CRYPTO ASSETS: CRYPTOCURRENCIES, STABLECOINS, CBDCs AND NFTs

Think Ahead

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Cryptocurrencies

The first cryptocurrency, Bitcoin, was created in 2009 by 'Satoshi Nakamoto', a pseudonym for either a person or group of people. Today the value of Bitcoin in circulation is over $2 trillion and there are numerous other cryptocurrencies. So, what are they? 'A cryptocurrency is a digital currency in which transactions are verified and records maintained by a decentralized system using cryptography, rather than by a centralized authority'.[1] A key element in cryptocurrency is its decentralised nature. Cryptocurrencies run on blockchain technology, which can be thought of as a 'triple-entry' bookkeeping system. Every time there is a new transaction, the sender, the receiver and a third party must confirm and agree on the transaction. Every transaction is recorded in a triple-entry digital record called a 'blockchain' – and any transaction can be located on that digital record.

Transactions are verified and new coins created by a process known as mining. Miners verify transactions by solving a complex mathematical equation to arrive at a 64-digit code or 'hash'. The process is competitive: the first miner arriving at the correct solution is paid with an allocation of a block of new currency.

Cryptocurrencies are held in digital wallets on smartphone apps or computer hard drives. These are protected with passcodes: lost passcodes cannot be retrieved and the contents of the wallets are lost forever in such circumstances. Trading on cryptocurrency exchanges averages $150bn to $200bn a day, with Binance and Coinbase having the largest market shares (Statista 2022).

Many financial regulators consider that cryptocurrencies should be treated as assets rather than currencies. But even as assets they establish no claim on any future income streams or collateral. The Financial Policy Committee of the Bank of England argues that 'They have no intrinsic value beyond their currently limited potential to be adopted as money in the future, and hence could prove worthless' (Bank of England 2018).

Cryptocurrencies have been used as money – to exchange for goods and services – but only to a very limited extent. The most notable example is El Salvador, which in September 2021 made Bitcoin legal tender, along with the US dollar (Murray 2021). But cryptocurrencies fail one of the basic tests of the economist's definition of money – a store of value. Price volatility can be extreme. For example, the price of Bitcoin varied from under $30,000 to $68,000 over the course of 2021. By May 2022 Bitcoin had collapsed to below $30,000. This volatility makes cryptocurrencies inappropriate for widespread use as money. (But see 'Stablecoins' below.)

Despite this, cryptocurrencies do have advantages as a means of payment. Transactions can be done at any time, anywhere in the world between two people holding Bitcoin in, for example, digital wallets. Payments can also be made without being tied to personal information, eliminating the risk of identity theft. The open-source and decentralised nature of cryptocurrencies means that no third party can manipulate the system and anyone can verify transactions and the creation of new currency.

But cryptocurrencies have gained increasing recognition as an asset, notwithstanding the lack of underlying collateral. An important aspect of this is that there is a fixed supply of each cryptocurrency – there will never be more than 21 million Bitcoins, for example. This contrasts with national central banks, which can issue new currency theoretically without limit.

Crypto assets have gained a degree of acceptance by institutional investors, including hedge funds and portfolio managers (Buttonwood 2021). Cryptocurrencies can offer diversification benefits. Returns on cryptocurrencies are only very weakly correlated with those on other assets such as equities, bonds and real estate. Therefore, the risk-return trade-off of an investment portfolio can be improved by holding cryptocurrencies. Given the relatively short period over which crypto data is available, plus the lack of any method of fundamental valuation, this advantage has its limitations. But at present it does appear to be supporting demand for cryptocurrencies.

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1 From Google Dictionary supplied by Oxford Languages.

Future prospects

The market capitalisation of all cryptocurrencies currently exceeds US$2 trillion, suggesting they have gained a permanent place among asset classes. Nonetheless, their lack of intrinsic value and very probably extremely limited use as money means this is by no means certain. 'Crypto-mania' may yet prove to be the 21st century equivalent of Tulip-mania of the 17th century. The collapse of cryptocurrency Luna to zero, wiping out billions of dollars of value, often held by retail investors gives credence to this view. But at the same time crypto's recent acceptance by the institutional investment community as a diversifying asset indicates a potential role as a more permanent feature of the global financial system.

Regulation of cryptocurrencies is fragmented and incomplete at present, and future developments will affect the prospects of cryptocurrencies as a whole. In the US, Gary Gensler, chairman of the Securities and Exchange Commission (SEC), has described crypto assets generally as the 'Wild West of the financial system'. The SEC has proposed classifying cryptocurrencies as securities, which would entail rigorous reporting and disclosure requirements. Other US lawmakers argue that, instead, cryptocurrencies should be classified as either currencies or commodities (Stacey and Palma 2021). Over time, if regulation fails to address issues of consumer protection, then cryptocurrencies could lose their appeal to retail investors: if, for instance, a major cryptocurrency were to collapse.

Cryptocurrencies also have a serious image problem caused by the exceptionally large energy used in the creation of new coins. This arises because verifying transactions and earning new coins is a competitive process that involves a large number of computers racing to solve complex cryptographical puzzles. Only the winner is awarded with a new block of currency. For example, it is estimated that the Bitcoin network uses the same amount of energy in a year as Argentina (Reiff 2021). Innovation to reduce energy use may be necessary if cryptocurrencies are to prosper as the world seeks to move towards net zero carbon emissions.

Stablecoins

Stablecoins link the worlds of cryptocurrency and central bank fiat money in that they are digital tokens pegged to the value of another currency, often the US dollar, or a basket of currencies or gold. This dramatically reduces price volatility compared with cryptocurrencies such as Bitcoin. Indeed, the most popular stablecoins, Tether and USCoin, offer redemptions at one to one for the US dollar. Such price stability makes them suitable as a means of payment, which is their main attraction. The decentralised blockchain technology used for settlement allows stablecoins to offer fast, low cost and global payment transfers without the use of a costly intermediary (Adrian and Mancini-Griffoli 2019).

Stablecoins, the first of which was issued in 2014, have historically tended to be used mainly as a means of buying cryptocurrencies. Their profile was greatly enhanced in 2019 when Facebook announced its intention of launching a stablecoin, Libra, backed by a basket of currencies that included the US dollar and the euro. The resulting criticism and regulatory concern resulted in a redesign that involves separate stablecoins, each backed by an individual currency. Renamed Diem, the project has yet to be launched. More recently, there has been a surge in the amount of stablecoins in issue: their value rose from $21.5bn in October 2020 to over $120bn 12 months later.

Future prospects

Stablecoins can be used as efficient non-bank means of payment, which suggests they are likely to grow in importance in coming years. Their very usefulness has raised regulatory concerns, however, with respect to both consumer protection and financial stability.

The stability of stablecoin rests on the holding by their issuers of sufficient assets and collateral that would allow redemption of the coins for cash. But the quality and quantity of such assets may not be transparent and inadequate funding could undermine consumer protection. In October 2021, Tether, the longest-established stablecoin, was fined $41m by the US Commodity Futures Trading Commission (CFTC) for claiming it was fully backed by US dollars (Palma and Stafford 2021).Then in May 2022 Tether briefly fell below $1 to 95.1 cents following heavy redemptions in the wake of the failure of a smaller stablecoin rival, TerraUSD. In addition, failure to redeem a stablecoin could result in a rush of redemptions similar to a bank run as holders sought to sell coins for cash and this in turn could result in wider damage to the financial system and financial stability.

In coming years, a greater degree of regulation of stablecoins looks inevitable. In the US, a report on stablecoins by the President's Working Group on Financial Markets (2021) calls for urgent action on regulation. A major recommendation is for stablecoin issuers to be classified as 'insured depository institutions' (ie, like banks) and be subject to oversight on that basis. This would require regular and full disclosure of the reserve assets used to back each stablecoin issue. A further recommendation is that stablecoins should be subject to restrictions that limit affiliation with commercial activities – perhaps best summarised as addressing the Facebook issue. Meanwhile, the Bank of England has also expressed the view that, like commercial banks, stablecoin issuers are effectively engaged in the creation of private money and should be regulated accordingly.

But a greater existential threat to the continued growth and spread of the use of stablecoins is the prospect of another development: central bank digital currencies.

Central bank digital currencies (CBDCs)

The advent of stablecoins threatens the sovereignty of central banks over money issue and potentially over monetary policy too. The chairman of the US Federal Reserve, Jay Powell, recently admitted that the concept of Facebook's Libra project 'lit a fire' under central bankers, impelling them to consider CBDCs (Massad 2021).

Unlike cryptocurrencies or stablecoins, CBDCs are not created or issued by the private sector. Instead, CBDCs are digital versions of the physical notes and coins issued by central banks and they would therefore have the same central bank guarantee for their value. Hence, CBDCs would be safe in times of financial crisis.

The use of physical cash (notes and coins) in developed economies has declined in recent years and the trend was given a significant boost by the start of the COVID pandemic in early 2020. But the proposed CBDCs are intended to exist alongside physical cash rather than replace it. CBDCs can – like stablecoins – provide an efficient, low-cost payments system using blockchain technology – with a government guarantee. A CBDC could also boost financial inclusion by offering a safe and liquid government-backed means of payment to the public that requires a smartphone with a digital wallet but not a bank account. In many emerging markets, especially, digital wallets have much greater penetration than bank accounts. CBDCs may also offer policy advantages by establishing a direct depository link between the central bank on one hand and households and companies on the other. This would enable immediate and low-cost transfer of funds to support incomes during a severe recession, such as occurred at the onset of the COVID pandemic. CBDCs may also permit the application of negative policy interest rates, although this would depend on the amount of cash in circulation.

But CBDCs have potentially significant implications elsewhere in the financial system, many of which could be undesirable. First, they would likely undermine the stablecoin ecosystem described above, which has been an innovative private sector development. Moreover, by offering digital deposits that are 100% government guaranteed, CBDCs could draw deposits away from commercial banks. This could then result in a reduced supply of private sector credit, since bank deposits are the key counterpart to private sector credit creation. At the very least, it would result in higher interest rates on loans as banks had to rely on more expensive sources of funding than retail deposits. In addition, during a financial crisis, fears about the viability of the commercial banking system could trigger a sudden and large transfer of deposits from banks into CBDC deposits, thereby exacerbating the crisis.

Future prospects

While many central banks are researching the idea of introducing a CBDC, very few have actually done so. One of the few countries with a fully deployed CBDC is the Bahamas, where the Sand Dollar was launched in 2020, as a collaboration between the central bank, payment card group Mastercard and digital payments platform Island Pay (Venkataramakrishnan 2021). In addition, China is running pilots of an e-yuan digital currency in some major cities, and the Riksbank in Sweden is also trialling a pilot e-krona in collaboration with a large commercial bank. Among other major central banks, the Bank of England and the European Central Bank have both launched major studies and consultations into the feasibility of introducing a CBDC (Bank of England 2021; European Central Bank 2022). Neither has yet taken a final decision on introducing a CBDC and, for both, the earliest possible date to launch a digital currency is the second half of the decade. Meanwhile, the US Federal Reserve launched a consultation on a digital dollar in January 2022 with publication of a paper (originally scheduled for June 2021) (Federal Reserve 2022). In addition to domestic considerations there could be wider international implications of a digital dollar, since the US dollar is the dominant reserve currency. A widely available digital dollar could result in more 'dollarisation' – the replacement of national currencies with the US dollar in countries with high and variable rates of inflation.

Over the next few years, no jurisdiction among the US, UK or euro area will see the launch of a CBDC, but substantial progress on its development is likely. In the long term, it looks inevitable that CBDCs will become standard central bank currency issue, ultimately replacing physical cash.

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Non-fungible tokens (NFTs)

NFTs are digital tokens that represent an image, video or other item. Like cryptocurrencies, NFTs are recorded using blockchain technology. But while cryptocurrencies are fungible – one Bitcoin is worth exactly the same as another Bitcoin at a given time – NFTs are not fungible: each NFT is unique and held in a single digital wallet which gives the name of the NFT and a link to the digital item concerned. The item can be downloaded and copied by anyone but ownership of the original is recorded on open blockchain technology.

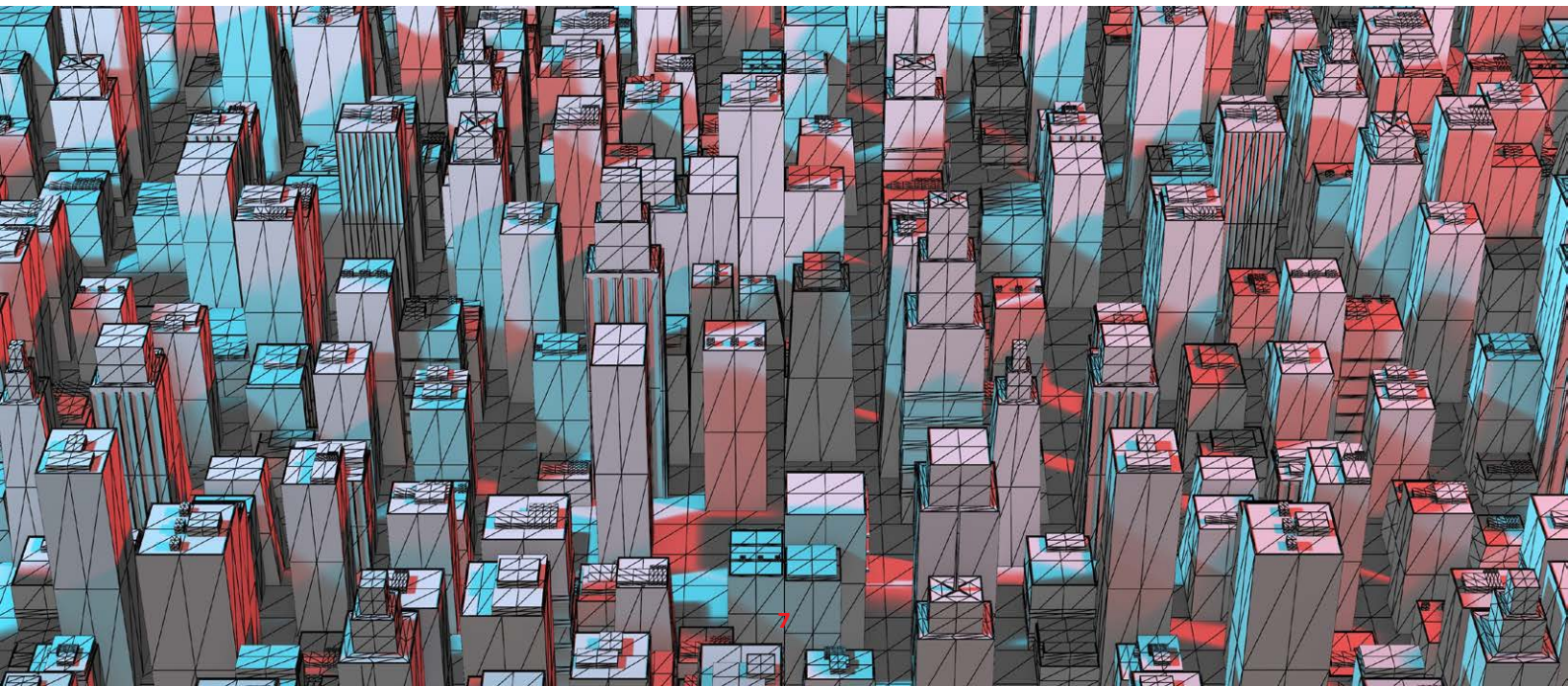
NFTs are the most recent crypto innovation, first being created in 2015. They are issued and traded on digital platforms such as Foundation or OpenSea, with prices quoted and transactions conducted in cryptocurrency. Total NFT trading reached $5.9bn in the third quarter of 2021, up from just $782m in the first quarter of the year (Bradshaw 2021). To date the number of active NFT traders is relatively small, concentrated among crypto-millionaires and celebrities.

An area where NFTs have begun to have an impact is the digital art market. In March 2021 the artist known as Beeple sold an NFT called The First 5000 Days for $69.3m (Economist 2021). A big advantage is that the blockchain technology in NFTs allows smart contracts to be included. So, for example, an artist can include a contract to receive royalties on any future sales of the original work. The use of blockchain ensures that such contracts are completed automatically at negligible cost, something that would not be possible in the 'real' world. This feature also enables musicians and high-profile sports stars to attach exclusive content to NFTs such as front-row seats at events – without the need for an intermediary.

Future prospects

NFTs are likely to gain traction in certain areas already discussed: in the arts and among sports and other celebrities. But they also have the potential for a profound effect on financial markets. By using decentralised networks based on blockchain NFTs, trust can be established between counterparties to a transaction, without the need for an intermediary (Schiener 2021). One of the key reasons intermediaries exist is to enable two counterparties to place trust in a transaction or investment and, of course, intermediaries add to the cost of transactions. NFTs, as well as eliminating the cost of intermediation, can also speed up transactions and be available at all times. One area already being explored is the possibility of using NFTs in property transactions (NFTs can represent ownership of physical assets, with mortgage contracts attached to the NFT).

There are questions about the scalability of NFTs and their development may be hindered by a competitive response from intermediaries and payments operators. But NFTs almost certainly have a long-term future given their advantages. Even so, as with cryptocurrencies, a lot depends on the regulatory environment (Noonan 2021). NFTs may lose their attractiveness if they become standardised, regulated products, since their attraction is their flexibility. But alternatively, regulation may also address security issues through know-your-customer rules, thereby promoting greater confidence in the digital asset and enabling its wider use. There are concerns at present that NFTs are especially prone to speculation since they are one of few assets that can be traded directly using cryptocurrency. This also raises concern about their use for illegal activities, such as money laundering. The right balance of regulation will be crucial for NFTs' continued growth – providing investor protection without stifling innovation.



Digital assets and the **chief financial officer**

Digital assets have the potential to significantly alter the daily activities of chief financial officers (CFOs), who need to monitor developments in this area closely. Below is a summary of the current situation.

The volatility in the price of cryptocurrencies means that CFOs are very unlikely to hold them as a corporate asset. A 2021 survey by Gartner showed that only 5% of finance executives planned to hold Bitcoins as a corporate asset in that year. Moreover, 84% said they planned never to do so. The main reason for this was the financial risk caused by the volatility in the price of Bitcoins (Meulen v.d. 2021).

Nonetheless, while holding cryptocurrencies as an asset may not be advisable, CFOs may consider accepting them as payment for goods and services. An argument for accepting them is that it may attract new customers and sales. A small US-based study found that 'up to 40% of customers paying with crypto are new to the merchant' and purchase amounts 'are twice that of those made with credit cards' (Businesswire 2020). CFOs may consider a 'hands-off' approach, simply converting in and out of crypto into fiat currency to make or receive payments without actually touching crypto. This can be achieved by paying a third-party vendor to act as an agent for the company, dealing with all the technical and regulatory issues.

Stablecoins have the potential for making cross-border payments instantaneously and at any time of day, seven days a week – an advantage over using the commercial banking system. This is clearly a possible benefit to CFOs – and, of course, stablecoins are stable in the sense they are fixed in value against another fiat currency or a basket of such currencies. But the regulatory and disclosure requirements relating to stablecoins need to be monitored very closely, as some jurisdictions treat them similarly to cryptocurrencies, where requirements may be quite onerous.

As discussed above, CBDCs are several years away from being introduced in most jurisdictions. How CFOs should respond to them will depend to some extent on the exact design and structure of each CBDC. But the common characteristic of all CBDCs is that they are the liability of the state and therefore guaranteed in a way that private money in the form of the liabilities of commercial banks are not. CBDCs, if they are introduced, will form part of the working capital of companies, similar to the role played historically by cash. A key difference with cash is that, in certain circumstances, a CBDC may enable the implementation of negative interest rates on deposits.

Finally, NFTs, the most recent innovation in digital assets, are probably also at the monitoring stage of development for CFOs. Their potential for removing intermediaries from certain areas of capital markets can bring cost reduction benefits. But NFTs are at an early, speculative stage and closely associated with cryptocurrencies. Regulatory developments are very uncertain.

In brief, CFOs need to keep abreast of developments across the range of digital assets, including the evolving regulatory environment. Over time, some digital assets will become an essential part of CFO operations. But at present their relatively early stage of development and, in many cases, speculative nature suggests they should be treated with caution by the custodians of a company's finances.

OVER TIME, SOME DIGITAL ASSETS WILL BECOME AN ESSENTIAL PART OF CFO OPERATIONS. BUT AT PRESENT THEIR RELATIVELY EARLY STAGE OF DEVELOPMENT AND, IN MANY CASES, SPECULATIVE NATURE SUGGESTS THEY SHOULD BE TREATED WITH CAUTION BY THE CUSTODIANS OF A COMPANY'S FINANCES.

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