Economics & Strategy

Digital Assets Update 4Q24: Crypto frenzy

Currencies/monetary policy/economics/digital/banking/finance

Group Research

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This is our quarterly update on digital assets. Please refer to the end of this article for a set of useful resources and links to past publications

Summary

US presidential elections have turbo charged the crypto market, with record flows and price movements both before and after the results. Institutional and retail investors alike appear to be taking the plunge. We take a look at the market frenzy across various crypto assets and assess their outlook in light of possible regulatory changes ahead. We also analyse recent developments in the central bank digital currency space.

Main points

Bitcoin prices soared to record highs post a Republican sweep in US elections.

US regulations on crypto could ease and a US Strategic Bitcoin Reserve may be set up under Trump.

Decentralized prediction markets have attracted attention during US elections, demonstrating a tangible use case for cryptos.

Nakamoto trust via blockchains have been shown as expensive to maintain.

CBDCs continue to gain traction, even if a real-time rollout is not imminent in most jurisdictions.

Introduction

US presidential elections have turbo charged the crypto market, with record flows and price movements both before and after the results. Institutional and retail investors alike appear to be taking the plunge. The developments should be seen in the extraordinary context of the election, where both Republicans and Democrats sensed the strong support for crypto assets among young Americans. Both parties also felt the strength of the crypto lobby to fund the campaigns. Many well-known crypto backers supported Donald Trump in this election, and we are sure they are expecting some payback from the president-elect in terms of deregulation (at least) and crypto purchase (if there is indeed going to be a Bitcoin strategic reserve).

Breathless price targets are being proclaimed for a wide range of cryptocurrencies, while position taking on spot and futures have soared. The spike in flows makes us a tad nervous, as such spikes tend to come with two-way volatility. Regulators would need to be cautious about the risks to retail investors, especially as crypto ETFs have proliferated this year.

We also analyse recent developments in the central bank digital currency space. CBDCs continue to gain traction, even if a real-time rollout is not imminent in most jurisdictions.

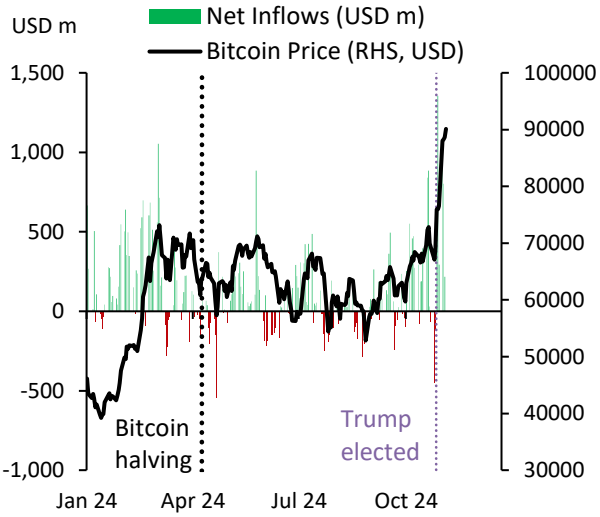
Crypto market

Cryptocurrencies were holding in a range heading into US elections, before breaking to new highs after Trump was confirmed as the President-elect on 6 Nov. Since then, Bitcoin and Ether had rallied by 30% and 33% respectively. Given a Republican sweep with control of Congress and a Trump Presidency, markets are expecting more pro-crypto US polices next year, ranging from deregulation to setting up of a US Bitcoin reserve. These policies could usher in more institutional participation in crypto markets, broaden crypto adoption and ownership, as well as legitimise crypto as an emerging reserve asset.

Post-elections, Bitcoin prices have touched USD90k, lifted by a surge of US ETF inflows of over USD4.2bn. Coming on top of over USD25bn of Bitcoin ETF inflows from Jan-Oct, the cumulative amount of

Bitcoin ETF inflows now stand at more than 6 times the year-to-date inflows into global gold ETFs this year.

Bitcoin: US ETF daily net inflows and price



Source: Bloomberg, DBS

Beyond record highs in prices, crypto usage on the ground has not expanded much over the past few years. According to the Pew Research Center, crypto adoption in the US has remained unchanged at around 16-17% from 2021 to 2024 (Faverio, et. al., 2024). 63% of Americans surveyed were not confident in the current ways to invest in, trade, or use cryptocurrencies. High profile crypto exchange failures, and poor security practices leading to hacks and thefts are likely reasons for the low confidence, even if Bitcoin's own security model is well-proven by now. Separately, a US survey conducted by the Nakamoto Project found that Bitcoin ownership was highly correlated to one's trust in the underlying technology of Bitcoin (Perkins, et. al, 2024). **A lack of wider confidence and trust in Bitcoin technology could be a limiting factor to broader crypto adoption**.

Are there opportunities to improve public trust in crypto? Perhaps. Given Republican control of both chambers of Congress and the White House, we see a high chance for the US to implement more pro-crypto policies and adopt a more permissive regulatory stance towards crypto applications. Trump has voiced unambiguous support for crypto in his campaign and promised to make the US the "crypto capital of the planet". He also promised to replace the leader of the Securities and Exchange Commission (SEC), Gary Gensler, who believes that most crypto projects should fall under the regulatory

purview of SEC and had directed prosecution of numerous crypto firms for violating securities laws. While the SEC is an independent federal agency and Gensler's term only expires in 2026, there may be pressure by the Trump administration to rein in litigation. Regulations that have prematurely curbed development of cryptocurrency projects may also be struck down. **US crypto adoption could pick up if deregulation allows established firms to expand crypto services, giving rise to trusted channels of investing for the public.** More innovation should be coming in the crypto world under Trump, but increased due diligence by investors may also be needed given new risks.

Bitcoin as a reserve asset?

Apart from deregulation, any US recognition as Bitcoin as a reserve asset could reinforce perceptions of Bitcoin being a store of value. Post-elections, US Republican Senator, Cynthia Lummis, reaffirmed plans to establish a US strategic Bitcoin reserve. She has previously proposed a bill known as "Boosting Innovation, Technology, and Competitiveness through Optimized Investment Nationwide Act of 2024" or the "BITCOIN Act of 2024" back in July. This follows from Trump's keynote address at the July Bitcoin Conference in Nashville, where he vowed that if re-elected, the US government would retain 100% of the Bitcoins it currently holds or acquires in the future.

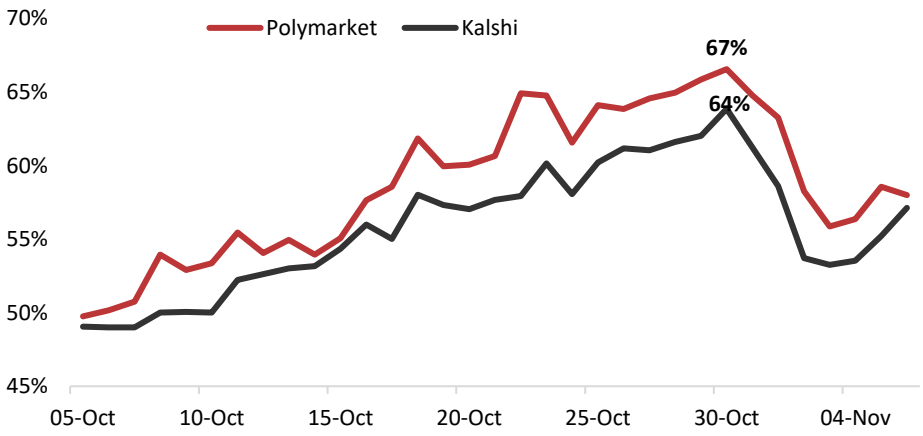
In the bill (link), she recommended the purchase of not more than 200k Bitcoins per year over a 5-year period. These Bitcoins would have a minimum holding period of 20 years, with sales being restricted apart for purpose of retiring outstanding Federal debt instruments. These Bitcoin purchases are to be financed via discretionary surplus funds of Federal Reserve Banks, their remittances of earnings to the US Treasury, and gains from a revaluation of their gold certificate holdings. **The bill's proposed purchase quantum would translate to fresh demand for 1mn Bitcoins** (or 4.8% of total lifetime supply of Bitcoin). Under the Act, government bodies holding on to seized Bitcoins would be restricted from selling them and must transfer them to the Strategic Bitcoin Reserve. With the US government believed to be holding more than 200k of Bitcoins (~1% of total supply), this would be equivalent to restricting potential Bitcoin supply to the market.

Should the US government set up the Strategic Bitcoin Reserve, it is likely to affirm Bitcoin's status as a reserve asset and pose ramifications for US accounting treatment of Bitcoin holdings for institutions and corporates. **This may facilitate the use of Bitcoins as reserves by US corporate treasuries**. Today, Tesla and MicroStrategy are the few known listed companies with Bitcoin holdings, while Microsoft will hold a shareholder vote in December on whether to invest in Bitcoin. **Other countries may also consider adding Bitcoin into their foreign reserves as well**, following the US example. Thus, the proposed Bill's impact on Bitcoin demand is possibly larger and more wide-reaching than it first appears.

Decentralized prediction markets in the spotlight

During the US elections, media and financial commentators have constantly referenced the changing elections odds between Trump and Harris shown on decentralized prediction markets. Crypto-based blockchains had underpinned these decentralised prediction markets, which had become an important and highly successful use case for crypto. Election seasonal momentum has obviously eased, but the relevancy of crypto remains with potential use cases for predictions, and not just in politics. Polymarket has emerged as the breakout platform for such decentralized prediction markets. It enabled markets to prices odds of a Trump win, not just pre-elections but also on a real-time basis as voting results stream in. Investors now have new crypto-based avenues to hedge political outcomes that have financial market implications.

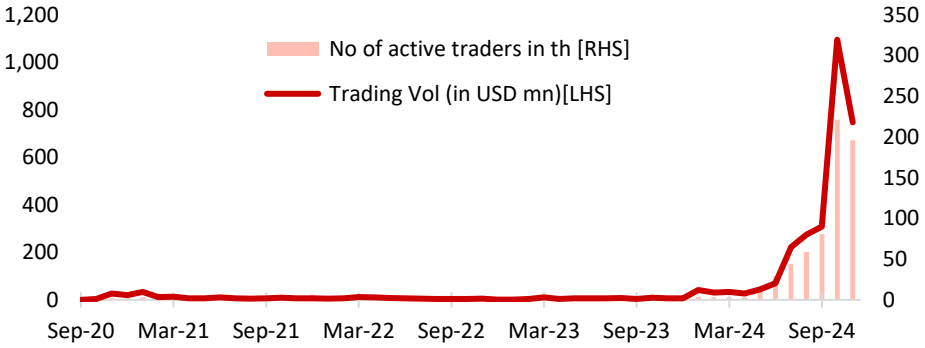
Odds of Trump presidency



Source: Polymarket, Kalshi, DBS

Being less subject to regulations and with the benefit of anonymity, decentralised markets have an advantage over traditional prediction markets in terms of reach. Indeed, Polymarket had shown consistently shorter odds of a Trump win compared to traditional prediction markets like Kalshi, which is a centralized financial exchange. The larger pool of participants and deeper liquidity may have given Polymarket a predictive edge.

Polymarket monthly active traders and trading volume



Source: Dune, DBS

Polymarket has exploded in popularity relative to its initial launch in 2020 during the previous US election. In the 2020 election, it recorded less than USD30m in monthly volume compared to a peak of over USD1bn in the 2024 election. In terms of user base, Polymarket also saw an exponential uptick from just 3k monthly active traders in 2020 to a peak of over 220k in the 2024 election. **Decentralized prediction markets have matured quickly, given their deeper liquidity in terms of trading volume, and their greater number of participants** compared to traditional prediction markets.

Beyond predicting political election outcome

Outside of politics, most of the trading volume in decentralized prediction markets is focused on sporting results and pop culture (e.g. top grossing movie of the year), which tend to be entertainment orientated. But there is potential for higher value-added predictions in decentralized markets, which could be used by governments to determine effective public policy (Bell, 2011) or to derive forecasts of climate (Roulston & Kaivanto, 2024). We believe the value proposition of decentralized prediction markets is high, and it may be one of the important, tangible use cases supporting the value of crypto.

The economic costs of Nakamoto trust

While decentralized markets have been successful, does it mean that traditional markets must evolve towards them? Many have celebrated the invention of the blockchain by Satoshi Nakamoto, which has brought about a new economic system that does not require the support of government or rule of law, or any traditional trust mechanisms. By a combination of cryptography and economic incentives, it is possible to give rise to a decentralized, permissionless consensus. But Budish (2024) argues that Nakamoto's form of trust, while ingenious, is deeply economically limited.

Using the zero-profits conditions on the quantity of honest blockchain "trust support" provided (whether by working or staking) given the costs and rewards, as well as the incentive compatibility condition that guarantees the system's security against majority attack, Budish derived an equilibrium constraint:

$$p_{block} > \frac{V_{attack}}{A^* \cdot t(A^*)}$$

p_{block} is the reward earned per block
V_{attack} is the value of an attack
A^* is the optimum attack quantity by working or staking
$t(A^*)$ is the expected duration of attack

Effectively, this means that the reward a blockchain must provide will have to scale linearly with the economic value associated with it. Indeed, this could be seen with the expansion of technological and energy costs for mining Bitcoin over time, as Bitcoin's value rises. Laptops could be used for mining in Bitcoin's earliest days but today, only the most sophisticated and dedicated hardware can achieve profitable mining. Thus, Budish argues that it is highly expensive to maintain Nakamoto trust-based systems over time, relative to the value that they provide. In contrast, traditional trust systems based on rule of law, reputation, relationships, and collateral only incur a fixed cost, and have negligible marginal costs as transactions scale up in value. Still, we believe that the decentralized nature of cryptocurrencies is highly attractive, and they should still occupy an important niche without displacing traditional trust systems.

Central Bank Digital Currencies (CBDCs)

Overview

The Atlantic Council's latest survey update showed that over 134 countries and currency unions, representing 98% of global GDP, were exploring e-currencies. Of these, 66 were in advanced phase of exploration, which including pilot runs, development, and eventual launch. Additionally, all G20 countries are exploring a CBDC, of which 13 are already in the pilot stage including Brazil, Japan, India, Australia, Russia, and Turkey. Notably key BRIC countries i.e. Brazil, Russia, India, China, and South Africa are piloting a CBDC, which comes at a time when countries are seeking to develop an alternate payments system to the dollar. China is still considered a frontrunner in this space in terms of development and pilot transactions.

IMF papers on CBDCs

In continuation to its work on CBDCs, the IMF targets to guide and support global policymakers in their CBDC explorations through a series of virtual handbooks, coupled with capacity development activities and surveillance work. The handbooks aim to reflect evolving experiences, findings, and policy views, with the publishing process first issued as a Fintech note and later incorporates the views of member countries.

Following the first set of virtual papers, a recent IMF staff paper "Central Bank Digital Currency: Progress and Considerations" (Patel et. al 2024) set the ball rolling on the second tranche of virtual chapters in 4Q24. These papers addressed important analytical and operational questions raised by central banks in their CBDC pilots/ explorations. Key questions that were addressed include, a) how to position CBDC vis-à-vis fast payment systems and e-money networks?; b) How can CBDC be resilient to cyber risks?; c) Will CBDCs be adopted; d) How to leverage CBDC data while preserving privacy?; e) Will CBDC interfere with monetary policy operations; f) How to design CBDC to help improve cross-border payments?

A recent survey by the BIS showed that the proportion of central banks exploring CBDCs had risen to 94%, with an increase in

experiments and pilots in 2023, surrounding wholesale CBDCs (wCBDC). On the retail CBDCs (rCBDC), the ECB for instance will progress from the first draft of the rulebook out in January 2024 to the next phase of an actual development and rollout of the digital euro in November 2025 at the earliest.

One of the virtual papers, "Positioning CBDC in the Payments Landscape" suggests that fast payment systems (FPSs), e-money networks, and CBDCs all provide similar efficiency gains for economies, with the main distinguishing value of the latter lies in its property as public money in a digitised world. While few of the payment systems might fall short in its usage, if designed properly and implemented along with the private sector, the CBDC systems are seen as providing a higher degree of interoperability of the payments landscape in an economy. As a plus, its exploration itself may also support research that develops interim improvements to existing systems and incentivize private sector innovation.

Table 1. Payment System Features

		CBDC SYSTEMS	Fast Payment Systems	E-Money Systems
Instrument	**Liabilities being transferred for end users (issuer)**	CBDC (central bank)	Commercial bank money or e-money (from private issuers)—the most common form is a "credit transfer"	E-money (of a specific private issuer)
Infrastructure and scheme	**Availability of funds to payee**	Instant	Instant (or near immediate)	Instant
	Settlement	Real-time gross settlement	Real-time gross settlement or deferred net settlement	Real-time "on us settlement"
	Risks in system	Operational and legal risks present. No credit risk. Liquidity risks may arise during funding and defunding	Operational, legal, credit, and liquidity risks present	Operational, legal, and credit risks present. Liquidity risks may arise during funding and defunding
	Ownership	Infrastructure and scheme likely owned by the central bank	Infrastructure and scheme could be public, private, or jointly owned	Infrastructure and scheme privately owned

Source: IMF Virtual paper

In contrast to private wallets or FPS, the central bank is likely the owner of both the infrastructure and scheme in case on CBDCs, with the extension of partnership and responsibilities of the public and private sector players contingent on the design choice. On grounds of financial inclusion and efficiency, all three systems are beneficial, with degrees of difference in implementation. CBDCs being a public good and without a profit objective, could also be specifically designed to cater to the underserved or underbanked population.

BIS

The Bank of International Settlements (BIS) plans to exit cross border payments platform Project mBridge, which it developed in collaboration with the central banks of China, Hong Kong, Thailand, and UAE in 2021. Saudi Arabia joined this initiative in June 2024. BIS General Manager Agustin Carstens was quoted saying that the agency oversaw catalysing innovation and preferred to step back when initiatives could be sustained by the other stakeholders. This comes in midst of speculation that the platform might have been explored as an avenue to address financial sanctions or could be tapped by the BRICS group, a view that the agency did not align with. Project mBridge reached the minimum viable product (MVP) stage in mid-2024. In BIS' views, the platform has not reached a stage where it could be operationalised and requires more development over the coming years.

China

After pilots at home, China has kickstarted a trial for cross-border payments using CBDCs with Saudi Arabia and other partners, to explore alternative uses for the digital yuan. Hong Kong, Thailand, and the UAE are other participants, besides IMF taking part as observers. Domestically, as of June 2024, total transaction volume of the e-CNY had reached CNY 7trn ($986bn) in 17 provincial regions across sectors such as education, healthcare, and tourism, 4x of June 2023. As of July 2024, the e-CNY app had attracted 180mn personal wallet users, with cumulative transactions of CNY 7.3trn in pilot areas according to Euromoney (2024). The digital CNY CBDC hardware wallet has also been upgraded, with the new cards provided being more 'touchable, visual and scannable'. This will allow users to touch the cards against a POS terminal, with QR code updates to display amount paid and remaining balance. Separately, Huawei mobile operating system will have an embedded e-CNY wallet option going forward.

Despite this strong performance, there is speculation that the domestic usage of the digital RMB has been flatlining, given the already advanced retail e-payments landscape in China, led by private wallet providers like WeChat Pay and Alipay. Market observers highlighted that eCNY not earning interest, as well as a lack of retail outlets accepting this mode of payment across the country, have dented enthusiasm towards this alternative currency option. While retail merchants saved on costs (no fees required to accept e-CNY), intermediaries such as payment institutions had not had the incentive to push for higher use of the e-currency.

Others

Bank of Korea formally announced plans to conduct a tokenized deposit trial in combination with a wholesale CBDc (wCBDC) for interbank settlement last year, which is expected to come to fruition. In essence, when a client transfers a token issued by one bank to a customer that banks with a different bank, there is a need for interbank settlement. That happens using a wCBDC. In November 2024, the BOK signed an agreement with the Ministry of Science and ICT and the Financial Services Commission (FSC) for the usability tests.

The Reserve Bank of Australia and the Treasury released a report in September 2024 summarising developments to date and setting out a three-year roadmap for future work on digital money. In its conclusion, the report highlights that is there is yet to be a clear public case to issue a rCBDC as residents are already well served by the capabilities of the current retail payment system. As part of the roadmap, subsequently, the RBA has launched a consultation on wCBDC and asset tokenization with the Digital Finance Cooperative Research Centre (DFCRC) to explore how different forms of digital money and associated infrastructure could support the development of wholesale tokenised asset markets in Australia. This paper seeks industry feedback on a new research initiative called Project Acacia.

The Reserve Bank of India Governor, in a speech, highlighted that the pilot exercise for rCBDC had over 5mn users and 16 participating banks. While the retail pilot started with initial use case of payments, currently both the offline and programmability functionalities are also being tested. One of the real time examples that was showcased

is the CBDC's ability to push for financial inclusion as well as programmable functionalities, such as the case of farmers getting purpose bound money through programmable CBDC for generation of carbon credits. Authorities are however in "not be in any rush to roll out system-wide CBDC" before receiving a comprehensive understanding of its impact on users, monetary policy, financial system and economy.

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