Bitcoin and Ether in a Portfolio Context: Diversification or Digital Roller Coaster?

An attempt to provide some clarity

Introduction

Have you ever wondered whether cryptocurrencies like Bitcoin and Ether could be a good fit for your investment portfolio? Are they essential for diversifying your portfolio, or just a wild rollercoaster ride?

In recent years, cryptocurrencies, led by Bitcoin as the first and most prominent cryptocurrency, have evolved from a niche experiment to a global phenomenon. Last year, and especially following the US elections, cryptocurrencies have experienced an impressive momentum characterized by strong capital inflows from institutional investors into Bitcoin ETFs, indicating that interest in digital currencies is growing. The prospect of regulatory easing and the potential introduction of Bitcoin reserves in the US is further strengthening investor confidence. Many believe that Bitcoin could play a more significant role in the global financial system in the future.

Bitcoin and Ethereum/Ether: differences and similarities

To answer the question of whether cryptocurrencies like Bitcoin and Ether fit into a portfolio, we first examine the differences and similarities between these two digital currencies. Bitcoin and Ether are the most well-known digital currencies, but they serve different purposes. Bitcoin was introduced in 2009 and is, simply put, a digital peer-to-peer payment system that operates without a central authority. It is based on a blockchain, a decentralized, public database that records all transactions. Supporters view Bitcoin as "digital gold," a hedge against inflation, and a response to distrust in traditional currencies and central banks. They value its decentralization and the limited supply of Bitcoins, which make it a store of value in their view.

Ethereum was introduced in 2015 and is, simply put, a blockchain platform where programs and contracts can be created. Supporters of Ethereum value the versatility of the platform, which enables many different applications, such as digital art, financial services, and decentralized applications (dApps). Ether (ETH) is the currency used to settle transactions on the Ethereum platform.

The portfolio question: diversification or speculation?

The unique characteristics of Bitcoin and Ether provide an initial hint of how their roles in an investment portfolio might differ. But are they sensible investments, or merely speculative? Should they be considered a serious form of investment, or are they just speculative assets? Critics like Warren Buffett generally reject cryptocurrencies, arguing that they lack intrinsic value and are more speculative assets than meaningful investments. With increasing acceptance among large investors, rising market liquidity, and supportive regulations, this debate is more relevant than ever.

Are cryptocurrencies the missing piece in your portfolio? Let's analyze the potential and risks together. The following analysis is well-founded, though at times technical and complex – but stay tuned, it will be worth it.

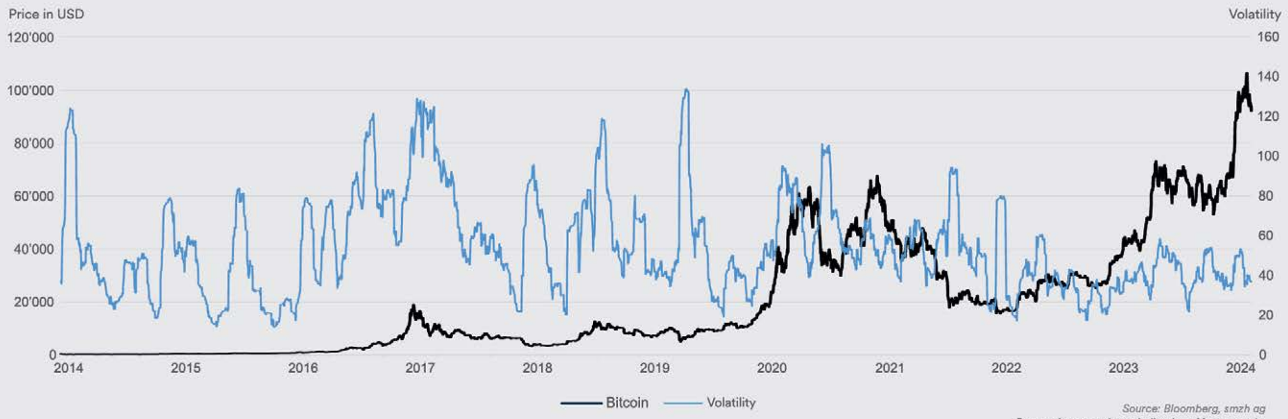
To explore whether cryptocurrencies can add value to a diversified investment portfolio, traditional portfolio theories can help better assess the opportunities and risks.

Performance and Volatility

Analysis of historical returns and price fluctuations

First, we look at the price development of these two cryptocurrencies and their price fluctuations since their introduction. The price of Bitcoin has risen from nearly zero to over USD 100,000 in the last ten years. Historical data shows that Bitcoin has experienced extremely high price fluctuations during this period. The 30-day volatility[1] ranged from 20% to 140%, making Bitcoin one of the most volatile investment instruments. However, these swings may have been compensated for by above-average returns.

FIG. 1
Price and volatility of Bitcoin since 2014

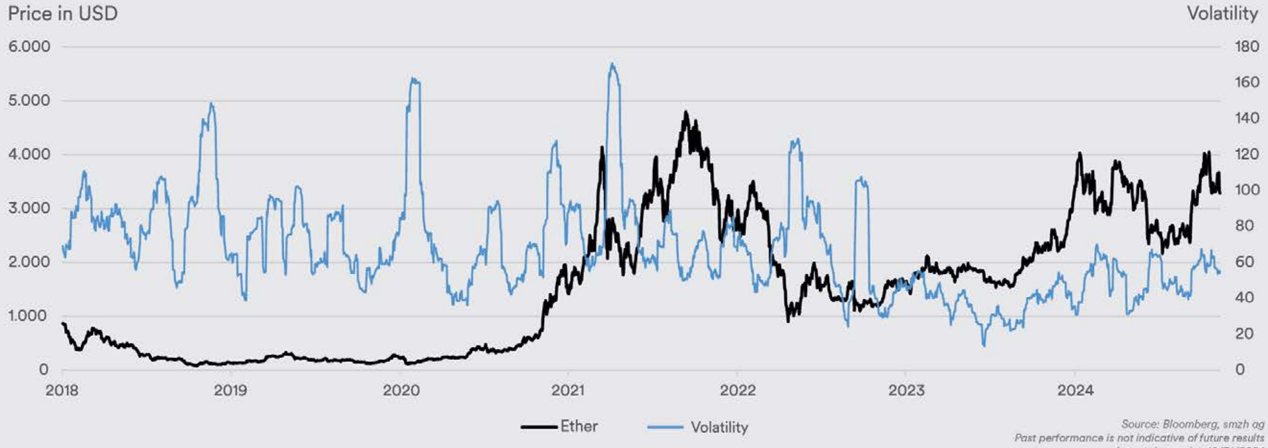


Source: Bloomberg, smzh ag
Past performance is not indicative of future results
Latest data point: 12/31/2024

[1]The 30-day volatility is a statistical measure that quantifies the magnitude of fluctuations in the daily returns of a financial instrument over this period. It reflects the degree to which these returns deviate from their average.

Similar to Bitcoin, the high price fluctuation intensity of Ether is also a key concern for investors. Ether shows similar patterns, but with even higher volatility. In particular, in 2021, its volatility reached levels of over 160%, meaning that Ether saw price fluctuations of more than 10% in one out of three trading days during that time.

FIG. 2
Price and volatility of Ether since 2018



Source: Bloomberg, smzh ag
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Latest data point: 12/31/2024

An initial assessment: balancing risks and opportunities

The impressive performance of Bitcoin and Ether in recent years is undeniable. However, with high returns come high risks. The volatility of these cryptocurrencies may discourage many investors, especially those with low risk tolerance or those relying on stable income. Moreover, institutional investors, such as pension funds, often have strict guidelines that limit investments in volatile instruments. High volatility can also lead to stress and emotional decision-making errors.

The volatility of Bitcoin and Ether is still undeniably elevated. However, an analysis of their historical path also shows that this volatility has decreased considerably over time. While it remains much higher than that of traditional asset classes like equities, bonds, or commodities, it is now almost half of what it used to be in the early years of both currencies (current values ranging between 20%-60%). This trend could be seen as an indication that Bitcoin and Ether are increasingly evolving into established asset classes.

From volatility to correlations: another perspective

Analysis of historical correlations

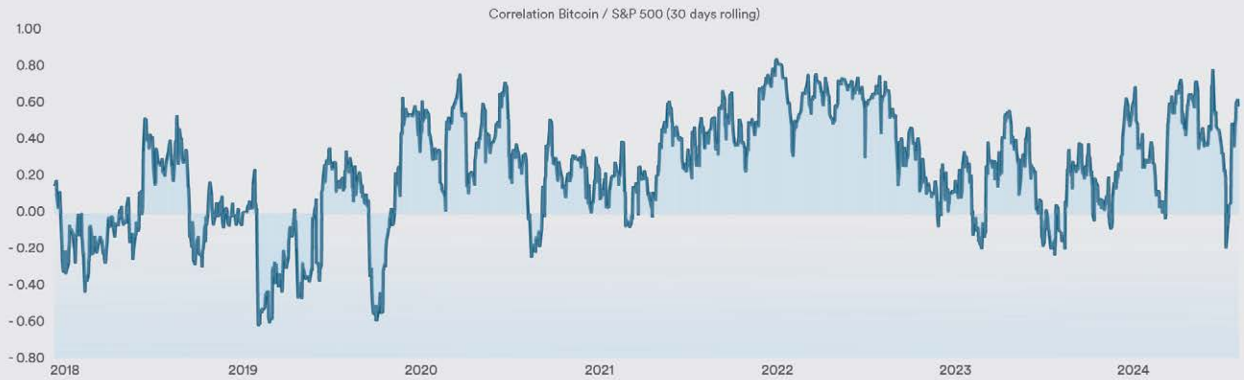
While volatility is one of the possible factors, it should not be the sole criteria for or against an investment. A commonly cited argument for adding cryptocurrencies to an investment portfolio is their low correlation with traditional asset classes. A low correlation means that, for example, the price movement of an instrument like a cryptocurrency has historically moved independently of price movements in equities, bonds, or commodities. Therefore, a low correlation can offer a potential diversification benefit, especially during market periods when these traditional asset classes lose in value simultaneously.

Correlation analysis with the S&P 500 Index

To show how the correlation of Bitcoin and Ether behaves in relation to equity markets in more detail, we take a look at the widely watched US equity market index, the S&P 500. This correlation metric can provide insight into whether cryptocurrencies and equity markets show similar or different reactions to economic events and market conditions. For investors who invest in both cryptocurrencies and equities, understanding how these asset classes interact is crucial for making informed decisions.

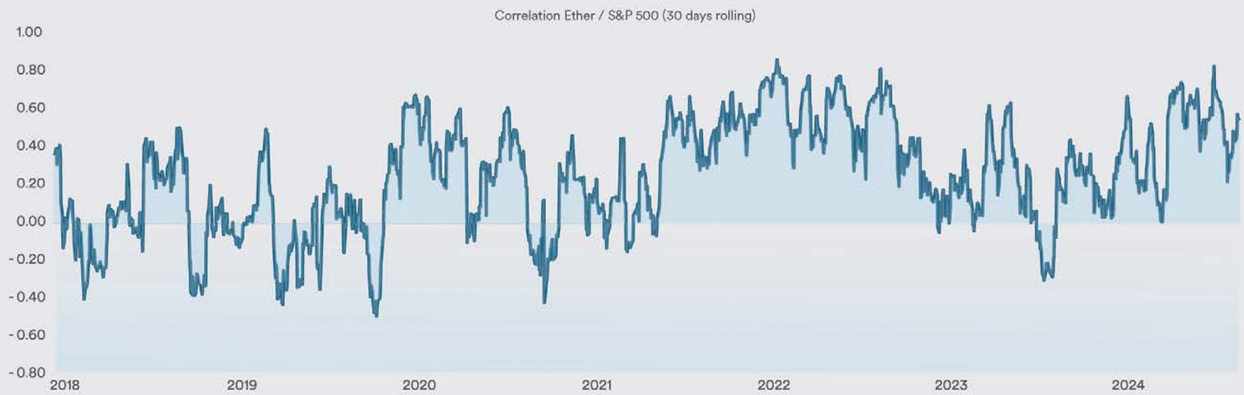
A historical data analysis shows that the relationship between the price movements of Bitcoin and Ether and the S&P 500 can fluctuate significantly over time. Both during times of crisis and periods of positive financial markets, the correlation can increase significantly, meaning that these cryptocurrencies and the US equity market tend to react more similarly and move more strongly in the same direction. This could lead to the possibility that these cryptocurrencies may not provide the expected diversification effect.

FIG. 3
Correlation trend of Bitcoin with the S&P 500 Index since 2018



Source: Bloomberg, smzh ag
Past performance is not indicative of future results
Latest data point: 12/31/2024

FIG. 4
Correlation trend of Ether with the S&P 500 Index since 2018



Source: Bloomberg, smzh ag
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Latest data point: 12/31/2024

Long-Term perspectives: average correlation coefficients compared to traditional asset classes

Since the rolling correlation of Bitcoin and Ether with the S&P 500 is subject to significant fluctuations, we expand our analysis. Unlike the rolling correlation, which analyzes the relationship between two time series over a continuously rolling 30-day time frame, we now look at the average correlation coefficients of these two cryptocurrencies over the past five years. These average values provide a long-term perspective compared to traditional asset classes, such as equities, bonds, commodities, gold, and silver.

Fig .5

Correlation coefficients of Bitcoin and Ether with traditional asset classes. Average values over the last 5 years

	Bitcoin	Ether	Gov. Bonds Global	Gov. + Corp Bonds Global	High Yield Global	Gov. + Corp Bonds CH	Equi-ties Global	Equi-ties USA	Equi-ties Swit-zerland	Com-modi-ties	Gold	Silver
Bitcoin	1,00											
Ether	0,81	1,00										
Gov. Bonds Global	0,12	0,10	1,00									
Gov. + Corp Bonds Global	0,14	0,12	0,98	1,00								
High Yield Global	0,22	0,25	0,45	0,55	1,00							
Gov. + Corp Bonds CH	0,08	0,06	0,55	0,57	0,25	1,00						
Equities Global	0,40	0,40	0,14	0,21	0,68	0,09	1,00					
Equities USA	0,39	0,38	0,04	0,11	0,54	0,09	0,95	1,00				
Equities Switzerland	0,25	0,27	0,04	0,10	0,51	0,05	0,68	0,55	1,00			
Commodities	0,22	0,22	0,10	0,13	0,32	-0,01	0,37	0,31	0,23	1,00		
Gold	0,17	0,15	0,47	0,48	0,22	0,21	0,19	0,13	0,06	0,38	1,00	
Silver	0,27	0,24	0,33	0,35	0,30	0,16	0,33	0,28	0,15	0,45	0,78	1,00

Bitcoin (Bloomberg Bitcoin Index), Ethereum (Bloomberg Ethereum Index), Gov. Bonds Global (Bloomberg Global Agg Treasuries USD), Gov. + Corp. Bonds Global (Bloomberg Global Agg USD), High Yield Global (Bloomberg Global High Yield USD) Gov. + Corp Bonds Switzerland (Swiss Bond Index AAA-BBB), Equities Global (MSCI AC World USD), Equities USA (S&P 500), Equities Switzerland (SPI), Commodities (Bloomberg Commodity Index USD), Gold (XAU/USD), Silver (SILV/USD)

Data points: 31.12.2019-31.12.2024
Past performance is not indicative of future results
Source: Bloomberg, smzh ag

The long-term perspective on the correlation of Bitcoin and Ether with traditional asset classes shows that these cryptocurrencies, on average, have low correlation. This can be beneficial for portfolio diversification.

But what about integrating these investments into modern portfolio theories? Now, we turn to a practical application: how can Bitcoin and Ether be specifically integrated into a diversified portfolio?

Bitcoin and Ether in modern portfolio theory: practical portfolio simulations

Analysis of risk/return characteristics in a diversified portfolio

Having assessed the historical price, volatility and correlations, we now turn our attention to the practical integration of Bitcoin and Ether into modern portfolio theory. The final question is whether Bitcoin and/or Ether can add value to a diversified portfolio. Harry Markowitz's modern portfolio theory emphasizes diversification as the key to risk minimization and the optimization of a portfolio's risk-return ratio. Key metrics in this context include return, volatility (risk), and the Sharpe ratio[2].

Portfolio simulation of adding Bitcoin and Ether to a traditional 60/40 portfolio

In a first attempt, we look at the impact of adding Bitcoin and Ether to a classic 60/40 portfolio, consisting of 60% Swiss equities (SPI Index) and 40% Swiss bonds (SBI Swiss Bond Index AAA-BBB), over a five-year period. The following chart shows how the risk-return profile of the portfolio changes when either 5% Bitcoin, 5% Ether, or a combination of 2.5% Bitcoin and 2.5% Ether is added. The allocation to cryptocurrencies is financed by an equal reduction in the bond allocation.

FIG. 6

Simulation of including Bitcoin and Ether in a 60/40 portfolio over five years (5% Bitcoin, 5% Ether, and 2.5% Bitcoin & 2.5% Ether)

Source: Bloomberg, smzh ag
For illustrative purposes only.
Past performance is not indicative of future results
Latest data point: 12/31/2024

Our simulation illustrates that even a small allocation of Bitcoin and/or Ether can significantly impact the dynamics of such a portfolio. Adding 5% Bitcoin or Ether leads to a significant increase in the portfolio's return, which doubles or triples. However, the portfolio's volatility also markedly increases, implying an overall higher risk profile. As a result, the portfolio's efficient frontier[3] shifts upwards (higher returns) but also to the right (higher risk).

A shift in the risk profile of the portfolio can have far-reaching consequences for investment decisions, portfolio structure, expected returns and volatility, as well as the psychological and emotional aspects of investing. It is important for investors to regularly review their risk tolerance and ensure that their investment strategy aligns with their financial goals and risk tolerance.

In order to better assess the shift in the risk profile, a closer look at the risk-adjusted return, such as through the Sharpe ratio, provides valuable insights here.

[2] The Sharpe ratio measures the return of an asset relative to its risk.

[3] The efficient frontier represents the set of all portfolios that offer the highest return for a given level of risk or the lowest risk for a given level of return.

Risk-Adjusted return analysis using the Sharpe Ratio

To ultimately and better assess the efficiency and attractiveness of the simulated portfolios, it can be useful to analyze the Sharpe Ratio. This metric indicates how much excess return (compared to the risk-free rate) is achieved per unit of risk taken (volatility). A higher Sharpe Ratio means a better risk-adjusted return.

FIG. 7
Change in Sharpe Ratio in the 60/40 portfolio over five years (5% Bitcoin, 5% Ether, and 2.5% Bitcoin & 2.5% Ether)

Source: Bloomberg, smzh ag
Past performance is not indicative of future results
Latest data point: 12/31/2024

A closer look at the change in the Sharpe Ratios shows that they significantly improve in all three simulations - from an initial value of 0.27 to values between 0.62 and 0.72. This suggests that despite higher volatility, the portfolio's risk-adjusted return can be materially enhanced. In addition, according to these simulations, the portfolio with a 5% allocation in Ether represents the best outcome, as it represents the most efficient portfolio with the highest Sharpe Ratio.

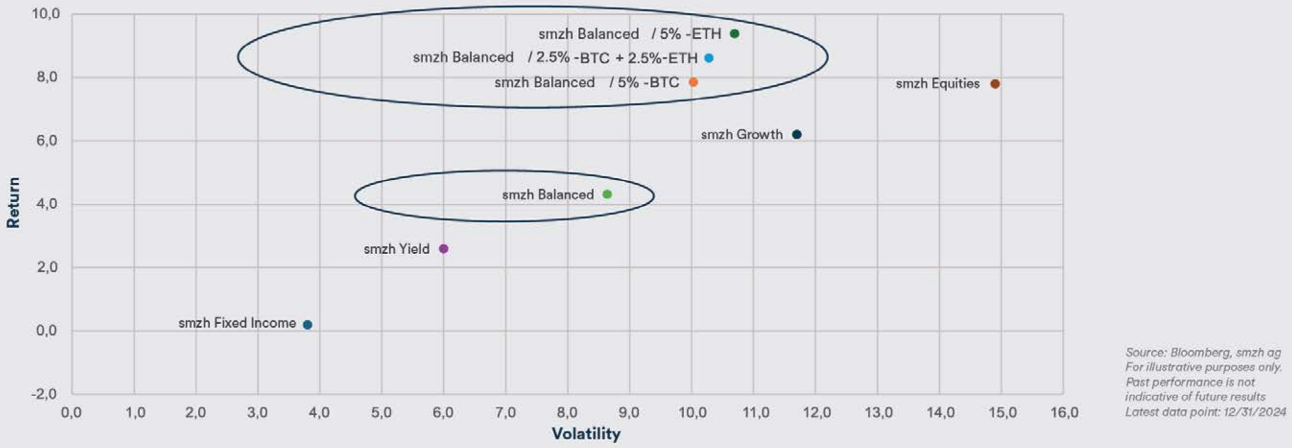
Portfolio simulation of adding Bitcoin and Ether to a diversified strategic asset allocation

Finally, we conduct the same portfolio simulations again, but with a better diversified portfolio to illustrate the benefits of an even broader diversification. In this context, we simulate again the impact of adding 5% Bitcoin, 5% Ether, or a combination of 2.5% Bitcoin and 2.5% Ether to a diversified portfolio with a balanced risk profile (smzh Balanced) over a five-year period. In the smzh risk profile, the underlying Strategic Asset Allocation (SAA) is structured with higher granularity than in simple traditional portfolios. This finer structure allows for more effective optimization and customization of portfolios to individual risk profiles and expected returns.

Our simulations show that adding 5% in Bitcoin or Ether to the smzh portfolio strategy, which already offers significant added value over the traditional strategy thanks to its optimized Strategic Asset Allocation (SAA), can also enhance the return opportunities of this portfolio. The volatility of the portfolio, however, also increases significantly, implying a higher risk profile and a shift of the portfolio's efficient frontier, shifting upwards (higher returns) but also to the right (higher risk).

FIG. 8

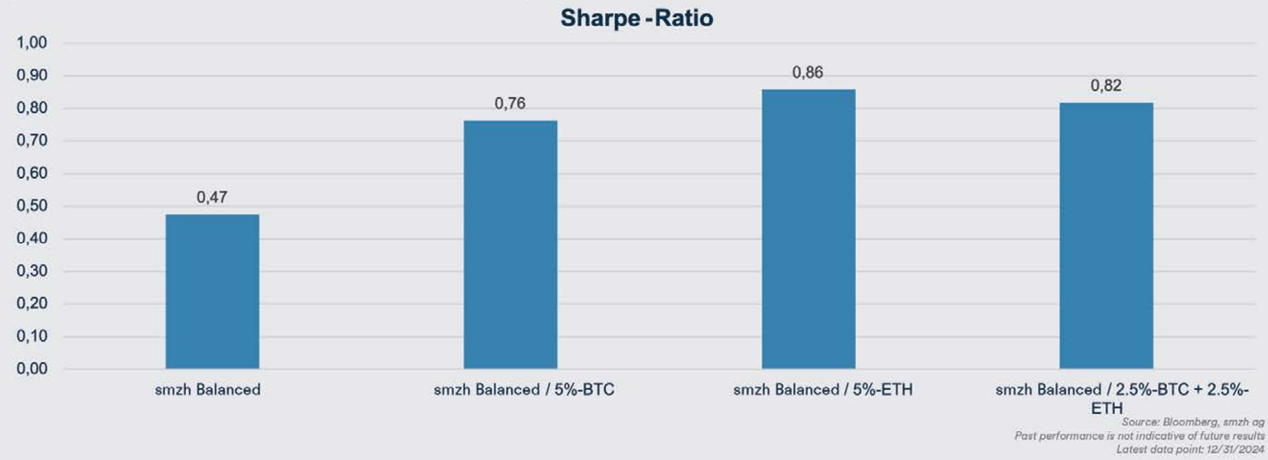
Simulation of including Bitcoin and Ether in the smzh Balanced Strategic Asset Allocation over five years (5% Bitcoin / 5% Ether / 2.5% Bitcoin & 2.5% Ether)



Now, looking at the risk-adjusted returns, similar to the simulations before, adding an allocation of 5% in Bitcoin or Ether leads to a significant improvement in the Sharpe Ratio. All three simulations show a substantial increase in this metric from an initial value of 0.47 to values between 0.76 and 0.86. These results highlight the potential of these two cryptocurrencies to significantly enhance the efficiency and performance of portfolios. As with the traditional portfolio, according to these simulations, adding 5% Ether represents the best outcome, as it results in the most efficient portfolio with the highest Sharpe Ratio.

FIG. 9

Change in Sharpe Ratio in the smzh Balanced Strategic Asset Allocation over five years (5% Bitcoin / 5% Ether / 2.5% Bitcoin & 2.5% Ether)



Conclusion
A balance between opportunities and risks

In summary, historical data suggests that investments in Bitcoin or Ether come with both opportunities and risks. While their high volatility can be daunting, they provide attractive return opportunities in a well-diversified portfolio. The results of our analysis show the relevance and potential of Bitcoin and Ether as valuable additions to diversified portfolios, regardless of the risk profile and initial allocation strategy. In particular, the significant improvement in the Sharpe Ratio indicates a more efficient risk-return profile. The results are consistent for both the traditional portfolio as well as for our more granular smzh Balanced risk profile.

However, the increased volatility should not be ignored, as it could potentially be a challenge depending on the investment horizon and risk tolerance. Still, for investors willing to accept more risk, Bitcoin and Ether can offer interesting diversification and return opportunities.

In addition to quantitative analysis, psychological factors also play an important role. Cryptocurrencies are not just investment instruments but could also be considered a cultural phenomenon that evokes strong emotions. From the perspective of behavioral finance, these extreme views could lead to distorted perceptions. Behavioral finance is an interdisciplinary field of research that examines psychological and emotional factors influencing investor behavior, leading to systematic deviations from rational decision making in financial markets. An example of this is that investors tend to become irrationally optimistic during rising prices and overreact during price declines. These behavioral patterns could further exacerbate the volatility of cryptocurrencies and complicate their integration into a portfolio.

Lastly, the answer to whether Bitcoin and Ether can add value to an investment portfolio depends on individual risk tolerance and long-term investment goals. Both cryptocurrencies represent different aspects of the evolving digital financial system and could play a complementary role in a future-oriented portfolio.

For an individual assessment of your portfolio, we are happy to assist you in a personal conversation.

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