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Morgan Creek Digital Analyzes BlackRock's Study that Suggested an 85% Bitcoin Allocation

A [2022 study](#) published by asset management giant BlackRock (\$8.6 trillion in assets under management) recently went viral on social media and news outlets. The study grabbed readers' attention with the assertion that an 84.9% allocation to Bitcoin resulted in the optimal portfolio. This assertion, combined with BlackRock filing for a spot Bitcoin ETF, has investors excited about the anticipated entry of institutional money into Bitcoin and crypto and the potential rubber stamp of legitimacy this would bring.

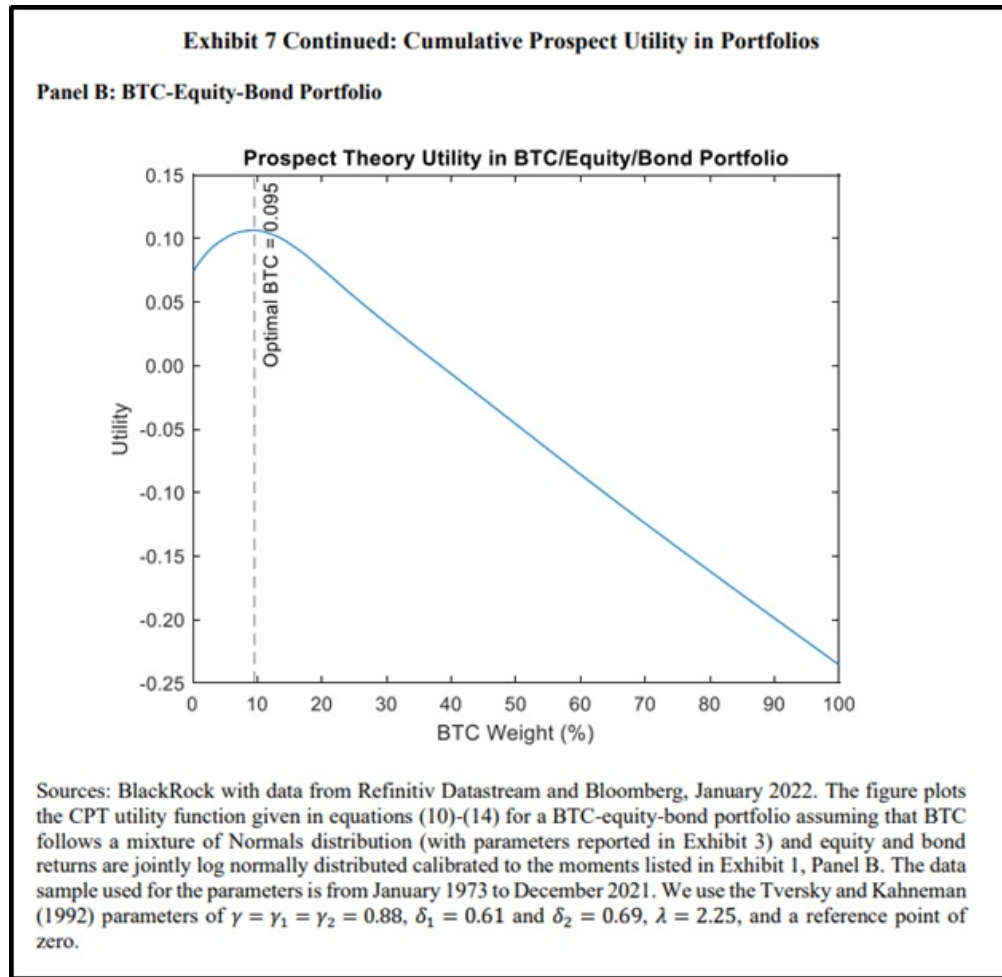
2.3 Effect of Skewness in Practice

We perform the following asset allocation exercise. Suppose we start with a 60-40 equity-bond portfolio. Assuming that equity and bond returns are log normal, fitted to the moments reported in data in Exhibit 1, we compute the power utility risk aversion coefficient to yield that 60-40 allocation. In this case, a risk aversion of $\gamma = 1.50$ corresponds to 60-40. Then, we hold the risk aversion fixed and estimate the optimal weight of BTC, h_{BTC} , assuming that the equity and bond weights are held in the same pro-rata 60-40 allocation. That is, the equity and bond weights are set to be $(1 - h_{BTC})h_{eq}$ and $(1 - h_{BTC})h_{eq}$, respectively. We use the mixture of Normals distribution (see equation (1) and Exhibit 3) for BTC returns that captures large positive skewness.

Exhibit 4 presents the results. Starting with a 60-40 equity-bond portfolio, which is produced with a risk aversion of $\gamma = 1.50$, the optimal BTC allocation is a large 84.9%! The remainder of the portfolio, 15.1% is split 60-40 between equities and bonds. Although BTC has an extremely large volatility of 1.322 (see Exhibit 1), the pronounced positive skewness leads to large allocations and dominates in the utility function (see equation (9)). The certainty equivalent compensation required to not invest in BTC is close to 200%. In Exhibit 4, starting at a 20-80 stock-bond portfolio leads to a 12.5% BTC allocation, and a risk tolerant investor with an 80-20 stock-bond portfolio desires a levered position in BTC of 106.6%.

As with many sensational headlines, though, this suggestion and excerpt were taken out of context. The 85% allocation was assuming a certain portfolio construction, risk aversion factor, and model approach, none of which BlackRock suggested were the optimal assumptions or concluded approach to use. In the following sentences of the same paragraph above, allocations of 12.5% and 106.6% (levered) are the resulting outcomes under different conditions. BlackRock's paper was not meant to give a point suggestion for asset allocations, but it instead aimed to provide different models used in forming an asset allocation strategy and the spectrum of assumptions and outcomes

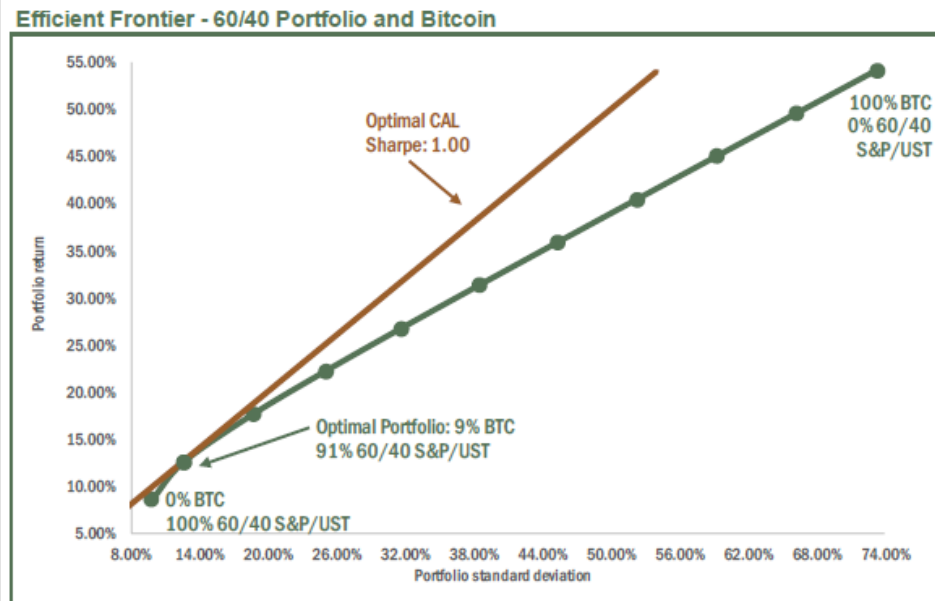
from these models. One of these approaches, the Cumulative Prospect Theory (CPT), yields a similar conclusion as Morgan Creek Digital's asset allocation research.



Under BlackRock's CPT approach, the optimal Bitcoin allocation is approximately 9.5%. In Morgan Creek Digital's research paper titled "The Quantitative Investment Case for Blockchain Technology in Institutional Portfolios" the optimal Bitcoin allocation was concluded to be 8.88%.

Bitcoin¹⁵

Figure 17: Efficient Frontier - 60/40 Portfolio and Bitcoin



Source: Morgan Creek Digital

Figure 18: Portfolio Allocation Statistics - 60/40 and Bitcoin

Statistics	S&P 500	UST	BTC
Annualized Compound Return	12.06%	2.56%	54.17%
Annualized Std. Deviation	17.61%	6.44%	73.24%
Optimal Allocation	54.67%	36.45%	8.88%

Source: Morgan Creek Digital

The optimal portfolio with a carve out to Bitcoin is 9% Bitcoin and 91% 60/40; this portfolio has an annual return of 12.57% and a Sharpe Ratio of 1.00, again increasing both return and the risk/return profile with this allocation in the above analysis.

Morgan Creek Digital’s approach in this analysis was mean variance optimization, where optimal portfolios have the highest Sharpe Ratio, which is a measure of risk-adjusted returns.

Is it statistically significant that two different parties, BlackRock and Morgan Creek Digital, using two different models, arrived at a similar allocation conclusion within 60 basis points of each other? Likely not, but the results are interesting nonetheless. Whether the optimal allocation is 85% or 9% or another percentage, it seems that any allocation to Bitcoin and blockchain technology may be more advantageous than none, which the results of both BlackRock and Morgan Creek Digital’s research would support. Ultimately, BlackRock’s involvement in Bitcoin represents a potential paradigm shift in the perception of cryptocurrencies within the institutional investment landscape. While the financial industry has witnessed growing interest in digital assets, this endorsement from a global giant like BlackRock may add credibility to the potential role of Bitcoin in diversified investment portfolios. As institutional investors navigate the evolving landscape, research from the likes of BlackRock and Morgan Creek Digital prompts a reevaluation of traditional investment strategies and a closer examination of the benefits that cryptocurrencies may bring to the broader financial ecosystem.

Morgan Creek Digital’s full research report on Bitcoin and Blockchain allocations is available upon request.

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Morgan Creek Capital Management | 301 W. Barbee Chapel Road, Suite 200, Chapel Hill, NC
27517

[Unsubscribe ljacob@morgancreekap.com](mailto:ljacob@morgancreekap.com)

[Constant Contact Data Notice](#)

Sent by mcdigital@morgancreekap.com