

# Deciphering the bitcoin ecosystem

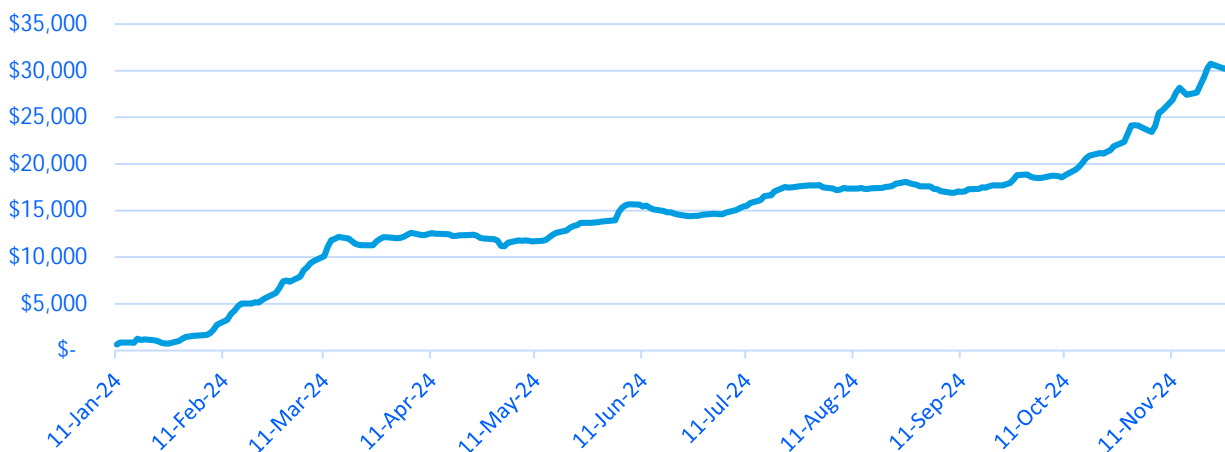


## Introduction

Bitcoin is both a blockchain and a decentralized cryptocurrency introduced in a 2008 white paper by Satoshi Nakamoto and first transacted in 2010. Here, we refer to the blockchain as Bitcoin and the currency as BTC. With the introduction of the Bitcoin blockchain, existing cryptographic techniques were uniquely combined to create a ledger of BTC currency ownership that did not rely on a central authority for record keeping. The project was initially aimed at disintermediating finance and democratizing seigniorage<sup>1</sup>, as a grassroots political response to the Global Financial Crisis. However, in more recent years access to the Bitcoin blockchain is typically heavily intermediated, and the majority of BTC has been mined (or more accurately, mathematically discovered). Bitcoin is now typically treated as a commodity or in plainer terms as “digital gold”.

On January 10, 2024, the SEC<sup>2</sup> announced it was approving the listings of several spot bitcoin exchange-traded products (“ETPs”). Although several routes to owning bitcoin existed prior to this, including ETPs in other jurisdictions, this announcement was seen as a watershed by the markets. The approvals, combined with the promise of a more sympathetic regulatory regime coming out of the 2024 US election, made for a bumper year in returns compared to the US dollar, with the price of Bitcoin rising by 121% (source: Bloomberg). On 4 December, BTC went through a landmark price of \$100,000 per coin (source: Bloomberg) and achieved a market capitalization of over \$2 trillion (source: Coinmarketcap). At the same time, many other crypto projects had use cases that failed to crystalize, leading to a rise in Bitcoin dominance, with the percentage of the cryptocurrency market cap comprising BTC reaching 58.1% (source: Coinmarketcap, 28 January 2025).

### Bitcoin ETF flows in 2024 (US \$m)

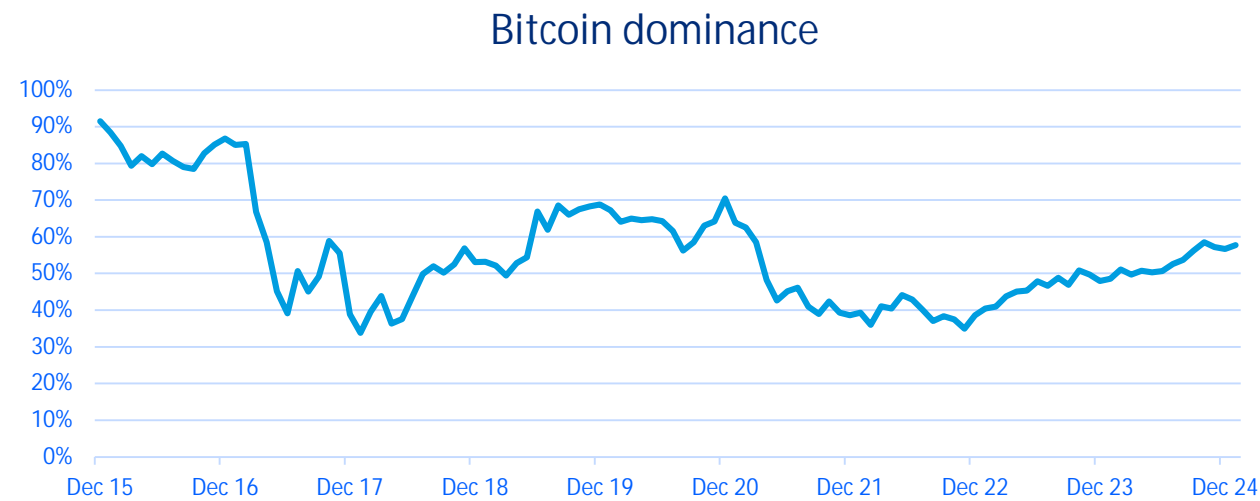


Source: Farside investors 11 January 2024 to 31 December 2024

<sup>1</sup> The ability of a government to profit by creating additional currency over and above the costs to create it.

<sup>2</sup> US securities regulator, the U.S. Securities and Exchange Commission (the “SEC”)

Due to the dominance and steep rise in BTC prices, some investors are now asking whether BTC is an established asset class and ought to be part of institutional asset allocations. Others continue to raise issues of illicit usage, environmental footprint and point to it as being a speculative mania.

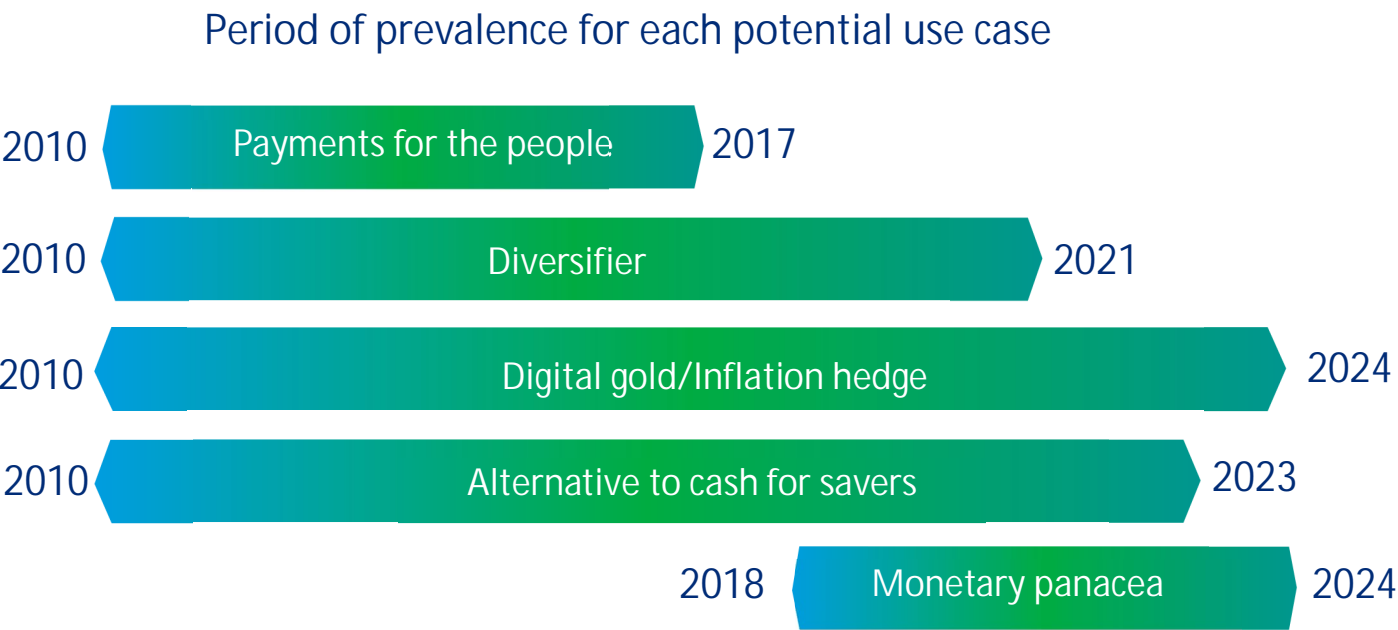


Source: Coinmarketcap 31 December 2015 to 21 January 2025

We assess the various suggested use cases for bitcoin to see if there is a case to be made for using it in portfolios.

Assessing the use cases

In the diagram below, we show the use cases that have been made for bitcoin. We follow this with an assessment of the credibility of each use case in turn.



Source: Mercer, as of 31 December 2024. For illustrative purposes only.

## Payments for the people

The original plan of disintermediation and democracy in a payments system envisioned ordinary people mining the money, spending it and controlling its development. However, this vision has several issues:

1. With centralized exchanges, the Lightning Network, and the arrival of physical ETPs, most BTC transactions happen off the blockchain.<sup>3</sup>
2. While a move to cryptocurrencies has been proposed to reduce wealth and income inequality (Othman et al 2020), BTC ownership is subject to high concentration: 92.8% of BTC are controlled by 1.9% of Bitcoin addresses (Source: Bitinfocharts, 11 December 2024).
3. On-chain transaction speed is slow, with transactions taking 127 minutes on average to complete (Source: yCharts, 27 November 2024). Transactions on the Bitcoin blockchain are deeply inefficient and parallelized and the blockchain simply cannot take the weight as a high-frequency, low-value payments system, at least for now. While the Layer 2 solution Lightning speeds up transactions, centralization and security are reduced.

## Diversifier

BTC originally behaved in a way very different from all other assets in the financial ecosystem and was mostly traded by computer science enthusiasts. Correlations with any asset class were therefore low in its early history. However, as BTC became more integrated into the financial system and into broader portfolios, it became subject to shocks from those systems. This process of financialization saw institutions gain greater influence over pricing. Arguably, the starting point of this process was the introduction of Bitcoin futures by the CME in December 2017.

Since the COVID-19 pandemic, Bitcoin has had a high correlation to technology stocks. This may not be due to an underlying causal link, but rather because both are trading as “risk on” assets.

## Digital gold/Inflation hedge

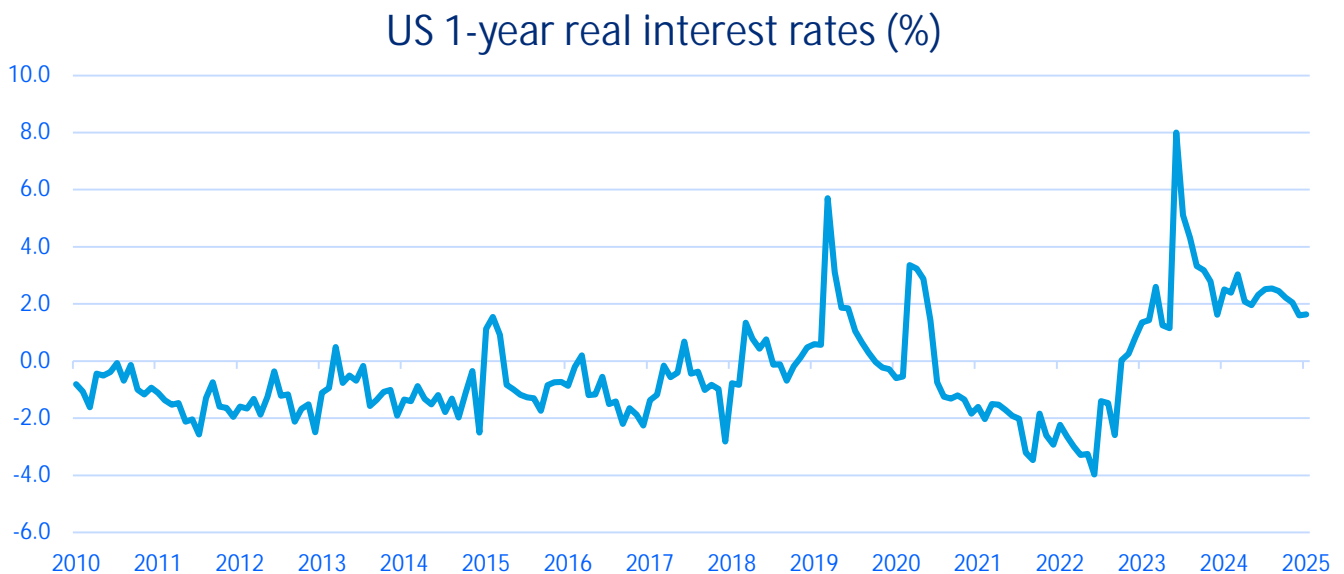
While gold has a track record of over 2,500 years as a currency, Bitcoin has only 14. Gold has the advantage of residual value if human belief in it as a currency diminishes, with wide applications in medicine and electronics, for example. Retail gold demand is also relatively stable, especially in emerging markets for economic and cultural reasons, and this demand could potentially increase as these countries become wealthier. There are literally millions of other cryptocurrency projects, each of which is easily replicable given they are software products, while gold’s unique chemical properties cannot be replicated. Bitcoin is likely a monetary hedge, but not a safe haven, whereas gold has shown elements of both (Choi and Shin (2022)).

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<sup>3</sup> The Lightning Network provides a scalable way of transacting BTC “off-chain” in a Peer-to-Peer system (“on-chain” transactions by contrast are broadcast to the entire Bitcoin network). The benefits of this are privacy and speed. However, reports of adverse user experiences and inherent limitations to the scalability has led to a tailing off in interest. Many people involved in Bitcoin would prefer for it to be a store of value, whereas Lightning or other “Layer 2” protocols convert it into a medium of exchange. More money and developer time has gone into producing similar protocols for second generation cryptocurrencies.

## Alternative to cash for savers

For much of the period after the Global Financial Crisis, savers were not able to maintain the real value of their cash savings. Bitcoin was therefore promoted as an alternative savings vehicle. Real interest rates are rising in most developed economies, and we believe they will stabilize above post-GFC levels<sup>4</sup>, so saving in dollars is re-incentivized. However, it is important to note that in countries where inflation is still high, Bitcoin is still popular, for example Argentina and Türkiye, while other countries have made bitcoin legal tender or are building currency reserves in bitcoin.



Source: FRED from 1 January 2010 to 1 January 2025

## Monetary panacea

Before the 1970s, many major currencies were backed by gold. The use case of backing the US dollar with BTC or of having a “bitcoin standard” was popularized in 2018 by Saifedean Ammous in his book, “The Bitcoin Standard”.

Some smaller nations have already experimented with Bitcoin. El Salvador holds a reserve of around \$560 million in BTC (based on 31 December 2024 prices) and has used bitcoin to stimulate tourism and as legal tender. In Bhutan, reserves from bitcoin mining using hydropower amount to over \$1.2 billion (based on 31 December 2024 prices), in comparison to the latest Bhutanese GDP figure of \$2.9 billion (Source: World Bank 2022).

The use of BTC as a strategic reserve was discussed during the US presidential election in 2024. There is potential for the US Department of Justice to halt auction sales of confiscated BTC, and for the Treasury Department to use it as a strategic reserve. A strategic supply of BTC would be aimed at increasing confidence in the US dollar after a long period of debasement.

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<sup>4</sup> Mercer Global Capital Markets Assumptions Team has revised the long-term equilibrium ‘steady state’ real and nominal rates upwards by 50 basis points effective 2025 Q1 to reflect the return of a more normal economic environment as observed prior to the financial crisis, as outlined in the 2025 Economic Outlook produced by Mercer’s Dynamic Asset Allocation Team.

## **Mercer's concerns with bitcoin**

### **Investors may have been under-scrutinizing the tech**

In the summer of 2022, a collection of some 1,500 professionals in the fields of computing and software wrote to Congress warning of the uncritical approach being taken towards digital assets (Letter in Support of Responsible Fintech Policy (concerned.tech)). Even if this was simply the opinion of the individuals involved, we recommend that investors read their concise, informative, and thought-provoking letter in full. Essentially, the technology is a write-only database with anti-tamper features. It has been treated as a General Purpose Technology, but it appears to have only limited uses. The failure of the IBM-Maersk blockchain project in 2022 has been emblematic of declining expectations for the blockchain.

### **Inefficiency**

Bitcoin energy consumption is far too high for a payment mechanism, consuming 176 TWh per year as of 17 January 2025, more than the country of Poland (167 TWh per year)<sup>5</sup>. While the counter-argument is that there are many other useful products, say lawnmowers or chewing gum, whose global production may consume more energy than a small country does, in this case, we already have existing products that are more efficient. Bitcoin is a much less cost-efficient payment transaction mechanism than established arrangements such as credit card payment systems. One bitcoin transaction requires 1,214 KWh of energy, while VISA can process 100,000 transactions with only 149 KWh of energy<sup>6</sup>.

The main drawback of using bitcoin to pay for things is that almost everything is priced in fiat currencies, such as dollars, euros, yuan or yen. This reflects the fact that the merchant is paying their staff, suppliers, taxes and other costs in fiat, and so to avoid asset liability mismatch, they price their products and services in fiat currency. A fiat-based consumer can rely on some level of near-term price stability – that is, they have dollars and a cup of coffee is priced in dollars. The 30-day annualized volatility of bitcoin in dollar terms is currently 42.9%<sup>7</sup>, making for a dramatic lack of price stability for someone holding bitcoin as spending cash.

### **Illicit use of Bitcoin**

While fiat currencies are also used for many illicit purposes, darknet markets are exclusively run using cryptocurrencies such as bitcoin and monero<sup>8</sup>. More recently, cryptocurrencies have been in the spotlight as a funding source for terrorist organizations like Hamas, including the October 2023 attacks on Israel<sup>9</sup>.

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<sup>5</sup> Source: Digiconomist, minimum bitcoin energy consumption

<sup>6</sup> Source: Statista, data as of January 19, 2025

<sup>7</sup> Source: The Block as of 20 January 2025. Volatility is defined as the standard deviation of the last 30 days daily percentage change in BTC price. Numbers are annualized by multiplying by the square root of 365, as BTC trades all year round

<sup>8</sup> The shift of DarkNet illegal drug trade preference in cryptocurrency: The question of traceability and deterrence. Bahamazava and Nanda. Forensic Science International: Digital Investigation. Volume 40 March 2022.

<sup>9</sup> Source: Congressional Research Service. IF12537 (congress.gov)

## Conclusion

Bitcoin remains an inherently speculative asset, one that may persist for some time, but could ultimately frustrate investors. Transactions on the bitcoin blockchain are heavily parallelized (many computers performing the same task) and therefore inefficient. The bitcoin blockchain cannot handle high throughput or low value transactions efficiently, at least for now. Therefore, it is not an improvement on centralized financial technology, and indeed this is the reason why Bitcoin trading has become centralized. As a scarce monetary commodity, we believe BTC does not offer obvious improvements over gold, which also trades via Exchange Traded Products. The blockchain is easily replicable with improvements and only has first mover advantage as a digital currency. Coinciding with the US presidential inauguration in January 2025, we saw that it is possible for other projects to come out of the blue, in this case a “memecoin”, with \$TRUMP achieving a peak 24-hour trading volume of over \$52 billion dollars over the first weekend of release and a peak market cap of over \$14 billion (source: Coinmarketcap as of 11 February 2025).

While we do not recommend strategic asset allocations to BTC for the reasons presented above, we do acknowledge that BTC prices can be subject to strong momentum and that the regulatory winds are with Bitcoin for the time being. We support skilled asset managers using BTC and other cryptocurrencies as an alpha source within appropriately diversified multi-asset strategies. Given the high levels of volatility observed in BTC, tactical allocations should be appropriately sized (i.e. sized inversely to risk).



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