

Embracing Volatility: Why Risky Investment Assets Should Not Be Avoided

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ABSTRACT

This research article explores the generally accepted approach to avoid highly volatile assets in terms of its impact on the structure and performance of investment portfolios. High-risk assets, particularly cryptocurrencies, can be critical to the strategic allocation of an investment portfolio and should not be considered a speculative tool. On the contrary, such an approach becomes necessary to achieve long-term financial objectives, especially under the changing financial environment in 2026-2027, which is characterized by technological breakthrough, declining profitability, and persistent inflation. This paper is based on historical profitability data from 2015-2025, supplemented by a comparative assessment of the risk-return ratio. Cryptocurrencies and stocks are characterized by significant short-term volatility. However, when invested long-term, these assets can provide higher returns. Furthermore, including them in a portfolio enhances diversification, confirmed by the results of the study. These advantages have become especially important in a modern financial environment, where bonds are no longer able to provide comparable returns. The analysis shows that including these assets in an investment portfolio can be justified if used prudently and rationally. If allocated in accordance with the principles of modern portfolio theory, such instruments can improve investment management efficiency. This approach reduces the negative impact of inflationary processes, which increase the cost of capital and, consequently, can weaken the quality of the portfolio. Illiterate management poses a much greater threat to investment results than the risk itself.

THE INVESTMENT LANDSCAPE OF 2026-2027

The current investment landscape of 2026-2027 is characterized by high uncertainty, despite widespread access to new asset classes. The establishment of the economic environment is influenced by post-pandemic fiscal policy, the active introduction of artificial intelligence technologies, geopolitical situation and the maturation of blockchain infrastructure. All these factors have significantly changed the ratio of risk and return in global financial markets. In such circumstances, investors often unconsciously turn to "safe" assets, such as government bonds or their analogues. However, this strategy may cause hidden risks for the preservation and growth of real capital, because the profitability of such instruments remains lower than the inflation rate (Nenova, 2025) .

The global financial system gradually stabilized by 2026 after the inflationary events of the early 2020s, but it was achieved by reducing the profitability of traditional non-risky assets. The Federal Reserve and

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the European Central Bank (ECB) maintain rates at around 3.5–4.0%. As a result, the yield on cash and government bonds has become more predictable, but it is still insufficient to significantly increase capital (FED, Federal Reserve issues FOMC statement, 2026) (ECB, 2024)

At the same time, investors face restrictions in the stock market. In the period from 2015 to 2025, stocks represented by the S&P 500 index were traded at fairly high valuations, and the average P/E ratio exceeded 22 (S&P 500 P/E Ratio, 2015-2025), which may be a constraint for future returns. Although bonds retain the function of a stabilizing instrument, their investment potential remains limited. In this regard, there is a growing interest in reviewing the importance of high-risk assets, including cryptocurrencies, in a modern investment strategy.

Over the past few years, the cryptocurrency market has undergone a noticeable evolution, and, today, bitcoin is not perceived only as a means of saving. It currently includes a wide range of digital assets and financial mechanisms: Ethereum with a staking profitability model to generate income from betting, decentralized finance (DeFi) protocols, and tokenized real assets. Meanwhile, the transformation of the crypto industry's infrastructure continues. Technological benefits and the digital financial instruments adoption require a deep analysis of their role and practical application in modern investment strategies. This also increases the need for a systematic analysis of the function that such assets can play within a diversified portfolio (2025 Annual Crypto Industry Report, 2026).

The evolution of the stock market in recent years is characterized by a gradual change in the factors that determine its dynamics. A significant driver of these shifts is the rapid growth of artificial intelligence technologies. Their further development will, likely, enhance differentiation between companies and between sectors of the economy. Semiconductor manufacturing companies, cloud computing, and specialized software are likely to be able to maintain the highest market valuations, but this will only be possible if profits grow steadily and can justify significant capital investments (Meeker, 2025).

In the meantime, significant opportunities are opening for companies that actively implement artificial intelligence in their work such as healthcare, finance, and industry. In these sectors, the difference between successful and less successful companies will become more noticeable. Their position may depend on how effectively they can use artificial intelligence to increase productivity and create new sources of income. This situation creates additional opportunities for investors to choose stocks not only in the technology sector, but also in other sectors of the economy (The Adoption of Artificial Intelligence in Firms, 2025).

The bond market has changed significantly in recent years. Yields in this segment have risen, leading investors to once again view bonds as a significant source of income and diversification of investment portfolios. However, the structure of this market has become more complex. As a result, bonds continue to exert persistent inflationary pressure, and central banks are becoming particularly influential, as they must constantly control debt growth and support economic activity. The maturity premium is expected to be positive, so maturity management becomes the core of the investment strategy (Bond Market Outlook, 2025).

The choice of specific instruments is playing a significant role in the credit market. Investment-grade corporate bonds currently look quite attractive in terms of yield. However, rising interest rates have the greatest impact on issuers with high debt burdens, increasing the likelihood of default. Nevertheless, today's market environment provides investors with new investment opportunities, particularly in the

distressed debt and high-yield bond segments. However, using such instruments requires a more careful and selective approach to their analysis and selection. Structured loans, which can provide higher returns because of collateral, may also become more appealing, but their use requires detailed analysis. Overall, this asset class no longer offers simple investment solutions. Instead, it offers a wide range of instruments that allow to generate income and manage risk. For this reason, investors may prefer a more attentive and flexible approach to each segment of this market (Bond Market Outlook, 2025).

The digital asset market is gradually shifting from a primarily speculative model to a more institutionalized one, although high volatility is likely to remain. One of the determining factors in coming years may be the maturation of regulation. This process will be especially important for major jurisdictions such as the United States and the European Union. Whether new regulations will lead to increased participation by institutional investors or, on the contrary, create additional restrictions for them will largely depend on the degree of their clarity and consistency (The Rise And Reality Of Digital Asset Treasury Companies, 2025).

Bitcoin can further strengthen its role as a digital store of value, which is especially likely in the context of concerns about the depreciation of national currencies. However, bitcoin's high volatility still remains an obstacle to its widespread inclusion in investment portfolios (Soleimani, 2025).

A more significant potential is associated with the progression of the blockchain infrastructure. The application of technology becomes as important as they crypto assets. The tokenization of real assets (RWA), including saving bonds, direct investments, and real estate may attract special attention. Tokenization can facilitate closer interaction between digital and traditional financial markets (Mirdala, 2025).

The effectiveness of this segment will depend less on the behavior of retail investors, and more on the scalability of technologies, the regulatory framework, and proven usefulness. Therefore, it is important for investors to distinguish between infrastructure enhancement and speculative fluctuations in the prices of crypto assets and take into account both the high potential of this market and the remaining risks (Fay, 2025).

A comparative study of various investment instruments reveals one of the fundamental principles of financial market functioning: the relationship between risk and expected return (ratio of risk and return). As a rule, the higher the potential return, the greater the risk and the greater the volatility of the used assets. Thus, investors' desire to increase capital must be correlated with their willingness to accept possible financial losses and the level of associated uncertainty. At the same time, there are no universal or completely safe investments that ensure high growth and minimal risk at one time. For this reason, every investment decision is a compromise between stability and higher profitability. More stable assets usually bring lower but more predictable profits, whereas more profitable assets tend to be associated with greater instability and risk. This paper analyzes the risk and returns fundamentals of equities, bonds, and cryptocurrencies to explore whether the modern investment landscape requires new approaches to portfolio construction (Ababneh, 2025).

MAIN ASSET CLASSES: STOCKS, BONDS AND CRYPTOCURRENCIES

The modern investment market includes three key asset classes, each with its own characteristics, risk level, and expected return, each playing a distinct role in a diversified portfolio. Stocks and bonds have traditionally served as the primary investment instruments, relying on established economic concepts and

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mechanisms for the functioning of the financial market. In contrast, cryptocurrencies are a relatively new asset class. Their digital nature and circulation characteristics distinguish them from traditional financial instruments and significantly change the usual perceptions about financial markets. Research on these asset classes provides a more detailed understanding of their characteristics, identifies the factors that influence their value, and assess the associated risks. In addition, this approach shows how these instruments interact with each other in the financial market. However, uniqueness of their economic nature leads to significant differences in risk levels and potential returns (Gottwald, 2026).

Equities, also known as stocks or shares, reflect a share of participation in the capital of a company and give the investor the status of a co-owner of the enterprise. Equities give the right to participate in the company's financial results, primarily through the growth of the capital price and the dividends (a portion of the profit that the company distributes to shareholders). This is why shares are an instrument primarily focused on long-term capital growth (Gottwald, 2026).

The investor who holds stocks is a residual claimant. This means that he receives the company's profit only after accomplishing all other obligations. Such obligations also include payments to creditors and bondholders. This situation directly affects the ratio of risk and return. The appeal of shares is the fact that with successful business development, growing profits, and strengthening the company's market position, the value of its stocks can increase significantly. Nevertheless, stocks are among the riskier financial instruments. In the event of a company's liquidation or serious financial difficulties, shareholders' claims are the last to be satisfied, resulting in the risk of a complete loss of the invested money. This increased risk is associated with the possibility of higher returns. Stocks differ significantly from bonds in their economic nature. Specifically, they do not offer a guaranteed fixed income and do not have a predetermined maturity date. Therefore, the yield on such instruments cannot be determined in advance, and its value can fluctuate significantly over time. At the same time, this uncertainty is coupled with the potential for virtually unlimited value growth if the company develops successfully (Gottwald, 2026).

Investors, while analyzing a stock's market, consider both the company's internal characteristics (competitive advantages, its financial condition, the industry's position, and the quality of management) and the external economic environment (economic growth rates, consumer sentiment, and corporate earnings dynamics) in order to assess the future profit potential. Macroeconomic factors, including economic growth rates, consumer sentiment, and corporate earnings dynamics, are equally important. Shares are an investment instrument that combines significant potential for long-term returns with an increased level of risk, making them an important, but also the most volatile, element of an investment portfolio (Jerab, 2024).

Bonds are fixed-income and debt instruments. An investor owning bonds lends funds to the issuer for a temporary loan. The issuer may be a government, municipality, or private company. In exchange, the investor receives the right to a predetermined stream of payments, which typically includes regular coupon income and the return of the bond's principal on a specified maturity date. It is the predictability of payment terms and the timing of capital repayment that distinguishes bonds from other financial instruments. In case of default by the issuer, the investor understands in advance the income they will receive and when their investment will be repaid (Jerab, 2024).

While analyzing the bond market, two main types of risk are usually considered. The first is credit risk, which shows how reliable the issuer is and whether he will be able to repay the debt and pay interest on time. When analyzing credit risk, credit ratings by specialized international agencies, such as Moody's

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and Standard & Poor's, are often used. These organizations independently assess the reliability of issuers and their debt obligations. These ratings help investors understand the borrower's level of reliability. The second important risk is interest rate risk. It is related to how the price of a bond changes with fluctuations in market interest rates. If interest rates on the market rise, the price of already issued bonds usually decreases. Conversely, if the rates fall, the value of such bonds, as a rule, increases (Jerab, 2024).

Bondholders have a special legal status. They are considered the main creditors of the company or the state. This position largely determines the more conservative risk-to-yield ratio for bonds. The income on the bonds is set in advance by the terms of the agreement. The investor receives fixed interest payments and repayment of the principal amount. Therefore, the maximum profit is known in advance. It consists of the sum of all coupon payments and the nominal value of the bond. Because of this, investors do not participate in the issuer's additional profits. Even if the company is very successful, the yield on the bond does not increase. However, in return, the investor receives a higher level of protection. The bonds have priority in receiving payments in case of bankruptcy. Their claims are satisfied first, while shareholders receive funds only after their creditor obligations are met, if resources remain available. Bondholders' claims are legally regulated, that is why bonds are typically considered more secure and less risky instruments. However, this security also means more moderate returns in comparison to stocks (Gottwald, 2026).

The risks associated with bonds are usually easier to quantify. This primarily concerns the risk of default and the risk of interest rate changes. Unlike stocks such risks are more measurable and predictable. This makes it easier to evaluate bonds in terms of price and yield. In addition, they often play a stabilizing role in investment portfolios. High-quality government bonds usually provide the lowest return, but they are considered the most reliable and can serve as a protective asset during economic instability. Corporate bonds with lower credit ratings, on the other hand, offer higher yields, as investors demand additional compensation for the higher risk of non-payment of debt.

Cryptocurrencies represent a new class of digital assets. They exist only in electronic form and work on the basis of special technologies. Cryptography is used to protect transactions. Data transmission and storage take place in decentralized networks called blockchains, which allow to safely conduct operations, control the release of new units and confirm ownership of the asset. Cryptocurrencies, unlike stocks, do not give the right to a share in a company and are not related to corporate profits. Unlike bonds, they are not debt obligations. The cost of cryptocurrencies is formed according to other principles and is influenced by the network's usefulness, limited supply, and the market participants' trust in this asset (Gottwald, 2026).

Bitcoin is considered the first cryptocurrency and one of the most well-known digital assets. It is also characterized as "digital gold" due to its limited supply, lack of centralized control, and global circulation. These characteristics are often attributed to its relative independence from traditional monetary policy.

The emergence of Ethereum marked a significant milestone in the blossoming of the cryptocurrency market, as this platform expanded the capabilities of blockchain technology. A key innovation was the concept of a programmable blockchains, which made it possible to create smart contracts, algorithms that automatically execute specified transaction conditions. These contracts are used to develop decentralized applications that eliminate the influence of the ecosystem of decentralized financial and other digital services. These applications are the basis of a new financial environment known as decentralized finance (DeFi), as well as other digital ecosystems. Research in the field of cryptocurrencies covers a wide range

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of topics: technological reliability of electronic networks, their level of security, the increase in transaction activity and the speed of technology adoption. Blockchain network management models and changes in the legislation are also significant, as regulation continues to grow rapidly and has a significant impact on market dynamics (Ganne).

Unlike traditional financial instruments, cryptocurrencies do not have the usual financial indicators, cash flows, or a legal entity behind the asset. Consequently, the risk-reward profile of cryptocurrencies differs significantly from that of traditional financial instruments such as stocks and bonds. Their value largely depends on market participants' expectations and perceptions of future development, the scale of innovation, and the expansion of technology and the growth of the user network. This creates a wide range of possible outcomes: under favorable conditions, assets can achieve widespread adoption and provide guaranteed returns, while under conservative conditions, they can lose value, leading to a complete loss of investment. The lack of stability and generally accepted indicators adds to volatility, causing cryptocurrency prices to change even over short periods of time (Gottwald, 2026).

In addition to financial risks, there are other types of risks, such as technological disruptions, regulatory changes, legal prohibitions by states, security concerns, and competition between various blockchain projects. Even so, the potential for high profits still exists. It is related to the fact that the price of cryptocurrencies is not limited by real cash flows. However, this possibility is accompanied by a very high level of uncertainty and risks that are difficult to accurately assess (Jerab, 2024).

Equities, bonds, and cryptocurrencies form three distinct asset classes that together create a unique set of investment instruments. They differ in the nature of the rights that the investor receives. The bonds give the investor the status of a creditor. He provides funds on loan and is entitled to fixed payments under the contract. Due to such contractual obligations, bonds are usually characterized by a lower level of risk and, consequently, lower yields. Shares give the investor a stake in the company. The shareholder's income depends on the financial results of the business. Therefore, stocks have historically provided higher returns, but they are associated with a higher level of risk. Cryptocurrencies are different from traditional financial instruments and are riskier. They provide investors with neither a fixed cash flow nor claims against the issuing company. Cryptocurrencies' value is primarily determined by the level of demand for the relevant technology, the scale of its implementation, as well as market expectations regarding the further enhancements of digital ecosystems. For this reason, cryptocurrencies are particularly uncertain: they can generate both significant profits and substantial losses (Jerab, 2024).

In the current economic environment, planning an investment portfolio requires looking beyond the individual characteristics of assets to understand how they interact within the overall portfolio. This approach is essential because different asset classes respond differently to shifts in macroeconomic conditions and market dynamics. (WisdomTree, 2025). Stocks and bonds respond primarily to macroeconomic factors such as economic growth, inflation, and central bank policy. Cryptocurrencies, on the other hand, are more dependent on technological innovations, digital network infrastructure, and regulatory changes, making this market more volatile.

In future, analysis in this field will likely focus on the integration of digital assets into the traditional financial system. In the years ahead, key developments may include the implementation of central bank digital currencies, along with shifts in the role of various investment instruments driven by geopolitical changes and demographic trends. At the same time, understanding the economic essence of a particular asset remains a key principle of investment analysis. The nature of the rights an investor receives when

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owning a particular financial instrument significantly determines both the level of risk and the potential return on investment (Duan, 2023).

Assets comparison

In the past, the academic literature devoted considerable attention to analysis of the relationship between risk and return in the stock and bond markets. These studies laid the foundation for modern approaches to investment portfolio construction. For a long time, investors were advised to allocate capital between these two asset classes to achieve a balance between growth and stability. One of the most well-known strategies is the 60/40 portfolio model, based on the ideas of (Markowitz, Portfolio Selection. *The Journal of Finance.*, 1952). According to this approach, approximately 60% of funds are allocated to stocks, which offer capital growth potential, while the remaining 40% are invested in bonds, which serve as stabilizing assets. Historical data shows that this portfolio structure was quite successful. Since the 1960s, the average annual return of a 60/40 portfolio has been approximately 9%, while its volatility has been approximately half that of a portfolio consisting solely of stocks (Financier, 2026). This model is based on two key assumptions. First, stocks and bonds are thought to have a low or negative correlation. Secondly, bonds are viewed as a relatively stable asset that reduces the overall risk of the portfolio (Olu-Pitan, 2025).

Classic investment portfolio recommendations are based on the principles of modern portfolio theory and the strategic asset allocation strategy. Within this model, investors typically consider bonds as diversifying tools. Their primary function is to mitigate potential portfolio losses during periods of declining stock market asset prices. However, in recent years, the market environment has changed. Many studies have documented a shift in the relationship between stocks and bonds. Since 2022, these asset classes have shown a positive correlation, which led to their simultaneous decrease in price. As a result, the classic 60/40 portfolio declined in value by approximately 16% in 2022, being the worst result for this strategy since 1937 (Olu-Pitan, 2025). This pattern is consistent with historical analyses of the correlation between stocks and bonds, which show that inflationary episodes drive positive correlations (Ilmanen, Fall 2003).

The emergence of new asset classes, such as cryptocurrencies, requires a reconsideration of traditional investment portfolio analysis models. These assets can provide returns that are weakly correlated with the dynamics of traditional financial markets. Therefore, they have the potential to improve portfolio diversification, which play a significant role in the environment, where the traditional correlation between stocks and bonds has significantly changes (Wilson, 2025).

In this paper we analyze the missing part of academic research papers, related to correlation between asset returns by adding analysis of new asset classes like cryptocurrencies.

This paper contributes to several academic literatures. First, this paper analyzes efficient portfolio construction using a wider range of asset classes, including cryptocurrency. Like Andrianto and Diputra (Andrianto & Diputra, 2017), this paper finds that cryptocurrency expands the efficient frontier of portfolios. Relative to this strand of the literature, this paper emphasizes the role of bonds and inflation in the relative attractiveness of cryptocurrency compared to other assets, especially in the post-pandemic era (Elie Bouri, 2017).

The following table shows the differences between the asset classes analyzed in this article.

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Exhibit 1: Comparison of Investment Assets

Feature	Equities (S&P 500)	Bonds (US Agg)	Crypto (Bitcoin)
Primary Driver	Profit growth, long-term growth, liquidity	Interest rates, contractual cash flows	Network adoption, liquidity, alternative monetary asset, portability
Risk Profile	Moderate-high, profit shocks, valuation compression, concentration, behavioral timing	Low-moderate, duration repricing, inflation, reinvestment, issuer credit	Extreme, regulatory shifts, leverage cascades, operational risk, extreme drawdowns

The S&P 500 (Standard & Poor's 500) index is not a separate financial asset, but a stock index. It is used as an indicator of the stock market condition. The index reflects the dynamics of the share prices of the 500 largest companies in the United States. Therefore, it is considered one of the main benchmarks for assessing the state of the American stock market.

The US Agg (Aggregate) is a cumulative index of US bonds calculated by Bloomberg. It is used to evaluate the effectiveness of the investment-grade bond market in the United States. This index is considered a standard benchmark for fixed income bond portfolios. It consists of U.S. Saving bonds, U.S. Government Agency Bonds, U.S. Investment-Grade Corporate Bonds, Mortgage-Backed Securities (MBS).

Bitcoin (BTC) is the most traded cryptocurrency, presenting a decentralized digital asset.

Historical Returns (2015–2025)

Data on total returns (capital appreciation + dividends/coupons) for the period from January 1, 2015 to December 31, 2025 were used to analyze risky assets.

Exhibit 2: Annual Total Returns (Percentage Points, 2015–2025)

Year	Equities S&P 500 TR	Bonds US AGG	Crypto Bitcoin (BTC)
2015	1.38	0.48	15.03
2016	11.96	2.60	123.75
2017	21.83	3.50	1369.03
2018	-4.38	0.34	-73.48
2019	31.49	8.70	92.00
2020	18.40	7.50	303.09
2021	28.71	-1.50	59.71
2022	-18.11	-13.00	-64.27
2023	26.29	5.50	155.41
2024	25.02	1.70	120.98

2025	17.88	7.10	-6.34
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These data are taken from the following sources: S&P 500 Total Return Index (S&P500, 2015-2025), Bloomberg US Aggregate Bond Index (Bloomberg, 2015-2025), Bitcoin (USD) Spot Price (Clickchart, 2015-2025)

Three observations follow directly from Exhibit 2. Between 2015 to 2025, the main asset classes showed different dynamics. Stocks generally demonstrated growth, while the bond market struggled due to higher interest rates. Cryptocurrencies, meanwhile, provided extremely high returns, but were accompanied by high volatility. The American stock market, represented by the S&P 500 index, delivered high returns. The average annual growth of the index over the period was about 14.6%. In most years, the market has shown positive dynamics, but the index declined by 18.11% in 2022.

The average annual yield on U.S. intermediate-term savings bonds over the ten-year period was about 1.27%, indicating that this instrument showed lower results. This market segment also experienced a decline in value in 2022, with bond prices falling by approximately 13% because of rising interest rates.

The cryptocurrency market performed the most notable dynamics during this period. Bitcoin's price rose from approximately \$290 in 2015 to over \$83,000 by 2025. However, this rapid growth was accompanied by sharp price fluctuations.

The balance between different asset classes also changed during ten years. In some periods, cryptocurrencies show weaker results, while stocks and bonds demonstrated growth. This volatility force investors to reconsider traditional approaches to investment portfolios and seek new ways to diversify. The possibility of high returns from cryptocurrencies, together with the historically unusual correlation between bond and equity performance, makes it worthwhile to reassess traditional approaches to portfolio construction.

SHIFTING THE INVESTMENT PARADIGM IN 2026: REASONS FOR INCREASING COMPETITION BETWEEN DIGITAL ASSETS AND TRADITIONAL STOCKS.

Investment preferences in financial markets may change significantly by 2026. Cryptocurrencies are attracting more and more attention from investors, who are gradually moving from primarily speculative assets to a more institutionalized element of the financial system. One of the reasons for these changes is a decrease in confidence in traditional assets denominated in fiat currencies. An additional factor is the improvement of blockchain technologies, which provide higher transparency and efficiency of financial transactions. Historically, stocks have been seen as the main instrument of long-term capital accumulation. However, today some retail and institutional investors are beginning to consider digital assets as a potential tool to protect against currency depreciation (Forbes, 2021).

Macroeconomic conditions largely determine changes in financial markets. In recent years, the investment landscape has been profoundly shaped by persistent inflation and elevated levels of government debt. (BlackRock, 2025). In this situation, investors are increasingly discussing so-called "fiat risk," which is associated with the potential decline in the purchasing power of traditional currencies and assets denominated in them. Under such conditions, cryptocurrencies, primarily Bitcoin and Ethereum, are beginning to be viewed as a special category of digital assets. A key feature of these cryptocurrencies

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is their strictly limited supply (Grayscale, 2026). The supply is determined by algorithmic mechanisms and is independent of central bank decisions or monetary policy. This fundamentally distinguishes them from fiat currencies, the supply of which can increase as a result of government monetary policy. Research by large investment companies, including Grayscale, shows that in the context of declining confidence in the low-inflation regime, cryptocurrencies with a fixed supply can serve as an additional element of diversification in the portfolio. Unlike stocks, whose value largely depends on the state of the traditional economy, such assets may be less related to the dynamics of the fiat financial system.

The cryptocurrency market is gradually moving from its early stages, characterized by limited regulation, to the stage of institutionalization. Under these circumstances, creating a clear legal framework for the circulation of digital assets is a key focus. Legislators are increasingly discussing initiatives aimed at controlling the structure of the cryptocurrency market and defining the rules for its operation. One of the examples is the Digital Asset market Clarity Act of 2025 (CIARITY, 2025), proposed in the United States. This legislation could create a clearer legal framework for working with digital assets and increase the market's attractiveness to large institutional investors, including pension funds Ivy League universities.

By 2026, investor attitudes toward cryptocurrencies have changed significantly. They are increasingly viewed not only as a purely speculative instrument, but also as a distinct alternative asset class. Digital assets are gradually becoming integrated into the traditional financial infrastructure. Access to them is increasingly provided through brokerage accounts, as well as various exchange-traded investment products. An additional factor driving investor interest is the maturation of regulation. The emergence of clearer regulations and increased regulatory oversight are helping to reduce fraudulent risks and increase market transparency. As a result, digital assets are becoming more attractive for inclusion in investment portfolios.

Cryptocurrencies are becoming increasingly popular because of the unique features of their infrastructure and relatively low transaction costs compared to traditional financial markets. Investors are also attracted by new mechanisms for capital formation and circulation in the blockchain environment (Tambe, 2025). Traditional stock markets operate through a complex infrastructure of intermediaries: brokerage firms, clearing houses, and custodians are all involved in the transaction process, that, in turn, complicates the transaction process and increases both the time required to process transactions and the associated costs. Blockchain systems, in contrast, integrate many of these functions into a single digital infrastructure. Distributed registry technology allows transactions to be recorded in near real-time and provides continuous market access. This technology allows investors to transfer funds faster and access global decentralized financial services (DeFi). This creates additional opportunities for capital management and expands the functionality of the financial system compared to traditional stock market infrastructure.

These institutionalization processes are confirmed by statistical data. According to the latest estimates, as of early 2026, institutional investor participation in the Bitcoin market has increased significantly. Data suggests that centralized entities collectively held approximately one-fifth of the total supply of coins in circulation (Williams, 2026).

Exhibit 3: Institutional Portfolio Allocation in BTC

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Category	Number of Bitcoins	Percent of total Bitcoin supply
ETPs	1,502,560	7.2%
Public companies	1,108,080	5.3%
Governments	647,042	3.1%
Private companies	288,012	1.4%
Exchanges/custodians	145,993	0.7%
Total	4,064,064	19.4%

Source: Bitcoin Treasuries, Artemis Terminal. 19 January 2026. Bitcoin total supply is 21,000,000

RISK VS. RETURN ANALYSIS (EQUITIES, BONDS, CRYPTO): SHARPE RATIO

The Sharpe ratio is an investment performance indicator that reflects returns adjusted for the level of risk assumed. This indicator was proposed by Nobel laureate William F. Sharpe and is widely used in analyzing the effectiveness of investment strategies. The purpose of the ratio is to determine the amount of extra return that an investor receives for each unit of risk. In this case, the volatility of an asset or portfolio's return is used as a measure of risk. Essentially, the ratio compares the excess return of an investment (the return above the risk-free rate) with the amount of risk taken to achieve it. Formally, the Sharpe ratio is expressed by the following formula (Sharpe, 1994):

$$\text{Sharpe Ratio} = \frac{R_p - R_f}{\sigma_p}$$

Where:

R_p = Expected return of the portfolio or investment

R_f = Risk-free rate of return

σ_p = Standard deviation of the portfolio's excess return (a measure of volatility/risk)

Key Points of this are that Excess Return ($R_p - R_f$) reflects the portion of a portfolio's return that exceeds the return on a risk-free asset, such as short-term government bonds. Denominator of the formula (σ_p) represents the volatility of the portfolio's return. It is used to assess the overall level of risk and characterizes the degree to which actual returns can deviate from their mean. It can be interpreted that a higher Sharpe ratio indicates a more effective investment strategy, as the portfolio generates a higher

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return for each unit of risk assumed. Conversely, a negative Sharpe ratio indicates that the resulting return is lower than the risk-free rate. This means that this indicator reflects the amount of excess profitability per unit of volatility. It should be noted that the Sharpe coefficient has certain limitations: for example, it takes into account both positive and negative deviations of returns equally and assumes a relatively symmetrical distribution of returns. Nevertheless, this indicator is widely used as a basic tool for the initial assessment of the effectiveness of risk-based investments.

Using the calendar period 2015-2025 shown in Exhibit 2, simple sample average returns and sample standard deviations (in % points) were calculated:

- Equities (S&P 500 TR): mean $\approx 14.59\%$, volatility $\approx 15.55\%$.
- Bonds (US AGG): mean $\approx 1.84\%$, volatility $\approx 5.95\%$.
- Bitcoin: mean $\approx 191.88\%$, volatility $\approx 404.61\%$.

To visualize the application of the Sharpe method, the risk-free rate ($R_f = 2\%$) was used in the calculations. This indicator is used as a rounded value reflecting the likely level of cash return at the midpoint of the economic cycle when analyzing long-term data. Based on this assumption, the approximate values of the Sharpe coefficient were obtained:

- Equities: $(14.59 - 2)/15.55 \approx 0.81$.
- Bonds: $(1.84 - 2)/5.95 \approx -0.03$.
- Bitcoin: $(191.88 - 2)/404.61 \approx 0.47$.

The analysis shows that in the period 2015-2025, equities demonstrated high risk-adjusted returns, while bonds were affected by fluctuations in interest rates. Bitcoin, in turn, provided very high returns, but was accompanied by extremely high volatility. However, such results do not mean that the Sharpe ratio indicators in the future will correspond to past values. In addition, volatility is not the only indicator of risk, and bitcoin cannot be considered as a stable investment asset without severe drawdown tolerance.

RISK-ADJUSTED RETURNS

The classic portfolio strategy involves building a portfolio based on the 60/40 principle. In this model, about 60% of the capital is invested in stocks, while the remaining 40% is invested in bonds. The main purpose of such a distribution is to achieve a balance between profitability and the level of risk (Markowitz, Portfolio Selection. The Journal of Finance., 1952) The portion of the portfolio invested in stocks is focused on long-term growth and higher returns. The bond part, in turn, provides a more stable income, acting as a protective element during periods of decline in the stock market. Historically, it has been observed that during stock market declines, the value of bonds has often increased. This helped to smooth fluctuations in the total value of the portfolio. Thus, the 60/40 strategy has become the basic model of a diversified and balanced investment portfolio focused on moderate growth with a relatively lower level of risk.

Exhibit 4 presents the performance of various investment portfolios, calculated based on historical return data for the period 2015–2025, previously presented in Exhibit 2. The long-term value of alternative investments is somewhat hard to see from exhibit 2 since the yearly returns are noisy. But aggregating to long time horizon shows clearer benefits, in exhibit 4.

In this study, asset classes are represented through their market indicators: the stock market is represented by the S&P 500 index, debt instruments are represented by the Bloomberg US Aggregate Bond Index, and the cryptocurrency segment is modeled based on the dynamics of Bitcoin.

The Sharpe ratio is used to evaluate portfolio performance. When calculating the ratio for weighted portfolios, the share of each asset in the overall investment structure measured. Applying the Sharpe ratio to such portfolios leads to the following results:

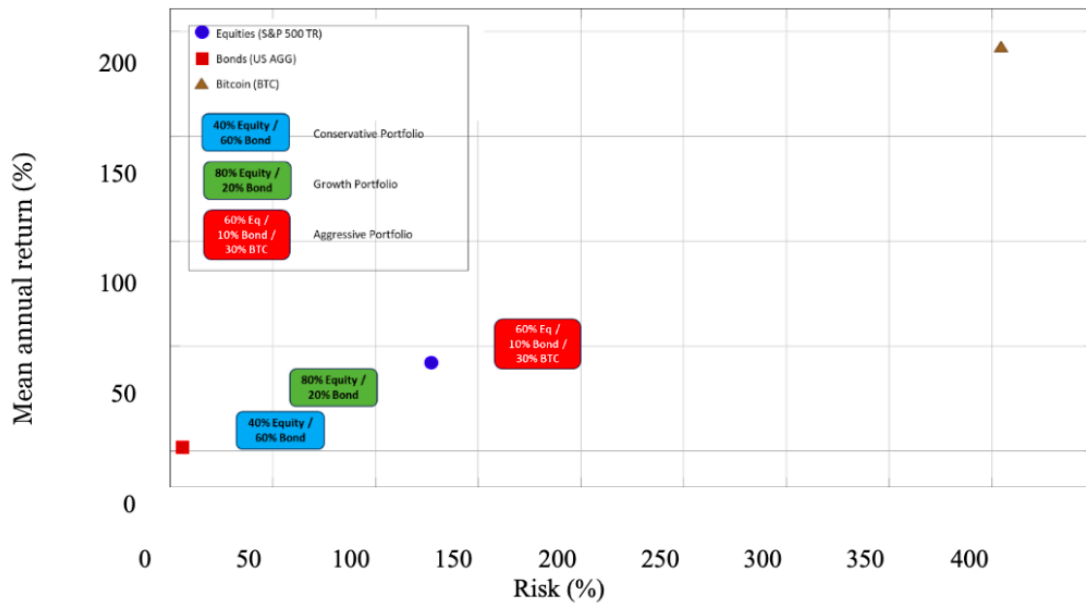
Exhibit 4: Portfolio Models (2015–2025 dynamics).

Portfolio Composition	Annualized Return	Max Drawdown	Sharpe Ratio
Conservative (40% Equity / 60% Bond)	6.2%	-16.5%	0.42
Growth (80% Equity / 20% Bond)	11.5%	-22.0%	0.68
Modern Aggressive (60% Eq / 10% Bond / 30% Crypto)	18.4%	-31.0%	0.89

Exhibit 4 compares several asset allocation models. Specifically, it presents a traditional "conservative" portfolio, as well as a "growth portfolio" with 80% stocks and 20% bonds. It also presents a "modern aggressive" portfolio, with some stocks and bonds partially substituted by cryptocurrency.

Key Result: the "modern aggressive" portfolio experienced a deeper drawdown—approximately -31% in 2022. However, its Sharpe ratio reached 0.89, which is significantly higher than that of the conservative portfolio. This indicates that the increase in volatility was accompanied by a disproportionately high increase in returns. In addition, the Sharpe ratio for this portfolio was higher than that of each individual asset in it. This result confirms the effectiveness of diversification and demonstrates the benefits of building an investment portfolio based on multiple asset classes.

Exhibit 5: Risk-return figure for cryptocurrencies, bonds, and stocks, based on data for calendar years 2015–2025 (see Exhibit 2).



The graph shows that various asset classes differ significantly in both risk and expected return. Therefore, an investment strategy focused on complete risk aversion effectively excludes instruments with higher potential returns from the portfolio. That is why such an approach can significantly limit the potential for long-term capital growth. Conversely, including riskier assets and creating a more aggressive portfolio structure can improve the risk-return balance.

Over the past three years, financial markets have faced an unusual situation: investors have seen simultaneous declines in both global stock markets and fixed income markets. In the past, such situations were extremely rare. However, recent conditions have cast doubt on the effectiveness of the classic 60/40 asset allocation strategy. According to this model, bonds are supposed to serve a defensive function in a portfolio, reducing overall risk and partially offsetting losses during periods of stock market decline. However, in recent years, bonds have not achieved this protective function. The main reason for such changes is related to the changing economic environment. For almost forty years, the global economy has been experiencing low inflation, and central banks pursued a soft monetary policy and maintained low interest rates. In recent years, the macroeconomic situation has changed. Rising inflation has led to higher interest rates and caused real interest rates to return to positive territory. These changes have significantly impacted financial market performance. Rising rates have put pressure on both stocks and bonds, causing both asset classes to simultaneously experience unfavorable market dynamics.

After the global financial crisis of 2008 (FSB, 2024), this situation intensified. Central banks began actively using stimulating monetary policy and conducting large-scale monetary experiments. In many countries, interest rates fell to zero, and in some cases even became negative. Simultaneously, central banks began implementing quantitative easing programs, actively purchasing financial assets on the market. These measures led to a significant decline in bond yields, and investors began to seek alternative instruments that could provide higher returns.

Cheap capital also affected the stock market: low interest rates reduced discount rates in financial models. As a result, the future earnings of the companies were estimated higher, which supported the growth of stock prices. In addition, companies actively used borrowed funds to buy back shares, which also increased their value. There was a steady rise in prices in the bond market, as lower interest rates automatically increased the value of bonds already issued. The stock price was simultaneously rising due to excess liquidity and low interest rates. During this period, there was a steady negative correlation between stocks and bonds. If economic downturn occurred, investors had transferred funds to government bonds, considering them safer. This reduced their profitability and raised prices, but it helped partially offset the drop in riskier assets.

The pandemic and its consequences have become the main factor in the transformation of financial markets. Initially, the crisis led to serious disruptions in global supply chains. Subsequent geopolitical formation further deteriorated the situation and exacerbated existing economic difficulties. As a result, inflationary pressures increased significantly. However, rising prices proved to be more persistent than temporary, as initially was predicted by central banks, particularly in the service sector. In response to accelerating inflation, central banks began rapidly raising interest rates, triggering a major cycle of monetary tightening. One of the most noticeable changes was a sharp increase in the cost of capital. For example, the US Federal Reserve raised its benchmark interest rate from near zero to over 5% in approximately a year and a half. This increase significantly impacted financial asset valuations.

The rise in rates had the most direct impact on the bond market. This segment of the market experienced a significant drop in prices, because higher interest rates reduce the value of previously issued bonds. As a result, the bond market showed one of the lowest annual yields in modern history. Rising interest rates have also had a noticeable impact on the stock market: the increase in the risk-free rate has led to an increase in the discount rate used by investors when assessing the future earnings of companies. This, in turn, reduces the present value of future cash flows and, consequently, reduces the price investors are willing to pay for shares. Growth companies focused on long-term profits were particularly sensitive to such changes. At the same time, inflation became a key source of risk for financial markets. Under these new conditions, even bonds, traditionally considered a safe asset, began to pose additional risks for investors.

These changes have significantly impacted the relationship between stocks and bonds. The correlation between them became positive as both asset classes began to respond to the same key factors: inflation and central bank monetary policy decisions. In today's environment, high inflation is perceived not only as an indicator of economic activity and corporate earnings growth, but also as a signal that elevated interest rates may persist for an extended period. This puts double pressure on financial markets. On the one hand, rising rates increase the discount rate used by investors when assessing future corporate earnings, reducing their current value and putting pressure on the stock market. On the other hand, rising interest rates lead to lower prices for previously issued bonds, causing losses for their holders.

These changes have also affected the role of central banks in financial markets. In the past, investors often relied on the so-called "Fed put" - the expectation that central banks would support markets during periods of falling asset prices. In the current economic situation, regulators are primarily focused on restraining inflation. Therefore, they continue to maintain a tight monetary policy, even though such measures may have an adverse impact on the value of financial assets.

The rise in government debt in many countries has an additional impact. This factor is reducing investor confidence in the absolute safety of long-term government bonds and leading to the emergence of an additional financial risk premium. At the same time, the role of cash and short-term financial instruments, which are beginning to generate significant returns, is once again increasing. This increases investor's expectations for returns on riskier assets and reduces the excess liquidity that previously supported the growth of both stocks and bonds. As a result, financial market conditions are changing significantly. The era of relatively straightforward returns provided by passive investments in major asset classes is gradually coming to an end. In the changing macroeconomic environment, investors need to analyze portfolio construction more carefully and selectively. Actively managing investment horizons is particularly important, as is a more careful analysis of asset performance, taking inflation into account.

CONCLUSION

A study of the dynamics for the period 2020–2025 reveals an important characteristic of financial markets: investment instruments with the potential for significant capital growth are typically accompanied by increased volatility. Investors who avoided cryptocurrency investments due to their high risk, for example in 2020 or 2023, missed out on some of the most significant growth phases seen in the market over the past decade.

The 2026–2027 investment environment is evolving. The economy is demonstrating relative stability in nominal terms, but uncertainty about the real value of assets remains. In this environment, a complete shift away from more volatile instruments could limit the long-term potential for capital growth.

Data from 2015–2025 confirms this trend. Traditionally considered defensive instruments, primarily bonds, have not always demonstrated the ability to effectively maintain the real value of invested capital. At the same time, higher-risk assets, primarily stocks and especially cryptocurrencies, have demonstrated higher returns on average. As a result, they have often become an important factor in increasing investors' capital.

The purpose of this study is not to forget about the principles of portfolio investing or to shift to speculative strategies. On the contrary, it suggests reconsidering the concept of investment risk. For an investor, the real risk is not short-term price volatility, but the loss of purchasing power of capital or the failure to achieve long-term financial goals. Volatility, however, reflects only temporary fluctuations in asset prices. Therefore, including a small part of fast-growing but more volatile instruments, such as certain cryptocurrencies, can improve diversification and increase the potential return of a portfolio.

There are some historical precedents, like the 2003-2008 Oil Supercycle (Swedroe, 2017) when Sharpe ratio was stable for years until returns reversed while volatility stayed high, ruining the risk-adjusted metric. These strategies had exceptional Sharpe ratios during calm markets, but when volatility spiked (the denominator growing faster than the numerator), they experienced huge losses. No high-volatility asset has ever maintained an equity-like or bond-like Sharpe ratio after its early, extraordinary return period ended. Bitcoin's current 0.47 Sharpe ratio relies on a 191.88% mean return. If that return falls to 30-50% (still excellent), its Sharpe ratio would drop below equities (~0.5-0.85). If it falls to 10-15%, it would drop below bonds (~0.3-0.4) (Puell, 2025).

The role of cryptocurrency in future investment portfolios may be particularly hard to forecast given that the asset class is especially influenced by technological expansions in the blockchain and related technologies. Finally, the consideration of sustainability factors (ESG) and associated geopolitical risks, which are often nonlinear and difficult to accurately quantify, creates additional complexity.

Thus, the future development of this research is not about abandoning risky assets, but rather about a more balanced and analytical approach to their use. The prospects for research in this area are linked to several key areas. First, it is necessary to develop more reliable methods of stress testing investment portfolios. Such approaches should provide the ability to analyze the sustainability of an investment portfolio in situations where inflationary processes and recessionary tendencies in the economy occur simultaneously. Secondly, it requires the creation of new asset allocation models. These models should take into account different macroeconomic regimes and use modern analytical tools, including machine learning methods. Meanwhile, it is important to analyze the behavioral factors of investing, in particular, behavioral biases that may encourage investors to abandon risky assets at unfavorable market conditions.

Higher-risk assets are not a secondary component of an investment portfolio. On the contrary, their presence is an important and necessary element of its structure. The challenge for investors and researchers is not to completely abandon such instruments, but to develop more effective approaches to their selection, combination, and long-term use in a changing economic environment.

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