

2026

Getting Off Zero: Evaluating Bitcoin in 2026

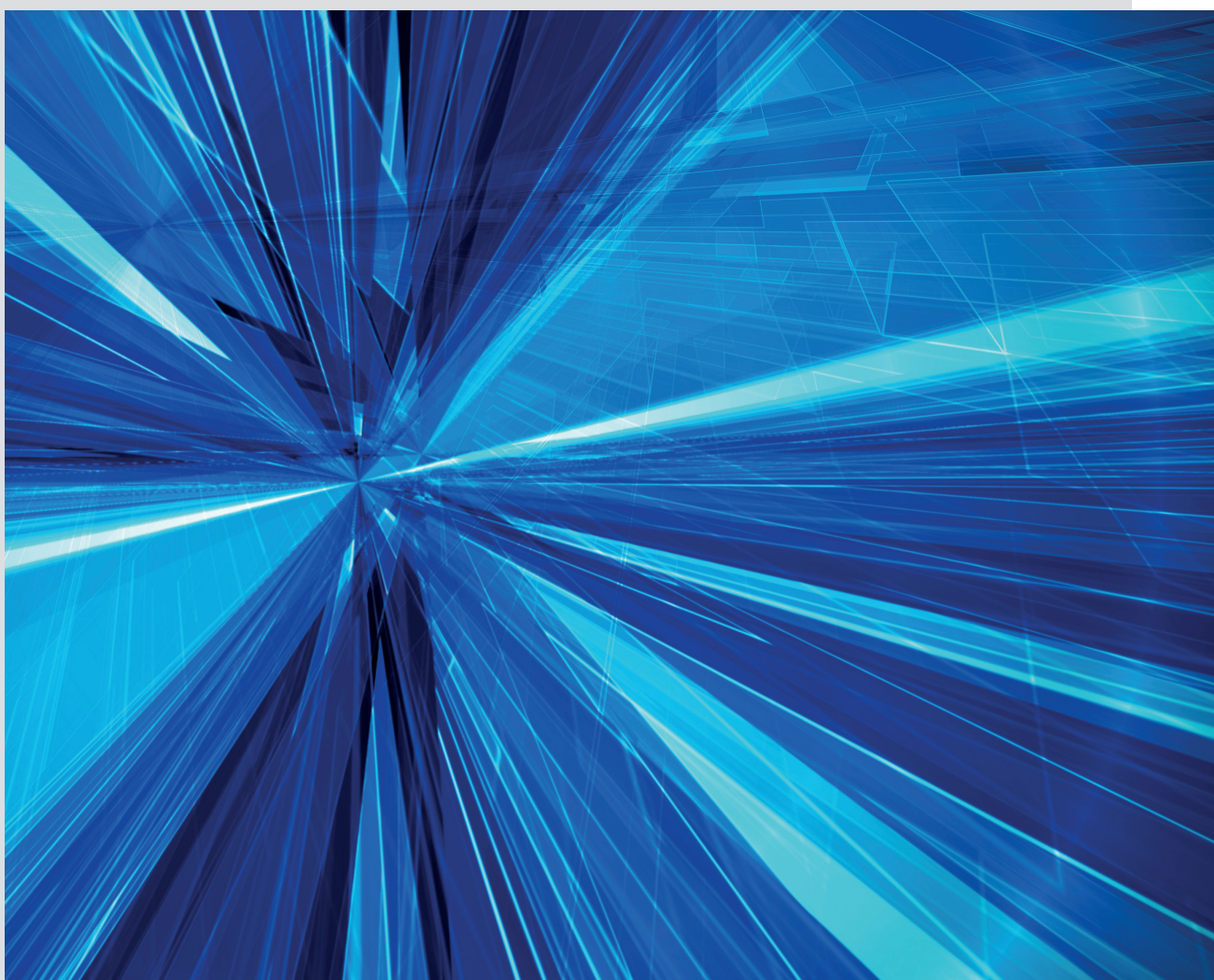
Bitcoin's role in modern investment
portfolios

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Marketing communication.



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Introduction

Bitcoin remains a relatively young asset, and other digital assets are even earlier in their development. Despite this, bitcoin has quickly matured into a major asset class, at times eclipsing silver and even approaching the ranks of the 10 largest publicly traded equities by market cap. It has also been the top performing asset in 11 out of the past 15 years.

The central question is no longer whether bitcoin deserves consideration in a portfolio, but rather: What is your current bitcoin allocation, and why?

For some, a zero allocation may still be appropriate. However, the Fidelity Digital Assets® Research team believes that institutional investors and money managers now need a well-informed rationale for maintaining a zero-weight position.

Key takeaways:

- Bitcoin has historically delivered the highest returns of any asset across multiple time horizons.
- Even with its historical volatility, bitcoin's risk-adjusted return is also the highest—prompting the need for investors to articulate a clear rationale for maintaining zero exposure.
- When evaluated purely as an investment, bitcoin exhibits several characteristics and theses that may appeal to traditional investors.
- Position sizing should reflect each investor's specific objectives and constraints, but Fidelity Digital Assets® Research finds that even modest allocations have historically influenced portfolio outcomes meaningfully.
- Funding choices and rebalancing approaches tend to have marginal impact relative to the initial allocation decision.
- Looking ahead, the traditional 60/40 portfolio may face notable structural challenges, which could prompt investors to consider alternative exposures such as bitcoin.

Bitcoin Compared to Traditional Assets

Investing is an exercise of opportunity cost. Each dollar in a portfolio needs to be allocated somewhere, which means any allocation to bitcoin will come at the cost of an alternative.

When compared against the traditional menu of investment asset classes, the historical profile of bitcoin stands out for having both the highest returns and the highest risk-adjusted returns. This underscores why investors increasingly need a clear, well-informed rationale for why the asset has been excluded or not evaluated.

10 year asset class comparison							
Asset class	Total return	CAGR	Standard deviation	Max drawdown	Sharpe ratio	Sortino ratio	Calmar ratio
Bitcoin	20,224%	70%	74%	-76%	1.04	2.24	3.04
U.S. stocks	278%	14%	16%	-25%	0.80	1.23	2.43
Global ex-U.S. stocks	123%	8%	15%	-29%	0.47	0.69	1.66
Emerging market stocks	124%	8%	16%	-35%	0.44	0.68	1.36
U.S. Investment grade bonds	21%	2%	5%	-17%	(0.02)	(0.03)	0.76
U.S. high-yield corp bonds	70%	5%	7%	-15%	0.46	0.66	3.55
LT treasury bonds (20+ years)	-5%	-1%	14%	-31%	(0.13)	(0.19)	(0.02)
TIPS	33%	3%	5%	-14%	0.16	0.22	0.84
Gold	297%	15%	14%	-18%	0.90	1.77	4.56
Commodities	62%	5%	20%	-53%	0.24	0.32	0.23
U.S. real estate	70%	5%	17%	-32%	0.27	0.38	0.39
ST treasury bills (three months)	24%	2%	1%	0%	N/A	N/A	N/A

Source: Fidelity Digital Assets Research via PortfolioVisualizer.com, accessed 20/01/26, period studied 01/01/16 - 31/12/25. Sharpe Ratio is mean monthly excess return over the risk-free rate divided by the standard deviation of excess return (risk-free rate is US three-month treasury bill rate). Sortino Ratio is similar to the Sharpe Ratio, with the same numerator as the Sharpe Ratio, but divided by the standard deviation of negative returns only. Calmar Ratio is an annualised return over past 36 months divided by max drawdown over past 36 months based on monthly returns.

A few observations from the table, "10-Year Asset Class Comparison":

- Bitcoin's return is the highest over the past 10 years, but so is its risk (as measured by standard deviation).
- This higher volatility is compensated for on a risk-adjusted basis, as reflected by the Sharpe and Sortino ratios.
- Bonds have generated very low returns—so low that even with the low standard deviations, the risk-adjusted measures of Sharpe and Sortino ratios are negative.
- The table reflects nominal returns, meaning real returns for most bonds are negative after accounting for inflation.
- Gold's return over the past decade has been so strong that its Sharpe and Sortino ratios are higher than stocks, a point that will be explored later in the report.

What Is the Correct Time Period to Assess Bitcoin?

One of the challenges in analyzing bitcoin is its relatively short price history, particularly because its earliest years include outsized appreciation during its nascent phase. Added to this difficulty is the fact bitcoin has undergone regular cycles in its price history. As a result, the time horizon chosen to study bitcoin’s price history can greatly influence analysis.

The Fidelity Digital Assets Research team aims to remain as objective as possible by selecting periods that contain full market cycles and by highlighting when earlier, exceptional returns may skew long-term metrics.

The analysis above includes some of bitcoin’s early price gains, starting in 2016, bitcoin was already a multi-billion-dollar asset class. However, bitcoin has also experienced periods of underperformance (including in 2025) so the table below presents the same set of metrics for bitcoin over the past five years:

Asset class	Total return	CAGR	Standard deviation	Max drawdown	Sharpe ratio	Sortino ratio	Calmar ratio
Bitcoin	202%	24.7%	60.4%	-73.0%	0.61	1.07	3.04

Source: Fidelity Digital Assets Research via PortfolioVisualizer.com, accessed 20/01/26, period studied: 01/01/21 - 31/12/25.

Bitcoin’s CAGR and its standard deviation have declined over the past five years. Later in this report, when examining a portfolio with bitcoin, both five- and 10-year horizons will be evaluated.



The Bitcoin Investment Thesis

As this report expands on how bitcoin can be modeled within a portfolio, it is useful to first outline the common drivers that support bitcoin's potential role as an investable asset.

Fidelity Digital Assets Research has previously explored bitcoin's broader thesis as an emerging monetary good, but this report narrows its focus almost exclusively on bitcoin strictly as an investible asset class within a traditional portfolio.

In other words, setting aside the more philosophical theses of bitcoin, what are the characteristics today that make up an investment thesis that a money manager would focus on?

Hard Cap and Absolute Scarcity

One of the foundational aspects of bitcoin's investment thesis is its hard cap and verifiable scarcity. The credible enforcement of its hard cap of 21 million bitcoin, combined with its pre-programmed supply schedule, make bitcoin the "hardest" asset or commodity currently available. This in turn underpins many of the investment theses below.

Hedge Against Monetary Inflation

When most investors think of "inflation" in the colloquial sense, they are referring to consumer price inflation. However, this report takes a first principles view of inflation, starting with monetary inflation. In other words, inflation originates with the expansion of the money supply—when money is literally inflating.

Once new money is created, this money or additional liquidity can either flow into other investible assets (such as stocks, bonds, and housing) or consumer goods. Thus, some refer to the former as "asset price inflation" while the latter can be referred to as "price inflation."

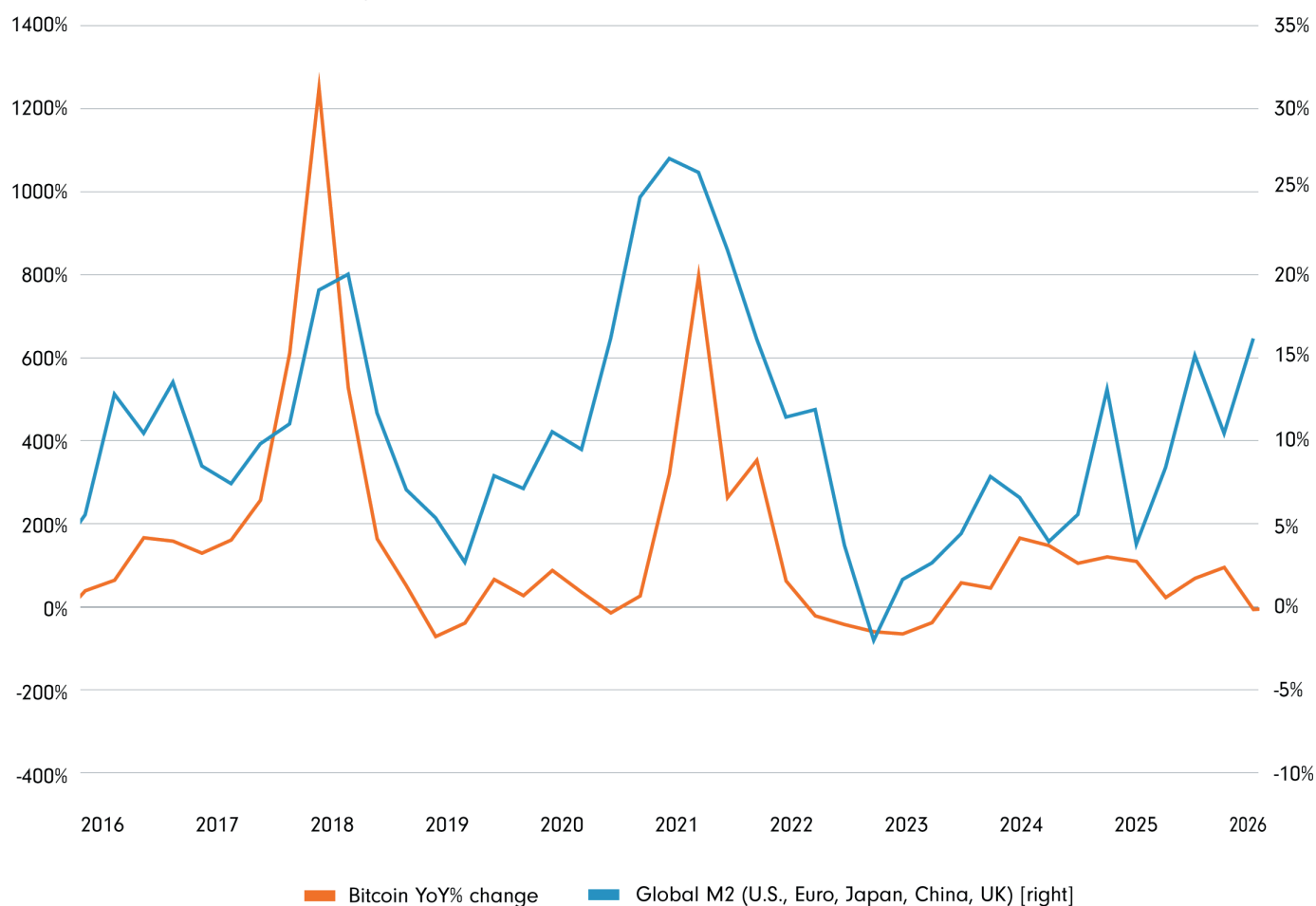
In other words, the inflation starts at the monetary level while the resulting asset or price inflation is downstream or the symptom of the money supply being inflated. In either case, investors may want to protect themselves from the debasement of the currency.

Fidelity Digital Assets Research finds that over the long term, bitcoin has acted as a hedge against monetary inflation. As illustrated in the chart "Global M2 and Bitcoin YoY Change," historically there has been a significant correlation between the increase in broad global money supplies (such as M2) and the price of bitcoin.

The r-squared of the relationship is significantly high at 0.87, meaning 87% of the change in the price of bitcoin can be explained by changes in the global M2 money supply over the past 15 years, based on data supplied by Bloomberg. Note that this is confined to correlation and not necessarily causation. However, it is the Fidelity Digital Assets Research team's perspective that there is a causal relationship from an economic theory perspective.



Global M2 and Bitcoin YoY change



Source: Fidelity Digital Assets Research via Bloomberg, accessed 05/02/26.

Hedge Against Consumer Price Inflation

Can bitcoin also serve as a hedge against consumer price inflation? Yes, but some may be framing both the question and data incorrectly.

For example, investor skepticism peaked in mid-2022, when the year-over-year change in the U.S. consumer price index hit 9%—a level not seen since the high inflation era in the '70s and '80s—yet bitcoin was down in excess of 35% year-over-year, testing new lows and even falling lower over the ensuing months.

However, the consumer price index is a backward-looking metric, measuring the change in consumer prices over the most recent months and comparing it to the year prior. Conversely, bitcoin and other financial markets are forward-looking.

Therefore, it may be more instructive to examine changes in inflation expectations and see how it compares to changes in bitcoin's price. When looking at the five-year inflation expectation metric, a forward-looking metric, there is a relatively high and positive correlation along with a moderately high r-squared value. The last bout of inflation where forward inflation expectations rose 80% year-over-year was accompanied by over a 700% increase in the price of bitcoin.

It is also helpful to remember that the ultimate test of a hedge against a rising cost of living is if the asset over time preserves purchasing power, not whether it reacts or moves with inflation changes in the moment. By this metric, bitcoin has performed exceptionally well, being able to not only preserve purchasing power but increase it, allowing holders to purchase more goods and services over a relatively moderate time frame.

What About Gold?

If the objective is to hedge against monetary inflation or currency debasement, why not simply use gold to fulfill this role in the portfolio?

Fidelity Digital Assets Research finds that bitcoin and gold share many asset and investment characteristics, including scarcity and an expanding perception as monetary goods intended to preserve value and purchasing power. Historical data supports this view, as both assets have appreciated over the past decade, potentially driven by similar forces tied to monetary expansion.

However, the two assets remain distinct enough—supported by different market participants and investor subsets—that they continue to exhibit relatively low correlation over longer time horizons (see correlation table in the next section, “Portfolio Diversifier”).

Perhaps counterintuitively, Fidelity Digital Assets Research views this as a positive. The low correlation suggests there may still be an opportunity to add a non- or low-correlated asset (bitcoin) to a portfolio that already holds gold, potentially enhancing the portfolio’s overall risk-adjusted returns.

Another way to see the benefits of diversification is to note the “trade-off” in performance of both assets over rolling 90-day periods in recent years. Gold and bitcoin tend to take turns outperforming each other, yet continue to trend higher over longer timeframes.

BTC vs. Gold 90-day over/under performance



Source: Fidelity Digital Assets Research via Bloomberg, accessed 19/01/26.

Portfolio Diversifier

One of bitcoin's most recognized characteristics, in the context of portfolio construction, is its ability to provide non-correlated returns when placed alongside traditional assets. Its supply scarcity and network effects drive medium- and long-term returns that are largely idiosyncratic relative to broad equity and credit markets. This has led to reduced correlations to other assets, positioning bitcoin as a historically complementary asset for many traditional portfolios.

The following table illustrates bitcoin's correlation with many major asset classes, demonstrating a positive but low long-term correlation.

Asset class	BTC	U.S. stocks	Global ex-U.S. stocks	Emerging market stocks	U.S. Investment grade bonds	U.S. high-yield corp bonds	LT treasury bonds (20+ years)	TIPS	Gold	Commodities	U.S. real estate
BTC	1.00	0.33	0.26	0.17	0.16	0.30	0.12	0.23	0.10	0.12	0.26
U.S. stocks	0.33	1.00	0.85	0.71	0.38	0.82	0.15	0.51	0.07	0.42	0.79
Global ex-U.S. stocks	0.26	0.85	1.00	0.82	0.47	0.80	0.18	0.53	0.20	0.45	0.47
Emerging market stocks	0.17	0.71	0.82	1.00	0.44	0.69	0.20	0.45	0.32	0.40	0.61
U.S. Investment grade bonds	0.16	0.38	0.47	0.44	1.00	0.57	0.90	0.85	0.43	(0.15)	0.57
U.S. high-yield corp bonds	0.30	0.82	0.80	0.69	0.57	1.00	0.27	0.65	0.23	0.42	0.76
LT treasury bonds (20+ years)	0.12	0.15	0.18	0.20	0.90	0.27	1.00	0.73	0.40	(0.34)	0.40
TIPS	0.23	0.51	0.53	0.45	0.85	0.65	0.73	1.00	0.45	0.04	0.65
Gold	0.10	0.07	0.20	0.32	0.43	0.23	0.40	0.45	1.00	(0.06)	0.18
Commodities	0.12	0.42	0.45	0.40	(0.15)	0.42	(0.34)	0.04	(0.06)	1.00	0.31
U.S. real estate	0.26	0.79	0.74	0.61	0.57	0.76	0.40	0.65	0.65	0.31	1.00

Source: Fidelity Digital Assets Research via PortfolioVisualizer.com, accessed 20/01/26, period studied: 01/01/16 - 31/12/25 (based on monthly returns).

Portfolio allocators are constantly seeking assets with positive expected returns and low correlations to their existing holdings. Historically, bitcoin has met these criteria, exhibiting no meaningful correlation to major asset classes while delivering long-term returns.

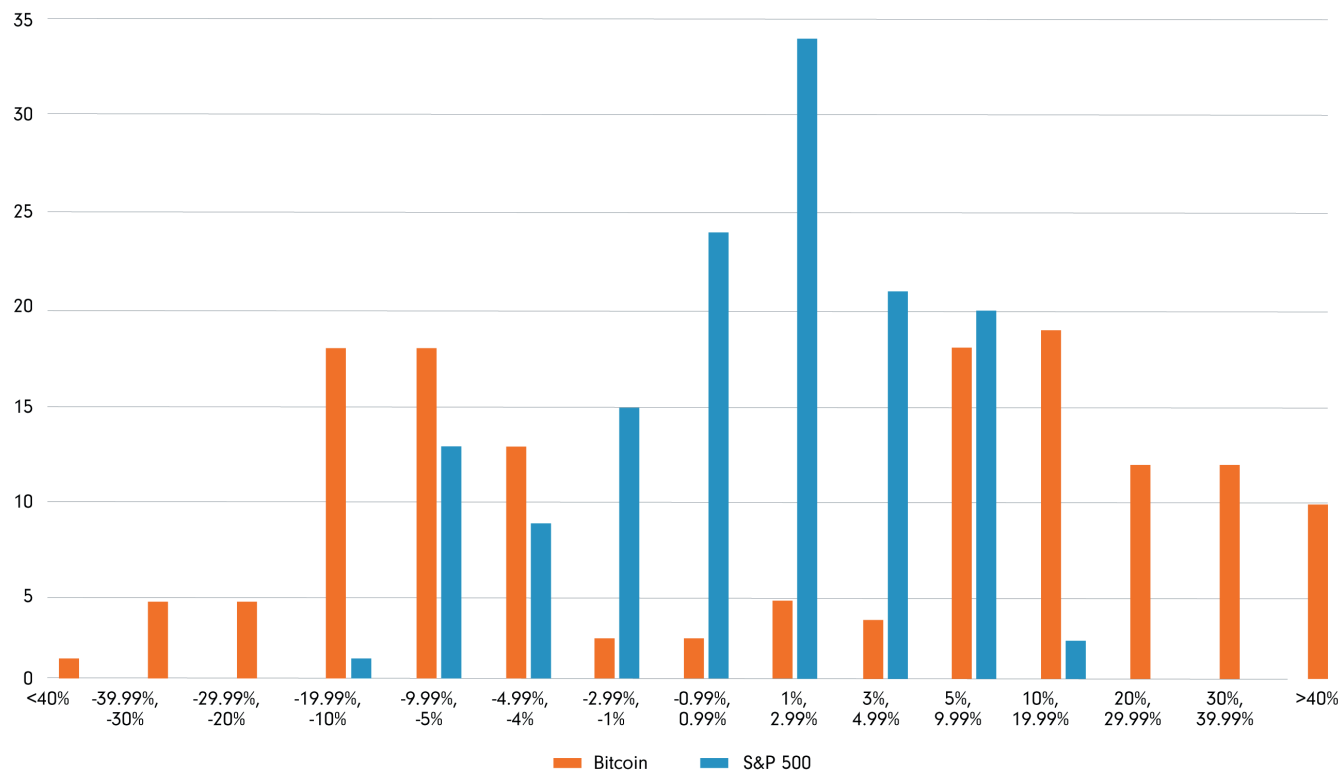
Those who oppose bitcoin as a legitimate asset often point to its inability to provide diversification during periods of large equity drawdowns. It is true that many large, risk-off events experienced throughout bitcoin's existence have produced short-term volatility in bitcoin.

However, Fidelity Digital Assets Research would recommend viewing this dynamic in context. Bitcoin's 24/7 market structure provides continuous liquidity during periods of stress, which often makes it one of the first assets to sell off. Ultimately, understanding these characteristics is essential for assessing how bitcoin may interact with traditional assets and contribute to overall portfolio construction.

Venture-Like Investment

The current opportunity set presented by bitcoin features highly skewed and asymmetric return potential, in some respects similar to what investors might expect from a venture capital investment. Alternative investments with asymmetric payoff profiles may offer compelling investment opportunities, as even small position sizes may deliver meaningful portfolio benefits.

Bitcoin vs. S&P 500: Frequency of monthly returns by interval



Source: Fidelity Digital Assets Research via Bloomberg, accessed 02/02/26, period studied: 31/12/15 - 31/12/25.

Good Volatility vs. Bad Volatility

The data above suggests—if history is any guide—bitcoin may offer investors an asset featuring a very unique characteristic: more “good volatility” than “bad volatility.”

While bitcoin has exhibited “fat-tailed” monthly returns that are either largely distributed to the far right (positive) or left (negative), the historical record shows more occurrences of positive months than negative ones.

This dynamic is part of what has made bitcoin so unique. Although the asset is highly volatile, historically there has been more “good volatility” where bitcoin is going up in a sharper manner than when it is going down.

Such behavior challenges traditional finance measures of risk, where risk is typically defined by volatility—or more precisely, standard deviation. Under that framework, volatility is assumed to be uniformly negative because both upside and downside deviations are treated as “risk.”

This has long been the conventional way to assess risk because, for most traditional assets, extreme volatility tends to occur when values are declining rapidly. Stocks, for example, have historically exhibited this behavior, producing the old Wall Street adage: “Stocks take the escalator up but the elevator down.”

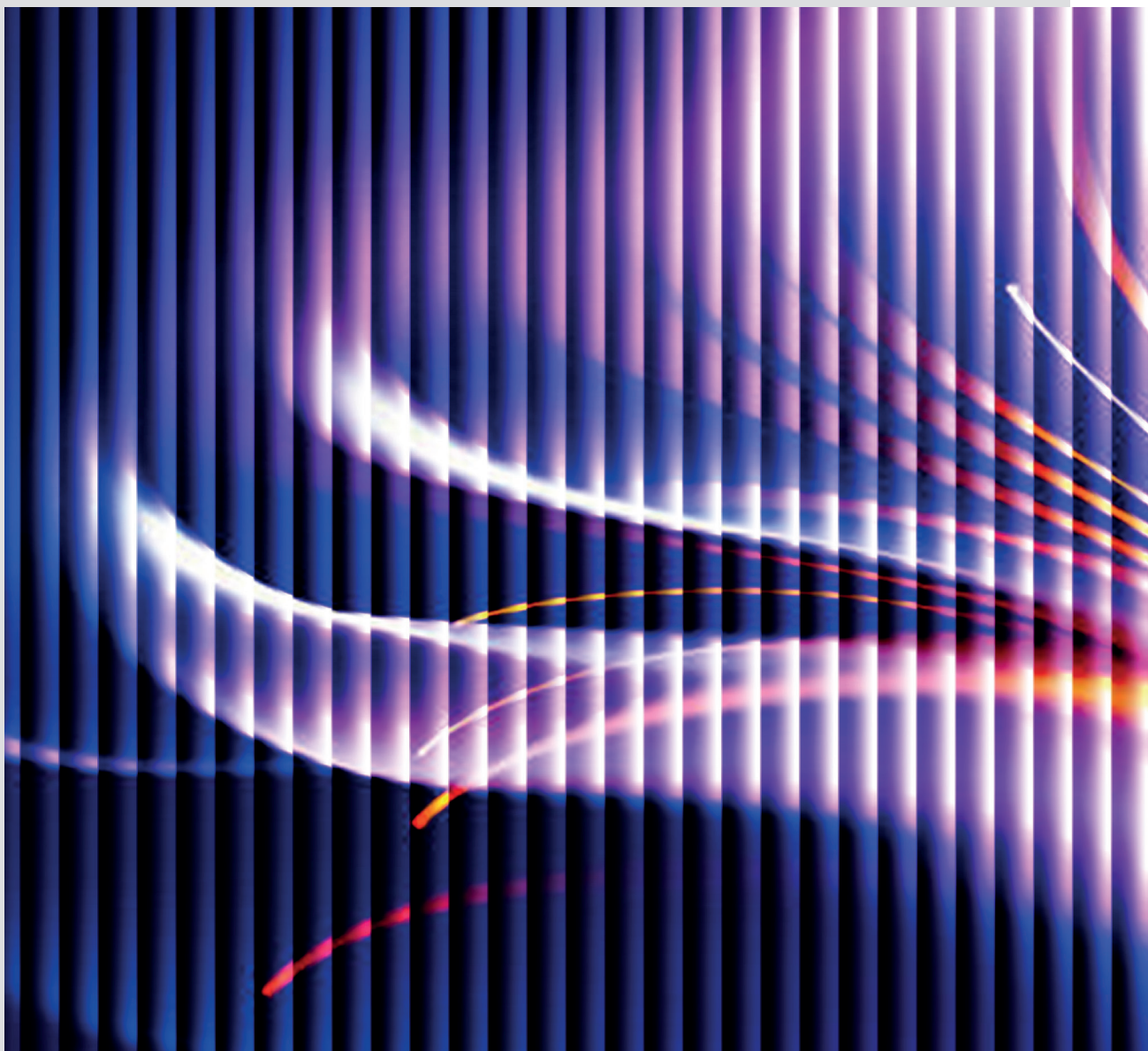
However, if an asset such as bitcoin can exhibit more volatility on the way up than down, investors may have the opportunity to “harvest” that volatility and benefit from it. One of the simplest ways to do so is through regular rebalancing, which is examined in greater detail later in this report.

What About Alternatives?

Some investors may note that several of bitcoin's investment attributes could be found in other alternative investments or "alts."

Fidelity Digital Assets Research is not suggesting that the presence of bitcoin diminishes the role of alts in a portfolio. In fact, in several cases, alternatives can provide additional sources of non-correlated returns. However, many of the advantages previously seen in alts are shared by bitcoin, while alts often introduce some tradeoffs or compromises not present with bitcoin.

Most alternatives are illiquid, lack frequent or transparent trading, and may not have readily observable market prices. Many also involve long lock-up periods, are not homogenous (for example, vintages of wine, artwork, or antiques/collectibles), and can be difficult to authenticate, store, or transport. Bitcoin, by contrast, offers high liquidity, real-time mark-to-market pricing, and 24/7 trading. It is straightforward to verify, store, and transfer, making it well-suited for use as collateral.



Position sizing and portfolio implications

Once the decision has been made to allocate a portion of an investment portfolio to bitcoin, the question then becomes, “How much?” or “What position size is appropriate?” While this report cannot provide specific recommendations—given that all investment portfolios, constraints, goals, objectives, and mandates will vary—it can offer several frameworks to help begin the assessment.

A Little Can Go a Long Way

One of the simplest ways to explore position sizing is to evaluate the historical performance of portfolios with varying levels of bitcoin exposure.

Starting with the classic 60/40 portfolio comprised of 60% of the total US stock market and 40% of the total aggregate US bond market, one can see the hypothetical effect bitcoin would have had on the portfolio at varying levels:

60/40 starting portfolio with various amounts of BTC added: 10-year period						
Allocation to Bitcoin	0%	1%	3%	5%	7%	10%
Annual return	9.44%	11.25%	14.56%	17.55%	20.30%	20.30%
Annual volatility	10.26%	10.65%	12.04%	13.80%	15.65%	15.65%
Sharpe Ratio	0.72	0.85	1.01	1.09	1.12	1.15
Sortino Ratio	1.09	1.34	1.76	2.09	2.34	2.62
Maximum drawdown	-20.64%	-21.02%	-21.79%	-23.21%	-24.64%	-24.64%

Source: Fidelity Digital Assets Research via PortfolioVisualizer.com, period studied: 01/01/16 - 31/12/25. Stocks are represented using the iShares Core S&P Total US Stock Market ETF (ITOT). Bonds are represented using the iShares Core US Aggregate Bond Index ETF (AGG). Bitcoin is represented using the Bitcoin Spot Market Price. Portfolios rebalanced annually to target allocations and dividends are reinvested.

The above assumes the bitcoin allocation is funding equally from both the stock and bond portions of the portfolio.

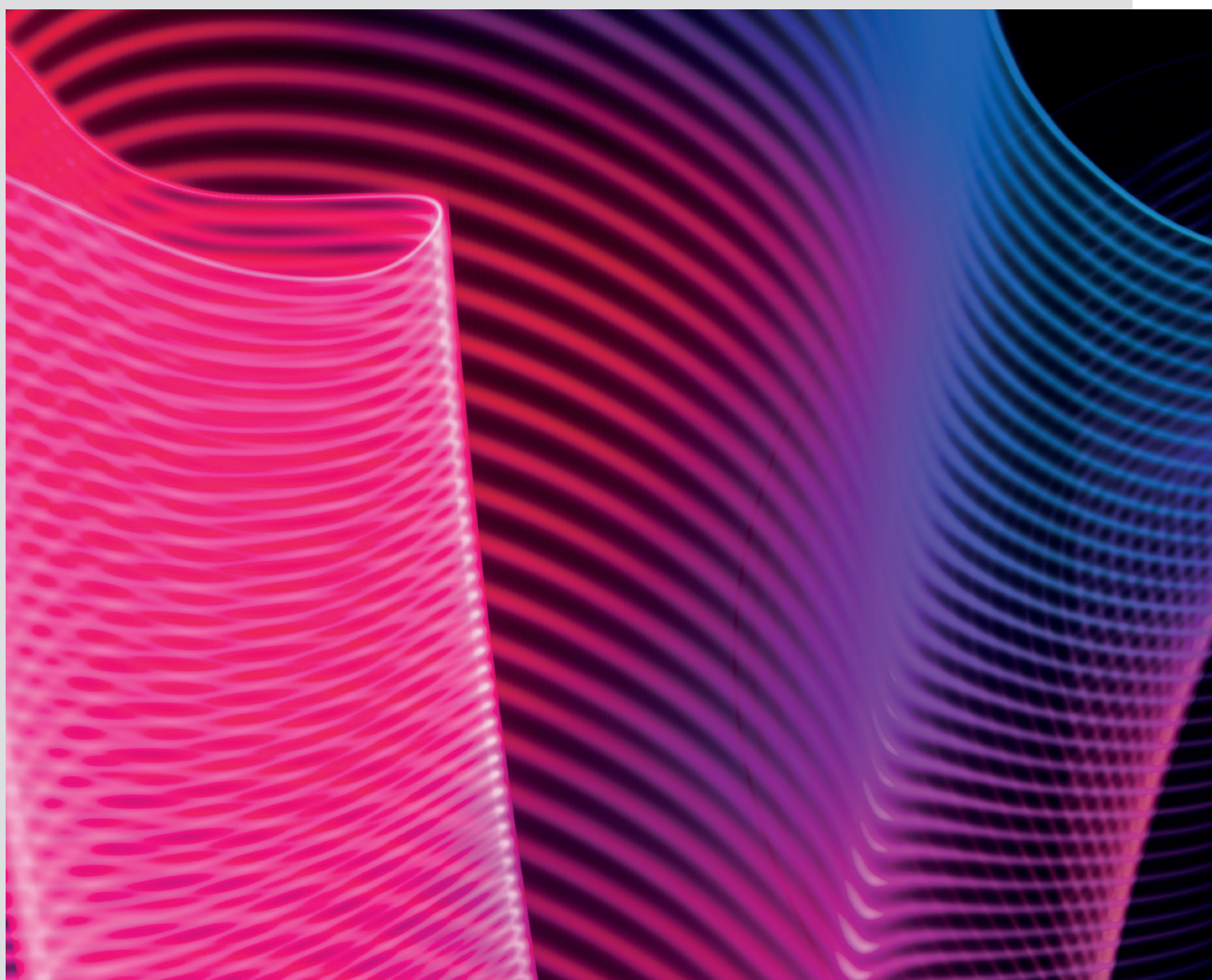
Some observations on the table, “60/40 Starting Portfolio with Various Amounts of BTC Added: 10-Yr Period”:

- Historically, adding bitcoin to a 60/40 portfolio would have increased annual and total returns.
- Portfolio volatility (as measured by annual standard deviation) would have also increased, but the risk-adjusted measures of Sharpe and Sortino ratios indicate that the risk was compensated for.
- The most significant improvement in Sharpe and Sortino ratios occurred when moving from a 1% to a 3% allocation, a point explored more analytically later in the report.
- Somewhat unexpectedly, the maximum drawdown does not rise as much as might be assumed, despite bitcoin experiencing multiple 40–70% drawdowns during the period. This effect is attributable to bitcoin’s low correlation with traditional assets—enhancing diversification—as well as the discipline of annual rebalancing, which helps keep bitcoin’s portfolio weight and associated risk contained.

Looking at the past five years only, returns are indeed lower as bitcoin's performance has not been as strong. However, the broader pattern remains intact. Portfolios still experience higher returns alongside improvements in both Sharpe and Sortino ratios:

60/40 starting portfolio with various amounts of BTC added: 5-year period						
Allocation to Bitcoin	0%	1%	3%	5%	7%	10%
Annual return	7.86%	8.24%	9.00%	9.74%	10.47%	11.52%
Annual volatility	11.06%	11.28%	11.85%	12.54%	13.34%	14.68%
Sharpe Ratio	0.46	0.48	0.52	0.58	0.58	0.60
Sortino Ratio	0.66	0.71	0.79	0.91	0.91	0.98
Maximum drawdown	-20.64%	-21.02%	-21.79%	-23.21%	-24.64%	-24.64%

Source: Fidelity Digital Assets Research via PortfolioVisualizer.com, period studied: 01/01/21 - 31/12/25. Stocks are represented using the SPDR S&P 500 Index ETF (SPY). Bonds are represented using the iShares Core US Aggregate Bond Index ETF (AGG). Bitcoin is represented using the Bitcoin Spot Market Price. Portfolios rebalanced annually to target allocations and dividends are reinvested. The above assumes the bitcoin allocation is funding equally from both the stock and bond portions of the portfolio.



Where Does the Bitcoin Position Come From?

Once a decision to allocate is made and a position size is selected, the next consideration is how to fund the new bitcoin allocation—for example, whether it should come from stocks or bonds within the traditional 60/40 portfolio.

Investors have historically taken funds from either side of the portfolio, though funding tends to more commonly come from equities. Many investment managers categorize bitcoin's high volatility as "risky," and therefore source it from the "risk" asset bucket.

Increasingly, however, some allocators are viewing portions of the bond allocation as more of a liability or drag, and are expressing interest in replacing part of that exposure with bitcoin. This perspective is explored in more detail later.

Empirically, higher returns were incurred when the bitcoin allocation was funded from the bond portion of the portfolio. Given the strong performance of stocks as of late and the comparatively weaker performance of bonds, this outcome is not particularly surprising.

What may be more surprising is how close the results are across all three funding choices in the hypothetical example below. Note that the 10% allocation was chosen not as a recommendation, but to magnify the differences across funding sources. Even so, the resulting return and volatility figures are still notably similar—nearly identical in many respects.

Therefore, the takeaway here is that the biggest difference in results came from the decision to get off zero—the choice of which bucket to fund the allocation from resulted in very marginal differences.

Comparing BTC allocation funding sources (60/40 starting portfolio: 10-year period)				
Allocation to Bitcoin	0%	10% (from equal)	10% (from stocks)	10% (from bonds)
Annual return	9.44%	24.09%	23.51%	24.67%
Annual volatility	10.26%	18.41%	18.05%	18.79%
Sharpe Ratio	0.72	1.15	1.14	1.16
Sortino Ratio	1.09	2.62	2.67	2.57
Maximum drawdown	-20.64%	-26.72%	-26.33%	-27.12%

Source: Fidelity Digital Assets Research via PortfolioVisualizer.com, period studied: 01/01/16 - 31/12/25. Stocks are represented using the iShares Core S&P Total US Stock Market ETF (ITOT). bonds are represented using the iShares Core US Aggregate Bond Index ETF (AGG). Bitcoin is represented using the Bitcoin Spot Market Price.

How should the portfolio be rebalanced?

Finally, once the position is funded and established, the next question is how to maintain that exposure. More specifically, what rebalancing method or time frame should be used?

As with the funding analysis above, this section examines a hypothetical portfolio with 10% allocated to bitcoin, funded equally from the stock and bond portion, but rebalanced using different mechanisms.

10% BTC position, 55% stocks, 35% bonds (10-year period)					
Rebalancing period	Quarterly	Semi	Annually	5% bands	10% bands
Annual return	19.11%	19.28%	24.09%	17.70%	17.35%
Annual volatility	14.50%	15.39%	18.41%	13.92%	14.52%
Sharpe Ratio	1.13	1.12	1.15	1.09	1.03
Sortino Ratio	2.10	2.13	2.62	1.94	1.83
Maximum drawdown	-25.70%	-26.39%	-26.72%	-24.44%	-27.53%

Source: Fidelity Digital Assets Research via PortfolioVisualizer.com, period studied: 01/01/16 - 31/12/25. Stocks are represented using the iShares Core S&P Total US Stock Market ETF (ITOT). bonds are represented using the iShares Core US Aggregate Bond Index ETF (AGG). Bitcoin is represented using the Bitcoin Spot Market Price. Dividends are reinvested.

Some observations from the table, “10% BTC Position, 55% Stocks, 35% Bonds (10-Yr Period)”:

- The longer the time between rebalancing, the longer bitcoin had to “run” and compound some of its very high returns.
- This resulted in much higher returns (for example annual versus quarterly), but with more risk.
- However, similar to other analysis above, the additional risk was compensated for, and the maximum drawdown did not increase as much as might be expected.
- Historically, rebalancing bands produced sub-standard results, reflected in the lowest Sharpe and Sortino ratio results. For example, the 10% bands produced the same annual volatility as quarterly rebalancing but delivered annual returns a full 1.76 percentage points lower.
- Intuitively, this is the converse of “letting bitcoin run” as it is instead kept on a “tight leash” that constrains the asymmetric upside while still capturing much of the volatility.

As with the position size and funding exercise, the overarching theme remains consistent:

implementing any kind of rebalancing mechanism matters far more than the specific mechanism chosen.

Alternative position sizing models

The prior analysis relies on simple historical returns and small incremental allocations to bitcoin. However, the assessment can take this a step further in two ways: by identifying the maximum Sharpe Ratio (efficient frontier) with bitcoin as an option, and by using forward-looking capital market expectations.

Note on Capital Market Expectations

Historically bitcoin has produced high returns—over 70% CAGR during the past decade. However, it could be prudent to assume that such high returns may not persist as the asset class matures, grows, and becomes even more widely adopted. The data already suggests this trend, with bitcoin’s CAGR declining over the long term.

At the same time, volatility has also moderated. Any robust forward-looking framework for return expectations should therefore incorporate assumptions for lower volatility as well. Both considerations are important as the analysis turns toward alternative position sizing models.

Finding the Maximum Sharpe Ratio

Using a mean variance optimization framework, hypothetical capital market expectations for stocks, bonds, and bitcoin are incorporated to identify the portfolio with the highest Sharpe Ratio.

Assumptions:

Stocks: Expected returns are set equal to the past 10 years at 14.5% per year, with volatility of 15.5% (also matching the prior decade). While this return assumption may be optimistic, it is used here for consistency (see the Looking Ahead section below).

Bonds: Expected returns are assumed to be 2% with volatility at 5%, again mirroring the past 10 years.

Bitcoin: Expected return assumptions are set at 25%, reflecting a substantial decline from its historical CAGR, while still maintaining relatively high expected volatility of 50%.

Results:

Portfolio optimisation with BTC and forward-looking capital market expectations		
Portfolio	Starting portfolio	Maximum Sharpe Ratio
Portfolio composition (stocks/bonds/BTC)	60% / 40% / 0%	90.70% / 0% / 9.40%
Expected portfolio return	9.50%	15.47%
Annual volatility (standard deviation)	10.24%	16.18%
Sharpe Ratio	0.58	0.73

Fidelity Digital Assets Research via PortfolioVisualizer.com, period studied: 01/01/16 - 31/12/25. Stocks are represented using the iShares Core S&P Total US Stock Market ETF (ITOT). bonds are represented using the iShares Core US Aggregate Bond Index ETF (AGG). Bitcoin is represented using the Bitcoin Spot Market Price.

Additional analysis could be explored using this framework. However, the key takeaway is that even under conservative assumptions for bitcoin and optimistic assumptions for equities, the portfolio with the highest Sharpe Ratio includes 9.4% bitcoin and 0% bonds.

What does the Kelly Criterion say for position sizing?

The Kelly Criterion is a mathematical formula designed to answer the question: What is the ideal amount of capital to risk in a profitable investment? In other words, even when an investment offers favorable odds or an asymmetric payoff profile, there remains the practical question of how much total capital should be allocated to maximize long-term wealth without the risk of losing everything.

Although the Kelly Criterion has been applied in finance and investing—and some have already applied it to bitcoin—one issue that arises during application is the formula is usually applied to a series of events or investments¹. Therefore, to apply this to bitcoin, one would have to think about it in a series of returns, such as by calendar year.

Using calendar year returns for the past 10 years of bitcoin as inputs, the results are as follows: Seven out of 10 years are positive (or 70% “win rate”), while three were negative (30% “lose rate”). The average positive year returned 288%, and the average negative year produced a 50% drawdown. Inputting these figures into the Kelly formula results in a position size of 65%.

Note: This is not an investment recommendation. Portfolio managers are rarely focused exclusively on maximizing the long-term geometric growth rate. Instead, they operate within numerous constraints such as risk, volatility, and maximum position sizes.

The insight of the Kelly Criterion, however, remains: When an investment opportunity exhibits a positive expected return and a highly asymmetric payoff—meaning the potential upside significantly outweighs the potential downside—the most “efficient” position size may be larger than what investors intuitively think.

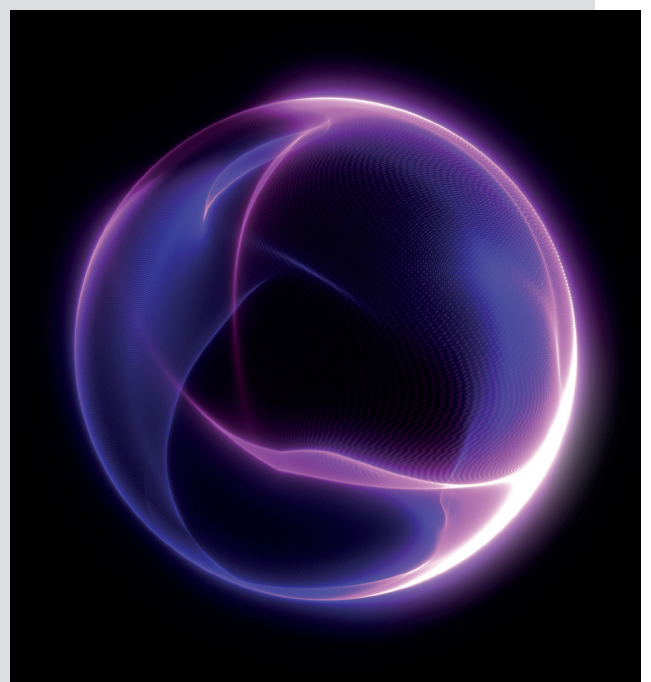
Although this is purely a mathematical framework to consider, psychology is another variable that should be noted in terms of investors’ comfort with risk and drawdowns. This leads many

investors, in practice, to apply the Kelly formula but reduce the computed position by a factor, such as dividing Kelly in half, or even taking only 25% of the position. Doing so could reduce volatility while still maintaining exposure to significant upside.

Another important caveat is the sensitivity of the Kelly Criterion to its inputs. Bitcoin’s historical figures have been exceptionally favorable, but future results may differ materially, and the inputs used today to estimate an appropriate position size may not reflect actual future outcomes.

To address this, investors can apply the Kelly formula using their own forward-looking assumptions (that may be more realistic or conservative) while still preserving the robustness of using an analytical framework.

For example, keeping the 70% “win rate” constant but assuming bitcoin returns 25% on average for positive years and still has a 50% drawdown on negative years yields a Kelly position size of 10% (using the original and more conservative formula as noted in footnote 1).



Looking ahead: Can the 60/40 still deliver?

Investors may reasonably ask whether bitcoin should be considered at all given the exceptional performance of long-only, traditional assets over the past decade. Portfolios resembling a typical U.S. 60/40 allocation have delivered returns well above historical averages while exhibiting relatively low levels of volatility.

This favorable backdrop has been driven by a series of strong, long running tailwinds: interest rates have trended downward for roughly four decades, and equity valuations have expanded to historically elevated levels. Additionally, policymakers have coordinated globally to maintain liquidity across sovereign and private credit markets. Together, these forces have created an environment highly conducive to strong asset performance.

Many of the key drivers of the returns experienced this past decade are likely unsustainable on a perpetual basis. Given the reality that unsustainable trends cannot persist forever, alternative assets with differing underlying drivers and value propositions may begin to gain increasing credibility in this environment.

Fixed Income

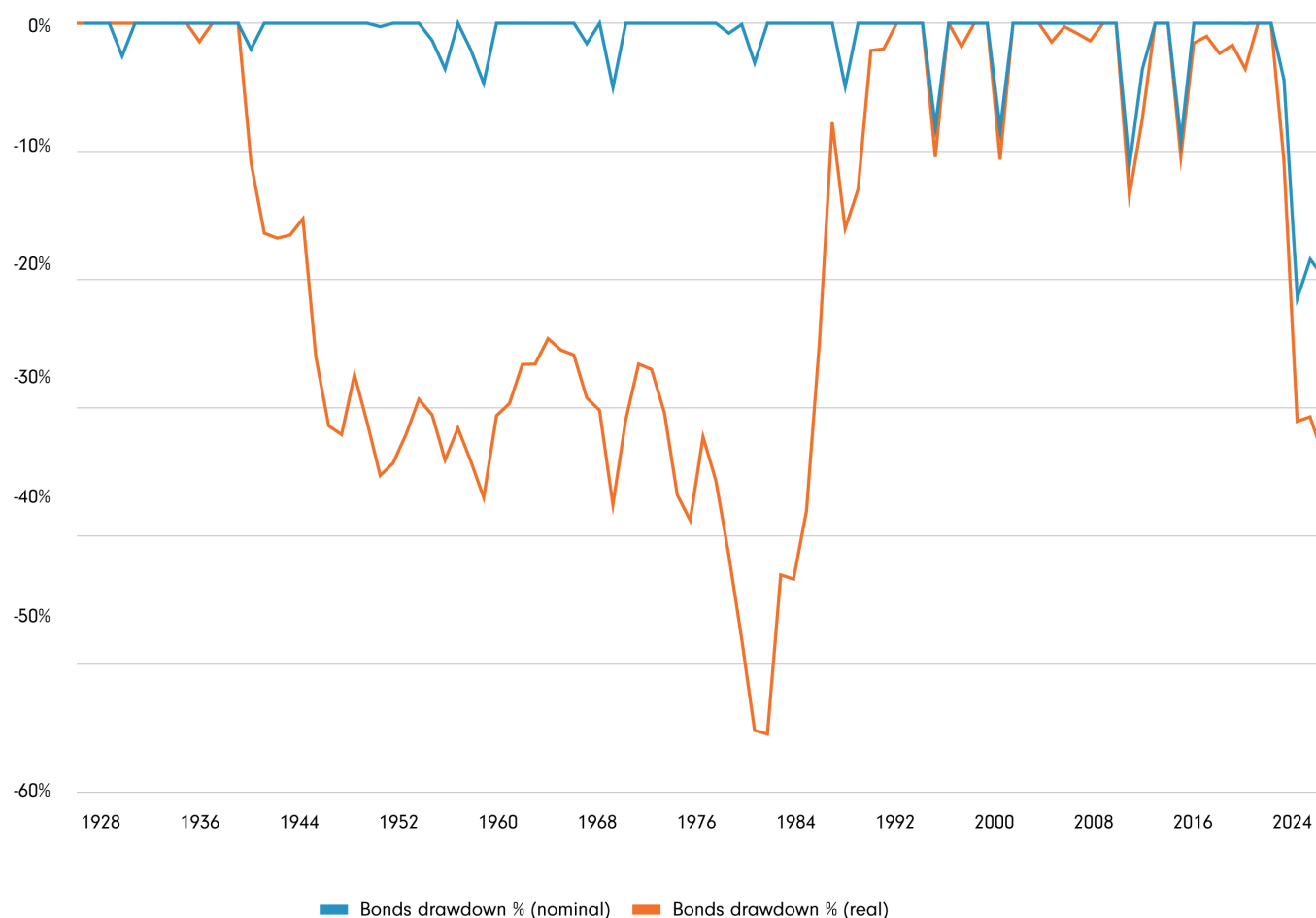
Bonds continue to be a staple in almost every portfolio, traditionally providing a “ballast” or stabilizer due to their historically low volatility and low correlation to other assets.

Both assumptions may be facing increasing pressure in the years ahead, however. For example, the UK bond market experienced losses of approximately 30% as long-term yields surged within days, and the aggregate global investment-grade bond market lost at least 20% in less than a year². Episodes of rising correlations between stocks and bonds have also raised questions about the advantage of bonds in a portfolio³.



A more potentially concerning consideration with bonds in the future is low rates that may provide negative real returns. While many see nominal returns for bonds that show shallow and short drawdowns, if viewed on a real basis (after inflation), bonds have in the past undergone very long drawdown periods.

10-year treasury bond drawdowns: Nominal and real



Source: Fidelity Digital Assets Research via Aswath Damodaran, accessed 05/02/26.

Finally, debt levels have metastasized globally, with the largest increase occurring on sovereign balance sheets. Deficit spending now appears to be a permanent structure. In the U.S., public debt-to-GDP stands near 120% as of Q3 2025, a level matched in U.S. history only during the post-World War II period⁴. Many other countries are experiencing a similar expansion in sovereign debt relative to the underlying economy that finances it⁵.

A 2011 IMF paper titled “The Liquidation of Government Debt” offers a potential framework for how policymakers may attempt to address today’s current debt-to-GDP levels. As the paper notes, “financial repression may be part of the toolkit deployed to cope with the most recent surge in public debt in advanced economies.”⁶

“Financial repression” is summarized in the paper as “a tax on bondholders and savers via negative or below market real interest rates,” highlighting a key risk to bond holders. The paper also notes that “financial repression is most successful in liquidating debt when accompanied by inflation.”

As the IMF paper suggests, financial repression may be one of the most probable mechanisms for the long-term normalization of the system. The suppressed return of financial assets, particularly fixed income, effectively functions as a tool of taxation for the state. Should this environment emerge, deeply negative real interest rates could create an investment landscape markedly different from what investors have experienced over the past four decades.

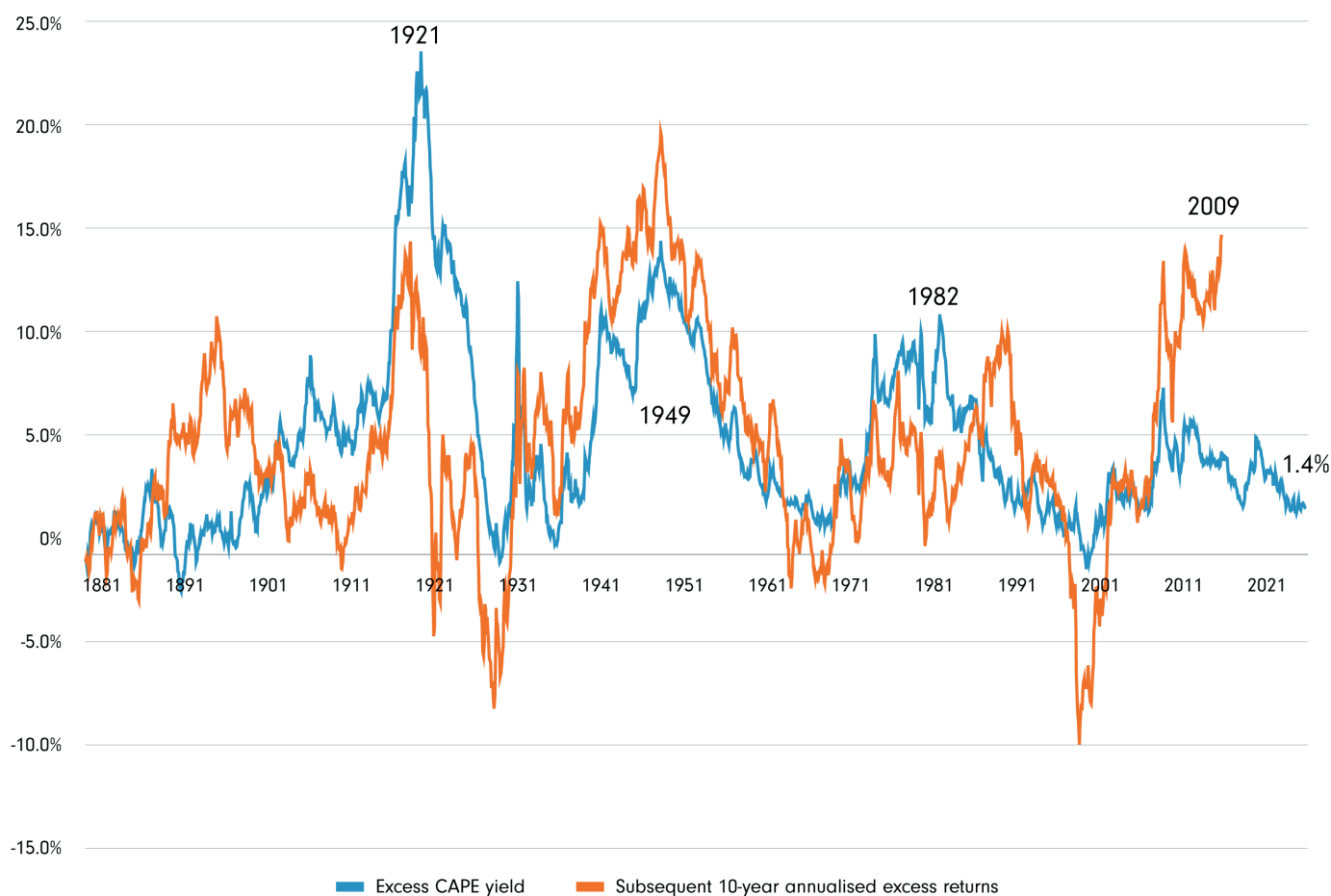
Equities

Equities have delivered exceptionally high returns over the past decade relative to long-term history. However, valuation metrics indicate that equities are currently trading at elevated premiums, which—if they revert toward historical norms—would imply below-average returns in the decades ahead.

The chart below uses the well-known data set from Professor Robert Shiller, plotting the cyclically adjusted price-to-earnings (CAPE) ratio of the S&P 500 against the subsequent 10-year returns. Historically, this relationship has been robust: The level of valuation investors pay today has been a strong determinant of the returns realized over the following decade.

What is notable is the wide divergence recently, prompting investors to question if stocks are rich today or whether underlying market dynamics have fundamentally changed.

Excess CAPE yield (ECY) and subsequent 10-year annualised excess returns



Source: Fidelity Digital Assets Research via Professor Robert Shiller, Yale University, accessed 2026.

Fidelity Digital Assets Research acknowledges that this time may be different—that today's elevated valuations and multiples could be justified. Factors such as the rise of capital-light businesses, durable competitive moats supported by network effects and economies of scale, and potential gains in profitability from advancements in AI may allow margins to remain elevated.

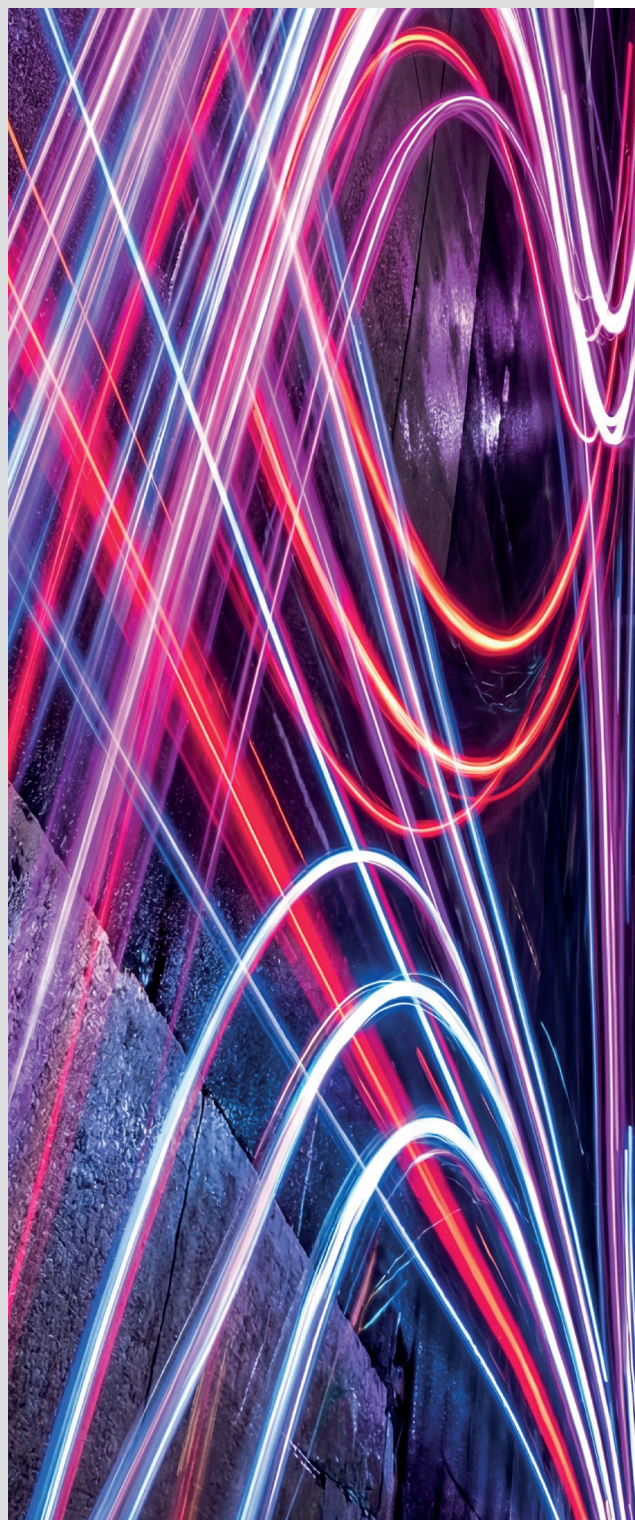
However, even if these dynamics persist, current valuations may already be discounting them. Markets that are effectively "priced for perfection" leave little room for disappointment should future fundamentals fail to meet today's expectations.

Conclusion: Non-material exposure, material outcome

“Getting off zero” is a phrase increasingly heard in institutional boardrooms. Bitcoin’s unusually asymmetric return profile means that even a small allocation has the potential to produce a meaningful impact on long-term portfolio outcomes.

Developing a thoughtful bitcoin strategy is becoming important for a wide range of investors. Whether an allocator ultimately chooses to include this asset class depends on their specific objectives, constraints, and governance considerations. However, the current macro environment, the asset’s underlying investment thesis, and historical portfolio analysis all suggest that the conversation is more relevant today than at any point in bitcoin’s history.

In this context, ignoring bitcoin as an investable asset no longer appears to be a prudent approach. Even if an investor concludes that a zero allocation is appropriate, that decision should be the result of a well-informed process—not default or inattention.



1 Using original Kelly formula of: winning probability – (losing probability / win-loss ratio). This original formula assumed the loss on each event would be 100% and is therefore more conservative. A more generalized version of the formula that accounts for the fact losses may not be 100% (such as with bitcoin, which has not experienced a 100% loss in a year) results in an even higher recommended position size.

2 Bloomberg, Worst Bond Rout in Decades Intensifies With UK Losing 27%, published September 27, 2022, <https://www.bloomberg.com/news/articles/2022-09-27/bond-market-selloff-shows-no-signs-of-abating-with-uk-losing-27>

3 Bloomberg, Closest Stock and Bond Correlation Since 1997 Hinders Diversity, published March 30, 2023, <https://www.bloomberg.com/news/articles/2023-03-30/closest-stock-and-bond-correlation-since-1997-hinders-diversity>

4 Federal Reserve Bank of St. Louis, Federal Debt, latest data from July 01, 2025, <https://fred.stlouisfed.org/series/GFDEGD-Q188S>

5 International Monetary Fund, General Government, Debt, March 02, 2026, https://www.imf.org/external/datamapper/GG_DEBT_GDP@GDD/CAN/FRA/DEU/ITA/JPN/GBR/USA

6 International Monetary Fund, The Liquidation of Government Debt, published January 2015, <https://www.imf.org/external/pubs/ft/wp/2015/wp1507.pdf>

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