at US$47,251.90. Since that time the price of the coin went all the way up to US$57,355 and back down to US$47,230 yesterday, March 1, 2021, almost where it was two weeks ago. Not quite a roller coaster, but you get the point.

Now back to the matter at hand. For investors who are comfortable taking on a bit more risk, an investment in Bitcoin might be appropriate. However, with that said, those who view Bitcoin as the 'Redeemer' in a time of high uncertainty and low interest rates, should remain careful.

Given Bitcoin's great surge over the last three years, it should come as no surprise to find that the inclusion of Bitcoin in a traditional 60:40 (equity/bond) portfolio would have increased the overall portfolio returns. However, a complete assessment can only be done if its impact on the overall risk of the portfolio is evaluated, in addition to its return enhancement properties. Therefore, to evaluate the impact of Bitcoin on a diversified portfolio, factored on a risk and return basis, we consider the impact of adding various allocations of Bitcoin to a portfolio. This demo portfolio consists of a 60% allocation to the Vanguard Total World Stock ETF (VT) and a 40% allocation to the Vanguard Total Bond Market ETF (BND). The VT holds 98% of the world's market capitalisation and BND holds a market-value-weighted portfolio representing all investment grade US bonds. The review period starts on January 1, 2014, as it would have been very difficult for portfolio managers to allocate to Bitcoin before that period. The end date of the review is September 30, 2020.

TABLE 1. PORTFOLIO PERFORMANCE METRICS (January 1, 2014 - September 30, 2020)

Portfolio	Cumulative Return	Annualized Return	Volatility (Annualized Standar Deviation)	Sharpe Ratio	Maximum Drawdown
Traditional Portfolio	50.61%	6.26%	10.32%	0.54	21.07%
Traditional Portfolio + 1.0% Bitcoin	59.89%	7.21%	10.33%	0.63	21.32%
Traditional Portfolio + 2.5% Bitcoin	74.47%	8.61%	10.53%	0.75	21.80%
Traditional Portfolio + 5.0% Bitcoin	100.51%	10.87%	11.26%	0.90	22.76%

Source: Bitwise Asset Management

The analysis shows that adding Bitcoin to a portfolio has historically had a significant positive impact on long-term portfolio returns on both an absolute and a risk-adjusted basis. For example, during the entire period under consideration, a quarterly rebalanced portfolio with a 2.5% allocation to Bitcoin would have improved the traditional portfolio's cumulative returns by 23.9 percentage points. Importantly, over the same period volatility would have remained almost constant at 10.53% by adding Bitcoins to the portfolio versus 10.32% without. As a result, the Sharpe ratio improved from 0.54 to 0.75. The Sharpe ratio is defined as the measure of the risk-adjusted return of a financial portfolio and is used to help investors understand the return of an investment compared to its risk. Therefore, the higher Sharpe ratio, in our example, suggests that the portfolio would have improved with the inclusion of the crypto currency.

TABLE 2. CONTRIBUTION OF A 2.5% BITCOIN ALLOCATION TO A TRADITIONAL PORTFOLIO USING QUARTERLY REBALANCING, January 1, 2014 – September 30, 2020

Holding Period	Rolling Cumulative Return Contribution					Rolling Sharpe Ratio Contribution				
	Maximum	Median	Minimum	Win Rate	Loss Rate	Maximur	Median	Minimun	Win Rat	Loss Rate
1 Year	16.70%	2.80%	-3.00%	74.37%	25.63%	2.03	0.29	-0.45	73.61%	26.39%
2 Years	20.27%	7.81%	-0.65%	96.89%	3.11%	1.1	0.41	-0.04	96.89	3.11%
3 Years	22.39%	14.65%	1.83%	100%	0.00%	0.74	0.48	0.07	100%	0.00%

Source: Bitwise Asset Management

The positive impact of Bitcoin's addition over the period is notable and unsurprising since it captures a period during which Bitcoin's price appreciated substantially. Part one would have highlighted this. To evaluate Bitcoin's contribution to a portfolio over variable performances, a rolling-period analysis to simulate different holding periods over all possible time frames instead of point-in-time analysis was used. Using a quarterly rebalancing frequency and allocating to Bitcoin proportionally from the stock and bond side of the portfolios, we found that a 2.5% allocation to Bitcoin has a win rate or likelihood of positive returns in a diversified portfolio of 100% for holding periods of three-years, 97% for two-years periods, and 74% for one-year periods since 2014.

Over each of the three durations, the portfolio impact has been both significant and skewed on the positive side. For example, the median impact of a 2.5% allocation to Bitcoin on a 60/40 portfolio over a three-year period has been to increase total returns by 14.65%. Negative impacts, when and where they have occurred, have been limited. Again, similar to the point-in-time analysis, this positive impact came without a significant rise in portfolio volatility. So, we see again that although Bitcoin in and of itself is very volatile, its positive impact on returns has outweighed its negative contribution to risk, leading to significant increases in risk adjusted returns as measured by the Sharpe ratio. This is also evident in the 41% on average boost in the portfolio's Sharpe ratio when there was a 2.5% allocation to Bitcoin over a three-year holding period.

To conclude, we understand that crypto currency is a highly volatile asset class, but when compared to other traditional asset classes, the risk-reward ratio makes it more digestible. The asset's scarcity, growing popularity, and demand continues to drive the price higher, raising the asset's medium to long-term return outlook. Even if this comparison appears to be as optimistic as it appears, there is no guarantee that Bitcoin will boost a portfolio's risk-adjusted returns in the future to the same extent it did in the past.

Another risk associated with Bitcoin investment is increased competition from other crypto currencies, which may result in lower Bitcoin demand and a price decline, wiping out all previous gains. However, unlike most other crypto currencies, Bitcoin is now accepted through a range of payment channels, but its exchange for real goods or services is restricted. Bitcoin is also unregulated by central banks or governments, and some countries have outright banned it, especially given the security concerns surrounding cybercrime and other illegal activities.

Is it worthwhile to invest in Bitcoin? Yes, indeed. When compared to traditional strategies, investors can be much more effective when investing in this asset class, but it is important that they fully understand the risks and develop a portfolio that suits their risk appetite and desired return.