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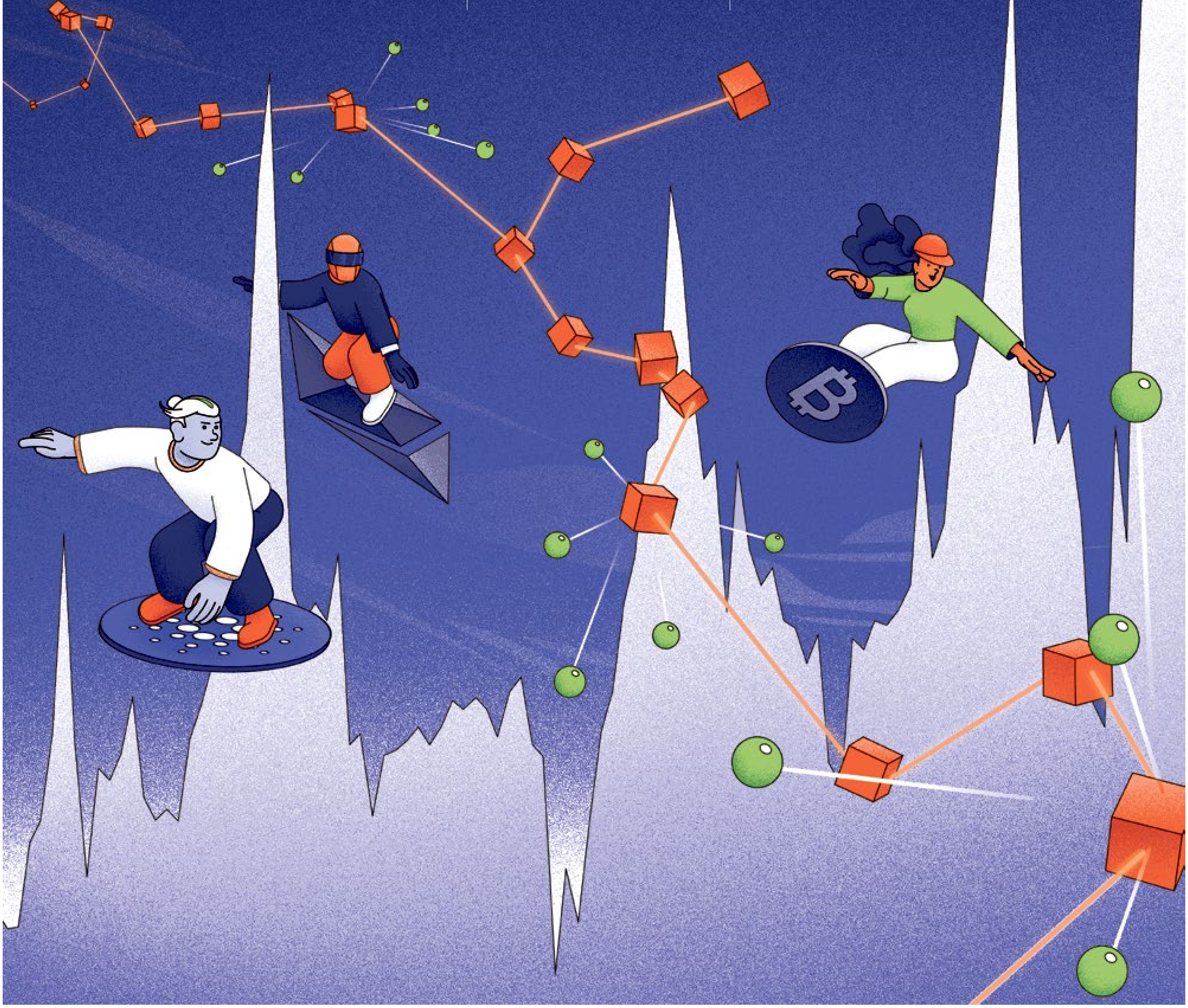
CRYPTOCURRENCIES



CRYPTOCURRENCIES

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POLICY

Watchdogs struggle to corral elusive crypto asset markets

The authorities have yet to come up with a coordinated approach to tackling what one international monitoring body already deems 'a threat to global financial stability'

Jeff Salway

Global regulatory authorities are not in the habit of issuing stern warnings that a class of assets is putting the entire financial system in jeopardy. Wary of the unintended consequences of their caution, they avoid sounding the alarm bell if at all possible. But, when it comes to crypto, such statements are becoming more familiar.

Many central banks and regulators have grown uncomfortable about developments in the crypto universe and the rate at which crypto assets are growing. In February, the Financial Stability Board (FSB) joined the chorus of international bodies worried about the direction in which these markets might go. It claimed that they "could reach a point where they represent a threat to global financial stability" unless there is effective regulatory action.

The Bank of England, the UK's Financial Conduct Authority (FCA), the Bank for International Settlements and the US Federal Reserve are among others to have expressed similar concerns in recent months. But what exactly is the threat and why are policy-makers so worried?

The fast-growing crypto assets ecosystem is home to a vast range of assets with varied and often complex underlying technologies and governance characteristics.

The FCA defines crypto assets as "a cryptographically secured digital representation of value or contractual rights that is powered by forms of distributed-ledger technology and can be stored, transferred or traded electronically".

At its most basic, a cryptocurrency (such as bitcoin, which was minted in 2009) becomes an asset once it can be traded by investors. There are thousands of different crypto assets, including exchange tokens, utility tokens, security tokens and non-fungible tokens (NFTs). NFTs have gained popularity particularly quickly, hitting the headlines several times over the past 12 months.

Michael Dunning via Getty Images

The rate at which this ecosystem is evolving is a source of fascination and promise for many people. But it's a source of headaches for those responsible for international financial oversight and regulation.

What exactly constitutes a crypto asset? Which of these assets should be defined as securities? Who can create or issue them? Do investors understand how they work, let alone the risks? Where should the regulatory focus be? These are just some of the many questions occupying the minds of regulators.

Viewed in purely financial terms, the total market for crypto assets is not especially large. Its capitalisation increased to \$2.6tn (£1.9tn) in 2021, according to the FSB. But it explained in its February statement that crypto assets markets are a risk because of their blend of "scale, structural vulnerabilities and increasing interconnectedness with the traditional financial system". The nature of these markets creates potential for regulatory gaps, fragmentation or arbitrage, the board argued, adding that any stability risks could escalate quickly.

Although there have been bouts of severe price volatility in crypto markets, these have not yet affected traditional financial markets, not least because crypto assets aren't used widely in real-world financial services (such as payments). And they operate largely outside financial regulatory ambits. But, given the speed at which these assets are evolving, their knock-on effects could soon change.

> **As crypto values grow, so do fears of a corrective market adjustment that could create a wider economic shock**

Crypto assets are in many ways digital versions of traditional financial assets and are vulnerable to similar risks, but the anonymity of crypto transactions and the speed at which they are processed could produce more damaging outcomes. Those risks are exacerbated by factors such as a lack of understanding of crypto assets among consumers, according to the FSB. Its statement came only weeks after the Bank of England flagged cryptocurrencies as a potential systemic risk to financial stability in the UK.

And the International Monetary Fund warned that many entities in the crypto universe were lacking "strong operational, governance and risk practices". It referred to consumer protection risks arising from inadequate disclosure and oversight, plus the potential for the anonymity factor to "open unwanted doors for money-laundering".

Crypto assets are ascending the regulatory agenda as their rate of adoption and growing presence in retail and institutional investment portfolios moves them ever closer to other asset types.

The level of the threat to stability depends on the extent to which the traditional financial system is exposed to the crypto system, according to Andrew Henderson, a partner in the financial services regulation team at law firm Macfarlanes.

"For example, if investment and pension funds, insurance companies and banks were to hold crypto positions for investment or capital management purposes and there is a crash in the value of those assets, they would suffer," he says. "The other factor is volatility, driven

£2.2tn

The market capitalisation of crypto assets in November 2021 – a record high for the market

Statista, 2022

by the high number of speculators, which is one of the characteristics of an immature market."

That factor has been amplified by the extent to which the media and politicians have focused on cryptocurrencies – most notably, bitcoin – that aren't asset-backed. Demand has been fuelled to a significant degree by gamification and social media influencers, who have also shown how volatile valuations can be, says Rachel Waggott, head of regulatory affairs at Innovate Finance.

"It is these cryptocurrencies that regulators have focused on in terms of stability," she says. "As their values grow, so do fears of a corrective market adjustment that could create a wider economic shock."

The perceived threat should, in theory, diminish as the market matures and becomes better understood by investors and authorities. It's not unusual for innovation in new asset classes and financial instruments to cause consternation among regulators. The evolution of digital assets is still at a relatively early stage.

"What normally follows, as general understanding of such instruments improves, is that regulators become increasingly at ease and focus on consumer protection and minimising abuse of the system," says Heidi Pease, head of investment products at Wave Financial, a digital asset investment manager.

Several other issues link crypto assets directly or indirectly to financial stability. Most recently, the Russian invasion of Ukraine has further highlighted the problems in fully understanding what the rise of crypto means for global finance and security. There have been signs that cryptocurrencies including bitcoin are being used in Russia as an alternative to traditional finance, potentially undermining the impact of economic sanctions.

Similarly, the FSB and other bodies have noted that the pseudonymous nature of cryptocurrencies (crypto wallets can be held in fake names) makes them a popular way of laundering the proceeds of crime. Crypto criminals held $11bn-worth of crypto assets by the end of 2021, up from $3bn the previous year, according to Chainalysis.

Meanwhile, the issue of consumer protection becomes ever more important as the growth in popularity of crypto assets increases the market's exposure to the real economy. The FCA estimated in 2021 that nearly 80% of UK adults had heard of cryptocurrencies and about 2.3 million Britons owned some form of crypto asset. At the same time, it found that the level of understanding of the market among consumers was declining, which suggested that many people were investing in assets they knew little about.

The task of ensuring the effective oversight of crypto assets markets is complicated by a lack of clarity as to what exactly needs regulating and who should be responsible for doing it. It's no surprise, given the vast array of assets under the crypto umbrella, that the task of regulating them falls to a similarly dizzying range of organisations.

Crypto is not alone in this respect. Fintech companies, for instance, must deal with a variety of UK regulators and quasi-regulators, including the FCA, the Prudential Regulation Authority (PRA), the Payment Systems Regulator and various government departments.

"There is a tendency to lack a coherent national strategy across these bodies," Pease says. "A joined-up approach is needed. It requires clear direction from HM Treasury and a cohesive approach from the Bank of England, the PRA, the FCA and HM Revenue & Customs."

The effectiveness of national approaches is further undermined by the fluid cross-border, cross-sector nature of crypto assets, with the contrasting approaches of different regulatory authorities adding to this fragmentation.

Rufus Round, CEO of digital asset broker GlobalBlock, notes that some jurisdictions, including Gibraltar and Switzerland, were quick to set up dedicated regulatory bodies.

"They have had protections and regulations in place for some time now, allowing many crypto asset companies to comply with stringent money-laundering rules," he says.

Similarly, the new Dubai Virtual Assets Regulatory Authority will have oversight of the sale of virtual assets and tokens, as well as responsibility for regulation and authorising virtual asset service providers.

Elsewhere, though, the picture is different, as global authorities are operating at varying speeds. In the EU, the proposed markets in crypto assets bill (Mica) – which aims to tighten regulation to achieve a more uniform approach on the Continent – is proceeding slowly but surely, with potential to form the basis of a global approach.

Mica focuses mainly on different types of stablecoins (digital currencies linked to assets such as the dollar, the euro and gold) and cryptocurrency exchanges. A proposal to ban energy-intensive 'proof-of-work' digital currencies such as bitcoin because of their ecological impact was removed from the bill in March, albeit with potential for it to be restored.

"Both the US and the EU financial regulators have already signalled that legislation to regulate crypto in the coming years will focus mostly on exchanges and stablecoins," observes Mikkel Mørch, executive director at ARK36, a crypto-digital asset hedge fund. "For example, by providing strict guidelines defining the entities that can issue stablecoins, as well as rules on how these cryptocurrencies should be pegged to the underlying assets, regulators will be able to greatly limit the risks mentioned by the FSB."

While the UK's strategy largely aligns with that of the EU, the US has several agencies taking different approaches to the challenge. The Securities and Exchange Commission, for instance, is concerned that the crypto assets it considers to be securities should be subject to robust regulation. By contrast, the Department of the Treasury is more interested in ensuring financial stability and combating crimes such as money-laundering.

Again, progress here is slow but steady. President Biden recently signed an executive order on digital assets that requires the relevant agencies to examine the regulatory landscape for crypto.

Pease believes that "many major regulators are waiting to see what the world's biggest capital market does to better contextualise their approach. As the US more clearly defines its approach towards pure crypto exchange-traded funds, for example, we will see other major markets follow."

Japan, seen as relatively friendly towards crypto, recognises bitcoin and other digital currencies as legal tender. But it has responded to concerns about the potentially nefarious use of stablecoins with proposals to introduce a registration system for intermediaries providing crypto asset trading services.

China, by contrast, takes a much stricter approach. Cryptocurrencies aren't considered legal tender here. Last year Beijing banned all virtual currency trading and speculation, tagging crypto-related business as "illegal financial activities".

The lack of coordination across borders creates potential for regulatory arbitrage, as crypto businesses are able to exploit differences between regimes, according to Round.

"Poorly led regulatory regimes are seeing incumbents move operations to more proactive jurisdictions, maintaining their bases wherever they go, should frameworks change or catch up," he says.

The contrast in global approaches illustrates the difficulty of striking a balance between promoting innovation and managing the risks posed by crypto as an asset class.

"The regulatory focus has tended to be on managing risks associated with speculative cryptocurrencies, rather than on enabling innovation in payments and in capital markets," according to Waggott.

A more balanced approach, she says, would feature better consumer protection in speculative crypto markets, a framework for stablecoins that provides consumer and market trust, and a central bank digital currency that complements a vibrant stablecoin market.

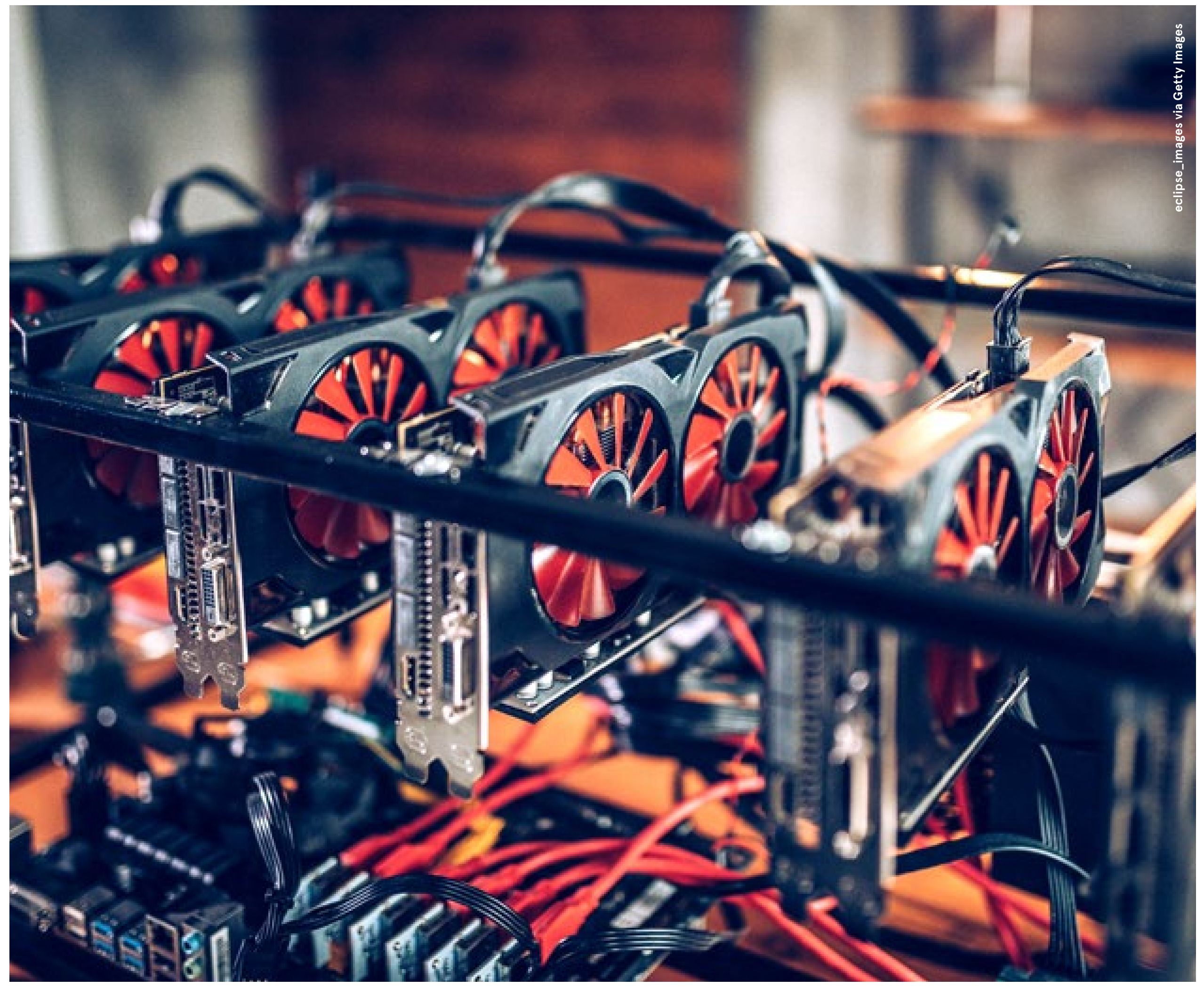
An obvious starting point from a stability perspective is protection against money-laundering. "This means tracing the source of capital and ensuring that sanctioned capital doesn't get introduced back into the financial system via crypto," Pease says.

Similarly, there are calls for minimum technology standards to ensure operational resilience, reducing the risk of system failures.

But any threat posed by crypto assets to international financial stability will best be mitigated by greater cross-border coordination.

"Since the 2007-08 crisis, international coordination for financial stability has been central to banking regulation," Henderson says. "Crypto regulation is a natural extension of this and the signs are positive – albeit that, as has been the case historically with financial crises, a crypto crisis may be difficult to detect."

Regulators are not alone in struggling to keep abreast of innovations in this fast-moving market. While some are seeking to embrace digital innovation in general, others are taking a much stricter, reactionary line. But, as the entwinement of crypto and traditional financial systems continues, and the potential ramifications for financial stability worsen, the fragmentation of global and national oversight will become ever more exposed.



eclipse_images via Getty Images

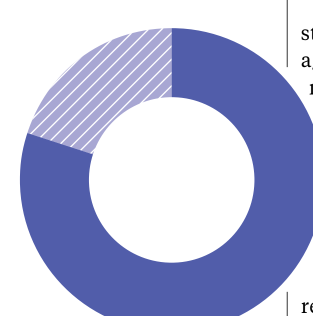
£27bn

The 24-hour trading volume of the world's three largest crypto exchanges on 21 March 2022

CoinMarketCap, 2022

80%

of retail, grocery and luxury goods merchants are willing to accept cryptocurrencies



LinkedIn, 2022

> "The regulatory focus has tended to be on managing risks associated with speculative cryptocurrencies, rather than on enabling innovation in payments and in capital markets

Commercial feature

Solving the ever-growing need for computing power

How decentralised blockchain network solutions are powering the metaverse and the future of technology

Technology is moving faster than ever in today's increasingly digitally interconnected world. One of the biggest enablers of this is artificial intelligence and machine learning.

This cutting-edge technology is driving the development of a host of new applications that run on blockchain and use smart contracts such as decentralised finance (DeFi). Blockchain alone has already been widely adopted in a range of industries, from banking and financial services to healthcare, with a growing number of uses.

Then there is the metaverse: a virtual reality where users can interact, play online games and experience new and different activities. It's fuelled by cryptocurrency and non-fungible tokens (NFTs), which are used to buy digital assets ranging from gaming cards to art and real estate.

However, for users to experience this new technology seamlessly, a huge amount of computational power is needed. Yet, there is also a surplus of hardware that is unused 60% of the time.

But there is a solution. Blockchain expert Cudos is set to launch the mainnet (an independent blockchain running its own network with its own technology and protocol) of a new interoperable Layer 1 blockchain network in the coming months, which brings together all of these worlds of DeFi, NFTs and online gaming. It will be easy to use, affordable, fully transparent and secure.

When completed, the new solution will run using its own native Cudos token and will power WEB3 projects with decentralised cloud-based solutions. Ultimately, it will provide a fully scalable, sustainable and interconnected network for developers, validators and entrepreneurs.

By matching up the ever-growing demand for and supply of high-performance computing power, the network will enable individuals and entities with surplus capacity to get paid for providing computing power, which then gets put into a large global, central pool. This will allow users who, for example, may be running a rendering job or a machine learning algorithm, to access the power they need to perform their work much cheaper than hyper-scale centralised providers.

"We have seen that the nature of the functionality in other blockchains has been limited by the computational power available," says Matt Hawkins, founder and CEO of Cudos. "For example, many DeFi and NFT products, such as generative NFTs, have had to be stored off-chain, but because of our more advanced capabilities, we're able to do everything more effectively on-chain."

Another problem is the high gas fees users have to pay for the computing power required to process and validate transactions on the Ethereum blockchain. This is due to the huge energy consumption used in mining under Ethereum's existing proof-of-work mechanism.

However, the more efficient delegated proof-of-stake model Cudos employs will offer lower gas fees compared to other Layer 1 networks. That's because the new model will allow it to process thousands of transactions per second.

Another challenge is that while many blockchain solutions have been established to support smart contracts, they are still in their relative infancy in terms of capability. That means users are limited in the number of applications they can adopt them for.

But with the Cudos solution, the platform will leverage its computing network to enable more complex smart contracts to be built and run than can currently be done on popular platforms such as Ethereum. It will also use the Rust programming language, which is easier to use for those who aren't so familiar with blockchain.

Cudos has been developing its new network over the last 12 months. During that time, it has been using several testnets (an alternative blockchain used for testing) by incentivising various stakeholders, including its community of developers, validators and delegators. Tasks include deploying smart contracts, using Cosmos' Gravity Bridge, minting and transferring NFTs.

The process has involved various moving components, including all of the validators coming online at the same time and migrating their tokens from ERC-20 Ethereum tokens to the native chain. As the backbone of the blockchain, Cudos provides security for validator deposits, and enables slashing and governance voting. Once all dependency tasks, including security patching and its phase four testnet, have been completed, it will be ready to go live.

The company plans to launch the mainnet later in the year. It will add additional functionality as the product develops over time. "Initially, we want to provide developers, validators and token holders with a fully decentralised network solution," says Hawkins. "But we'll be looking to add more meat to the bones as it develops in the future in terms of how they will be able to interface with it."

Cudos's blockchain is built on Cosmos, an ecosystem of interconnected apps and services. Its inter-blockchain communication protocol enables the transfer of tokens, assets, NFTs and data to and from other blockchains.

Focused on reducing entry barriers for developers to build decentralised apps, its blockchain is designed to enable them to add to its limitless network. Its decentralised cloud infrastructure is distributed among millions of people globally to facilitate this.

This decentralised cloud computing solution called Cudo Compute allows for peer-to-peer sharing of computing resources across the world. This prevents the need for hyper-scale data centres and utilises idle computing power, which may otherwise become environmentally damaging e-waste.

If technology continues to evolve at its current breakneck speed, blockchain networks such as Cudos will have a crucial role. Meeting the ever-growing need for computing power is only the start in a 'metaverse' of new and exciting opportunities.

> "We have seen that the nature of the functionality in other blockchains has been limited by the computational power available. For example, many DeFi and NFT products, such as generative NFTs, have had to be stored off-chain

KNOWLEDGE

Don't believe the crypto bros

You can read a lot about cryptocurrencies on blogs and social networks, but make sure that you don't get sucked in by all the hype that's being peddled. Experts reveal some of the most widely circulated misconceptions in this field – from the belief that blockchains are invulnerable to the notion that a crypto investment is likely to deliver big profits

Marianne Curphey

1 All cryptocurrencies are the same thing in essence

There are about 18,000 cryptocurrencies and 300 million crypto users around the world. The term 'cryptocurrency' is used to describe a wide variety of coins, systems and networks, many of which have different characteristics, ownership structures and levels of volatility.

"One of the key misconceptions in the mainstream media – and, as a result, in popular understanding – is that bitcoin and crypto are one and the same. This is far from the case in reality," observes Julian Liniger, co-founder and CEO of Relai, a bitcoin investing app. "The fact is that bitcoin has been around for several years, whereas the wider crypto world is very much in its infancy. To put it into perspective, other cryptocurrencies are startups in comparison – and should be treated as such by investors."

He suggests that before investing in a cryptocurrency you should look closely at the industry landscape; make sure that you understand it; and research the background of the founders, their past projects and the experience they have accumulated in the sector. In effect, you should approach a crypto investment as if you were thinking about putting your hard-earned money into a fledgling company.

"Ask yourself the question: is this project going to solve a problem that actually needs solving, or is it just hype?" Liniger advises.

> "Bitcoin has been around for several years. Other cryptocurrencies are startups in comparison – and should be treated as such

2 High returns are likely

Crypto is not a one-way street to riches. The myth has been perpetuated by enthusiastic male crypto investors (known as 'crypto bros'), threads on Reddit and posts by social media influencers.

"The second misconception that really needs addressing is this get-rich-quick myth," Liniger says. "Owing to the dominance of the crypto bro narrative, bitcoin has this lingering reputation as an all-or-nothing asset class that bullish investors pursue in order to double their money – essentially a gambling exercise."

Jeremy Eng-Tuck Cheah, associate professor in decentralised finance at Nottingham Business School, says that it's a commonly held misconception that everyone involved in crypto will make money.

"Crypto trading, like all other trading, is a zero-sum game. You make money at the expense of other people," he stresses.

There is also a misconception that crypto mining is a quick way to get wealthy, Cheah adds. "The set-up (entry) cost can be very high. Mining for cryptos is expensive business, so not everyone with a laptop can just start doing it. The algorithm underlying this process requires greater computing power as more cryptos are mined."

3 All stablecoins are backed by dollars

Given the volatility of bitcoin and other cryptocurrencies, demand has grown for products that have some of the positive aspects of crypto without the swings in value that put a lot of investors off.

Stablecoins were developed to combine the convenience and speed of digital payment systems with the stability of traditional financial transactions. They offer a digital currency alternative to crypto and are designed to have limited price fluctuations. Some stablecoins are linked to traditional (government-issued, or fiat) currencies such as the dollar, the euro and the yen, and are priced on a one-to-one basis. Others are backed by gold or other commodities that exist in the physical world, such as property.

This has led to the perception that all stablecoins are tethered to a real-world asset. But this is not the case, according to Cheah.

"Not all stablecoins are backed by fiat currency or precious commodities. Instead, they use some kind of algorithm mechanism," he says.

The stablecoins in these examples maintain their price stability via algorithms that reduce or increase supply in the market to match demand. If the price is rising, for instance, more stablecoins will automatically be released on to the market to dampen volatility.

4 Blockchain is safe and secure

The misconception that blockchain is bulletproof comes from investors' understanding that a large ledger of data held in a block cannot be altered or tampered with retrospectively. A blockchain system creates a database that is secure and held by a multitude of users, rather than a single third party. Yet this does not mean that the technology is immune to sophisticated and concerted attacks.

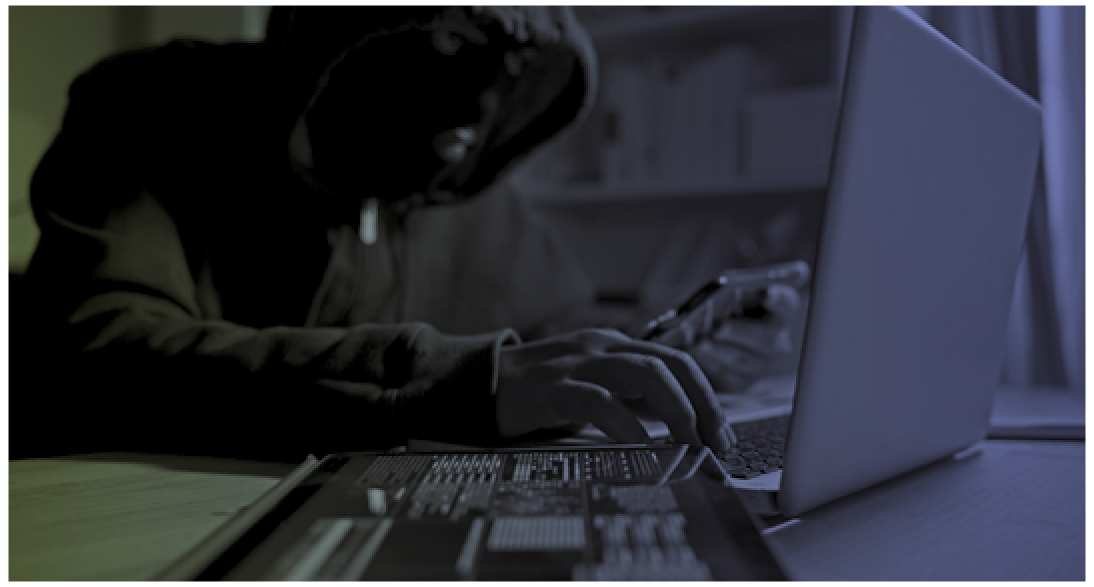
"It is a commonly held view that blockchain technology is safe," Cheah says. "Although is true that transactions held and written into the blockchain cannot be changed or erased, attacks on blockchains can happen and succeed. For example, for the blockchain to remain secure, validation by users is crucial. But, if the majority of users are being held by the attacker, the attacker can maliciously influence the verification process."

Such an attack might take place if hackers succeed in creating numerous fake identities, or by massing resources and taking control of more than half of the network.

The other source of vulnerability is the risk of human error. There is still an element of the Wild West in the crypto landscape, according to Sanjay Wadhwani, founder and CEO of MetaFrames, a blockchain media company.

"Investors are making big mistakes in the way they are interacting with blockchains," he observes. "They fall victim to phishing, they give away the keys to their wallet and they don't always understand the platforms."

Wadhwani continues: "There are plenty of bad actors out there who are peddling get-rich-quick schemes. They're preying on people's fear of missing out. It is important always to know who is behind the crypto or exchange you are using. A lot of launches are faceless and nameless."



5 Crypto is anonymous

While some cryptocurrencies are designed with privacy at their core, these are not usually the type used by retail investors, Wadhwani says.

"It is a misconception that crypto is predominantly used for illicit, nefarious and dark purposes," he notes. "There once was a time when the early adopters were using it on the dark web, but it is like saying that the mobile phone system is corrupt because it's being used by 1% of people for criminal purposes. A lot of people think that crypto is anonymous, which would make it a great place to stash ill-gotten wealth, but everything in a blockchain is open and transparent."

Ben Reeve, partner at Oliver Wyman's global financial services practice and digital assets platform, says that analytics providers such as Chainalysis and Elliptic can map addresses on blockchains to identify transactions that might be associated with criminal activity. This information is used by governments and banks.

Also, the flipside of anonymity can be a risk for the retail investor.

"A crypto asset is entirely secured by a private key, so it is essential to protect this," Reeve says. "In traditional transactions, you can call your bank if you forget your online log-in details. With cryptocurrency accounts, no one else has access to your private key and there is no recourse if you lose it."

> "Crypto trading, like all other trading, is a zero-sum game. You make money at the expense of others

Insurance broker leads digital assets across the final frontier

Insurance is the last barrier preventing the widespread adoption of crypto and digital assets, says Lloyd's broker Superscript, which is acting as a pathfinder for insurers and the digital assets industry

Cryptocurrencies are gaining acceptance among mainstream asset managers. Ray Dalio, founder of the world's largest hedge fund, Bridgewater Associates, said last year that he owns bitcoin, having previously expressed doubts about the future of crypto.

Even more significantly, US President Joe Biden issued an executive order on 11 March preparing the ground for federal regulation of crypto. Biden also asked the Federal Reserve to explore whether the central bank should create its own digital currency. The move should help legitimise the digital asset industry and further encourage professional investors to explore the potential of diversifying into crypto. Insurance for the digital asset industry is now the final frontier stopping crypto from fully entering the mainstream of finance, says Ben Davis, team leader, digital assets at Superscript, the first UK insurtech company to become a Lloyd's broker.

Davis says: "Digital asset companies lack insurance options simply because insurers feel like they don't really understand the sector or the risks it faces. Yet, insurance is critical if crypto is to enter the mainstream of the investment world. Without it, the biggest players are left unregulated, and their customers unprotected."

Superscript has built a dedicated digital assets team, led by Davis, to bridge the gap between insurers and the digital assets space. He adds: "I have been involved in digital assets for many years and insurance for even longer, and so have all my colleagues – we are from the crypto community and are advocates for that community. We understand the language they speak, share their concerns and ambitions, including a dedication to accelerating the mainstream adoption of digital assets. We believe the key is allowing crypto entrepreneurs to take risks, safe in the knowledge that we will catch them if they fall."

The deep connections between Superscript and the digital asset ecosphere are vital, given the latter's dynamic and diverse nature. The sector's stakeholders range from custodians (which look after the digital assets), crypto exchanges, studios involved in non-fungible tokens (NFTs), decentralised finance platforms and protocols, to the venture capitalists and hedge funds that are investing in crypto.

Davis' team is engineering a comprehensive suite of insurance products for web3.0 businesses, specifically designed to meet their commercial insurance needs. These products are already available, with more to follow later this year. Superscript has built up a multi-stream of premiums from scratch.

"We're working with some of the biggest names globally in the digital asset industry, which is really exciting, and the business is gaining momentum," says Davis. While 200 digital asset businesses applied to Superscript for insurance in 2021, that figure has risen past 100 already this year.

A key challenge is a lack of the information required to assess and price risk. Superscript is exploiting leading-edge technology, such as machine learning and big data, to provide insurers with all the data they need to properly assess risk. Dan Ross, technical lead – digital assets at Superscript says: "We have developed a proprietary model that allows us to cross-reference the risks facing a business against 2,000 data points." That allows insurers to feel comfortable taking on the business brokered by Superscript. Ross helped Superscript become the first Lloyd's broker to be accepted into Lloyd's Labs – cohort 7 – to develop the machine learning algorithm that is used to aid their technical risk analysis.

Spreading knowledge about the digital asset industry within the insurance sector is vital, argues Davis, because insurers hold a number of misconceptions. Chief among these is that the risks facing this newly emergent technology are fundamentally different from those that challenge traditional businesses. In reality, many of the risks – including cyber attacks and the associated problems of data breach, ransomware and business interruption – are the same. Just like other companies, crypto firms also require professional indemnity insurance to cover breaches of contract, or errors and omissions. There are, however, some risks that are specific to crypto, such as the theft of private keys (passwords that allow owners to access their assets) and intellectual property infringement related to NFTs.

Davis says: "Most underwriters think crypto is incredibly complex and they will never be able to understand digital assets, when in reality the majority of the risks are really no different from those they already insure in many other sectors. Moreover, we can act as pathfinders, leading them through those areas that do require specialist expertise."

Ben Davis, team leader (left) and Dan Ross, technical lead (right) – digital assets at Superscript

> **Insurance is critical if crypto is to enter the mainstream of the investment world. Without it, the biggest players are left unregulated, and their customers unprotected**

Other myths include the impact of crypto on the environment. Despite the headlines, Davis says, mining of bitcoin only accounts for 0.14%, of global energy consumption, where industries like manufacturing make up 77%. He adds: "Christmas lights around the world consume roughly the same amount of energy as the bitcoin network."

Illicit activity is another concern. Yet Davis points out that it has been proven many times that bitcoin is not the instrument for illicit activity that people make it out to be, with illegal uses accounting for less than 1% of all activity on the bitcoin blockchain.

Finally, the argument that crypto is just a bubble that will soon burst and is therefore not worth pursuing seems less credible every day. The fact that the Federal Reserve (which issues US Treasury bonds, the benchmark against which all investment risks are calculated) has now been instructed to explore the creation of a digital currency surely shows that crypto is here to stay.

Over the past five years, Davis says, the Superscript team has countered every argument that insurers have put forward to stay out of the sector. Superscript's combination of proprietary machine-learning technology, data science, underwriting expertise and partnerships with leading underwriters and digital asset companies will ensure the company plays a prominent role as digital assets move into the limelight in the coming years.

Those insurers that have entered are finding business very profitable. While prices of crypto will almost certainly remain volatile, there is clearly high and growing demand for businesses utilising and gaining exposure to digital assets and then ultimately for insurance solutions. That, Davis adds, means that the wider financial industry has an obligation to understand the sector and provide solutions that will allow the industry to flourish and develop in a secure environment.

MONEY-LAUNDERING

It will all come out in the wash: why crypto is no shield for the sanctioned

Using cryptocurrency transactions as a way to circumvent financial sanctions – while technically possible – is fraught with difficulty, particularly when it comes to converting funds into fiat currency

Ben Edwards

As Russian armoured columns rolled into Ukraine on 24 February and its cities came under attack, the world watched in horror and financial aid for refugees and those trapped in the country began flooding in.

By early March, almost $100m (£76m) had been donated in cryptocurrency alone, underlining the unique opportunity that crypto presents for sending funds directly to people in war zones to support the relief effort.

Meanwhile, for those trapped in Russia, cryptocurrency also provides a haven against the falling ruble and state-imposed capital controls. It equally highlights the opportunity that crypto presents for helping individuals to maintain their economic freedoms.

"This is a good use case for why you may not want to be dependent on a fiat currency that's collapsing in value and being reliant on banks that can no longer send money on your behalf to the rest of the world," says Benjamin Sauter, a crypto lawyer at Kobre & Kim, a specialist in global disputes and investigations.

Although crypto can clearly be a force for good, concerns remain that it can also be used to facilitate wrongdoing. As western governments continue to place sanctions on Russian businesses and individuals, one question has loomed large: could sanctions be evaded by shifting assets into crypto?

Not nearly as easily as you might imagine, the experts say.

"In some respects, crypto is no different from traditional finance," Sauter says. "Law-abiding cryptocurrency exchanges and other services that are potential on-ramps and off-ramps for crypto are aware of whom those sanctions apply to. Just like any traditional compliant bank, they would not permit those sanctioned entities to move funds."

Another factor making it difficult to dodge sanctions using crypto is the size of the market, which totals about $3tn. By way of comparison, the value of the global real-estate market was almost $330tn in 2020, according to Savills.

"The market for crypto has grown rapidly, but is there actually the liquidity to wash quite substantial amounts of money? A lot of people would argue that there isn't," says Deborah Hutton, a partner at law firm Eversheds Sutherland.

> **As soon as you move towards dollars, euros or pounds, you will most likely have to deal with a crypto company that is subject to sanction policies itself**

LEON NEAL / Contributor via Getty Images

The volatility of the market may also make crypto less suited for storing substantial assets, while its pseudonymous nature still doesn't make it easy for an entity to conceal its ownership. Any time someone wants to convert fiat currency into crypto, they will need to use an exchange that is likely to comply with both know-your-customer (KYC) and anti-money-laundering (AML) regulations.

"There may initially have been a misconception that things were a lot more anonymous with crypto than they really are," Hutton says. "We're looking at a global regulatory approach. We're looking at the rise of blockchain analysis tools. And we're looking at more sophisticated investigation procedures."

One company that is developing blockchain and crypto monitoring tools is Chainalysis, which can place alerts on crypto wallets that have been linked to sanctioned individuals or organisations.

"If you are a crypto exchange that is interacting directly or indirectly with a sanctioned wallet, you will get an alert that you are receiving funds, or that someone is trying to make a transfer, from a sanctioned entity," explains Caroline Malcolm, head of international public policy and research at Chainalysis.

The ability to detect indirect fund flows is a vital tool for unmasking sanctioned accounts that are trying to cover their tracks by moving funds in and out of several wallets.

"Someone who's trying to evade sanctions is not going to open an account under their own name and then transfer to another exchange directly. They're obviously going to obfuscate," Malcolm says. "But, even they are not transferring directly, we can still see that, maybe three hops away, those funds came from a sanctioned wallet."

One potential way of circumventing the AML and KYC rules is to use an exchange in a jurisdiction that has a more relaxed approach to sanctions compliance.

"You could use offshore entities that don't follow sanctions policies, so that is one potential weak spot," says Teunis Brosens, head economist for digital finance and regulation at the ING banking group. "But, as soon as you move towards dollars, euros or pounds, you will most likely have to deal with a crypto company that is subject to sanction policies itself."

The growth in decentralised finance apps may also offer a way for sanctioned entities to move their crypto assets without needing to use a traditional exchange.

Sauter says: "That's not going to result in cash, but you can convert assets into different forms. You can do this a lot, making transactions more difficult to track and obscuring the path that assets take and who controls them."

He explains that mixing services, which break down funds into smaller transactions or exchange them into other cryptocurrencies, could also enable sanctioned individuals to conceal the destinations of their funds.

Nonetheless, evading sanctions at scale using crypto remains difficult – and it's unlikely to get any easier. Even as the size of the crypto market grows and mainstream adoption reduces the need for on- and off-ramps to convert funds in and out of fiat.

"Even if you could transact entirely in crypto, pure bitcoin barter transactions probably aren't going to get sanctioned billionaires very far," Sauter says. "And, even if we do get to the point where there is widespread day-to-day spending adoption, then you might see the evolution of KYC requirements for merchants that do sizable business using crypto."

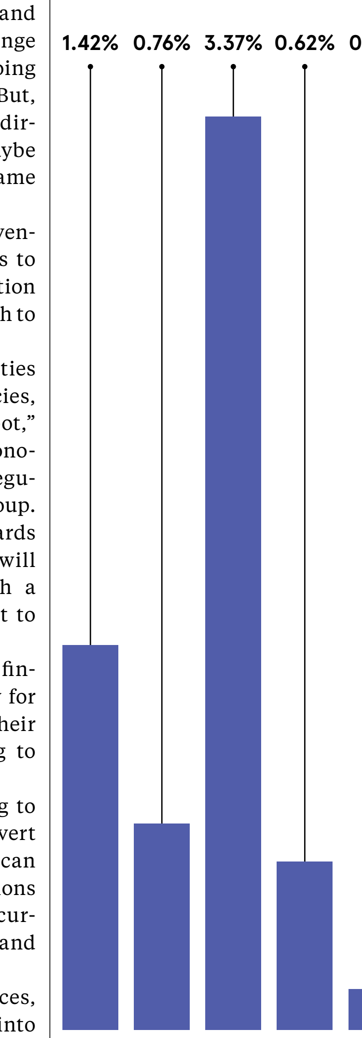
The fact that there's a permanent record of each blockchain transaction means that investigators can potentially piece together fund movements and wallet ownership as more intel becomes available.

"Blockchain gives you the map of the crypto world. On top of that, we overlay the street signs – and the name of each street tells you where to go and who's who," Malcolm says. "That information is gathered over time. Even if you don't have a complete picture today, we continually add to that data, so that you can gradually build a clearer view of where funds have flowed."

Fears that crypto is being used to sidestep sanctions are, therefore, largely misplaced.

CRYPTO'S DARK SIDE

Share of total crypto transaction volume taken by illicit transactions



Chainalysis, 2022

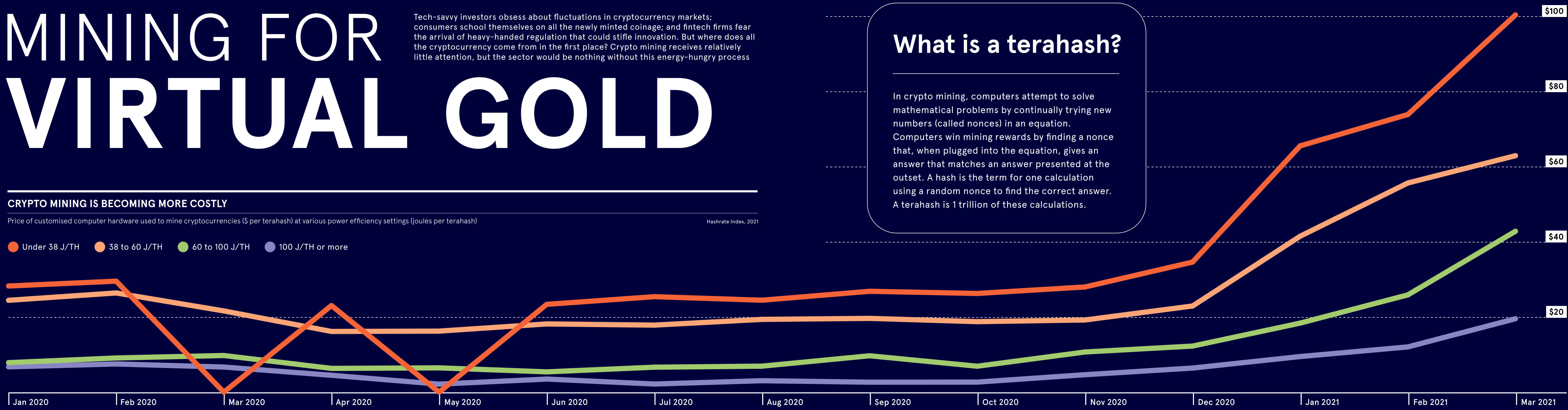
MINING FOR VIRTUAL GOLD

Tech-savvy investors obsess about fluctuations in cryptocurrency markets; consumers school themselves on all the newly minted coinage; and fintech firms fear the arrival of heavy-handed regulation that could stifle innovation. But where does all the cryptocurrency come from in the first place? Crypto mining receives relatively little attention, but the sector would be nothing without this energy-hungry process

CRYPTO MINING IS BECOMING MORE COSTLY

Price of customised computer hardware used to mine cryptocurrencies ($ per terahash) at various power efficiency settings (joules per terahash)

Hashrate Index, 2021



What is a terahash?

In crypto mining, computers attempt to solve mathematical problems by continually trying new numbers (called nonces) in an equation. Computers win mining rewards by finding a nonce that, when plugged into the equation, gives an answer that matches an answer presented at the outset. A hash is the term for one calculation using a random nonce to find the correct answer. A terahash is 1 trillion of these calculations.

HYDROELECTRICITY POWERS MOST CRYPTO MINING AROUND THE WORLD

Distribution of crypto hasher energy sources in 2020, by region

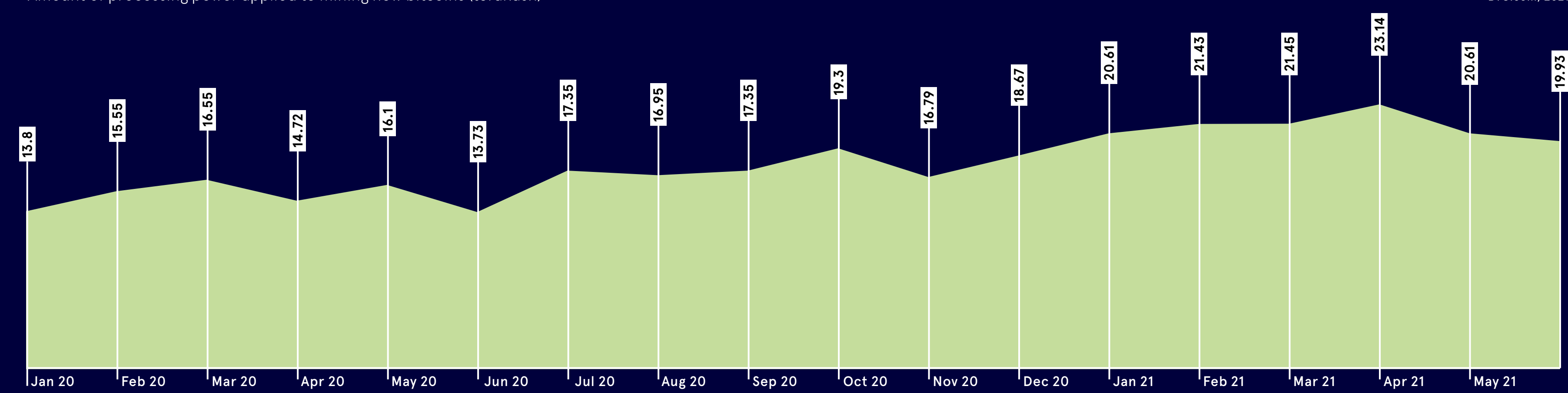
Cambridge Judge Business School, 2020

	Asia Pacific	Europe	Latin America and the Caribbean	North America
Hydroelectric	65%	60%	67%	61%
Coal	65%	20%	0	28%
Natural gas	38%	33%	17%	44%
Wind	23%	7%	0	22%
Oil	12%	7%	33%	22%
Solar	12%	13%	17%	17%
Nuclear	12%	10%	0	22%
Geothermal	8%	0	0	17%

THE HIGHER THE 'DIFFICULTY', THE MORE COMPUTING POWER IT TAKES TO MINE

Amount of processing power applied to mining new bitcoins (terahash)

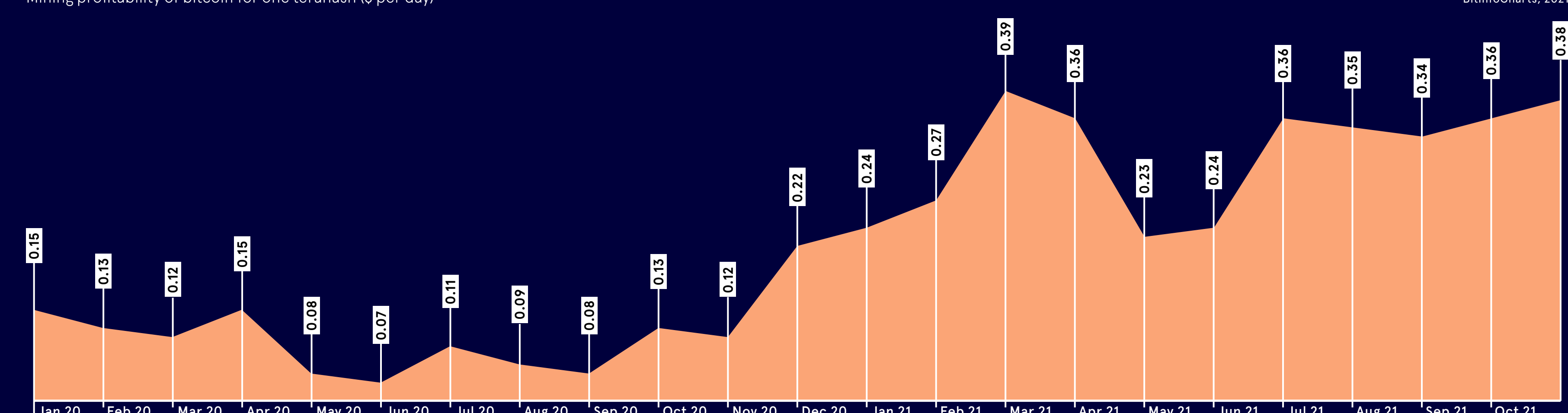
BTC.com, 2021



THE PROFITABILITY OF MINING DEPENDS ON TRANSACTION FEES, HARDWARE EFFICIENCY AND ENERGY CONSUMPTION

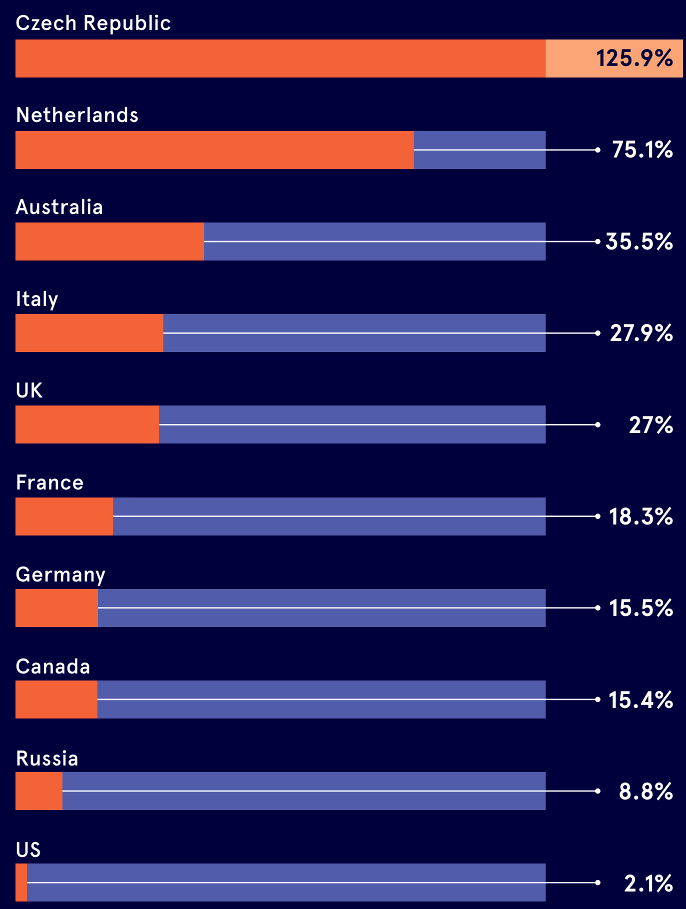
Mining profitability of bitcoin for one terahash ($ per day)

BitInfoCharts, 2021



THE ENERGY USED BY BITCOIN COULD LITERALLY POWER A NATION

Energy consumption of bitcoin compared with energy consumption in selected countries in March 2021



Digiconomist, 2021

CENTRAL BANK DIGITAL CURRENCIES

Beijing versus bitcoin: how the world can learn from the digital yuan

What does China's new central bank digital currency indicate about the future of private crypto assets – and the potential disintermediation of traditional financial services?

Ouida Taaffe

Bloomberg / Contributor via Getty Images

Any citizen or business in the UK can choose to be a payment anarchist. They can ignore the fiat currency and request payments for products or services in whatever form they like, be it cowrie shells, cabbages or bitcoins. What they can't do is require monetary debts to be paid in cowrie shells, cabbages or bitcoins. If a creditor won't accept legal tender, it can't sue for non-payment.

That might not sound momentous, but it is a big anchor for the value of a fiat currency. Legal tender is also a liability of the central bank. Commercial banks create most of the money people use, but trust in the state stands behind it. The existence of legal tender is what makes money money. That is, a store of value, a unit of account and the medium of exchange.

By that definition, private crypto assets cannot be money, despite – and much to the horror of the International Monetary Fund – El Salvador's decision last year to make bitcoin legal tender. Bitcoin is backed only by speculation and the argument (or hope) that currencies can do without financial intermediaries and state oversight. But wild swings in the valuation of fashionable assets are nothing new, of course.

"I am inclined to place cryptocurrencies in the same bracket as tulips – with the exception of central bank digital currencies, that is." So says Charles Taylor, a visiting scholar at the GW Law School in Washington DC and a former deputy comptroller for capital and regulatory policy at the US Department of the Treasury. He's referring to one of the first asset bubbles on record, in which the price of tulips in the Netherlands rose twentyfold during the mid-1630s before crashing.

The only large economy that has launched a central bank digital currency (CBDC) is China, which unveiled its digital yuan – the e-CNY – at the end of last year. But others are not far behind: a 2021 poll by the Bank for International Settlements found that 86% of central banks were "actively researching the potential" of CBDCs.

The e-CNY aims to be retail "digital cash" and it is fully backed by the People's Bank of China (PBoC). Choosing to replace cash and not bank accounts is an important step. It ensures that commercial banks won't be disintermediated and it spares the PBoC a headache: offering consumer accounts and deciding who gets to borrow what.

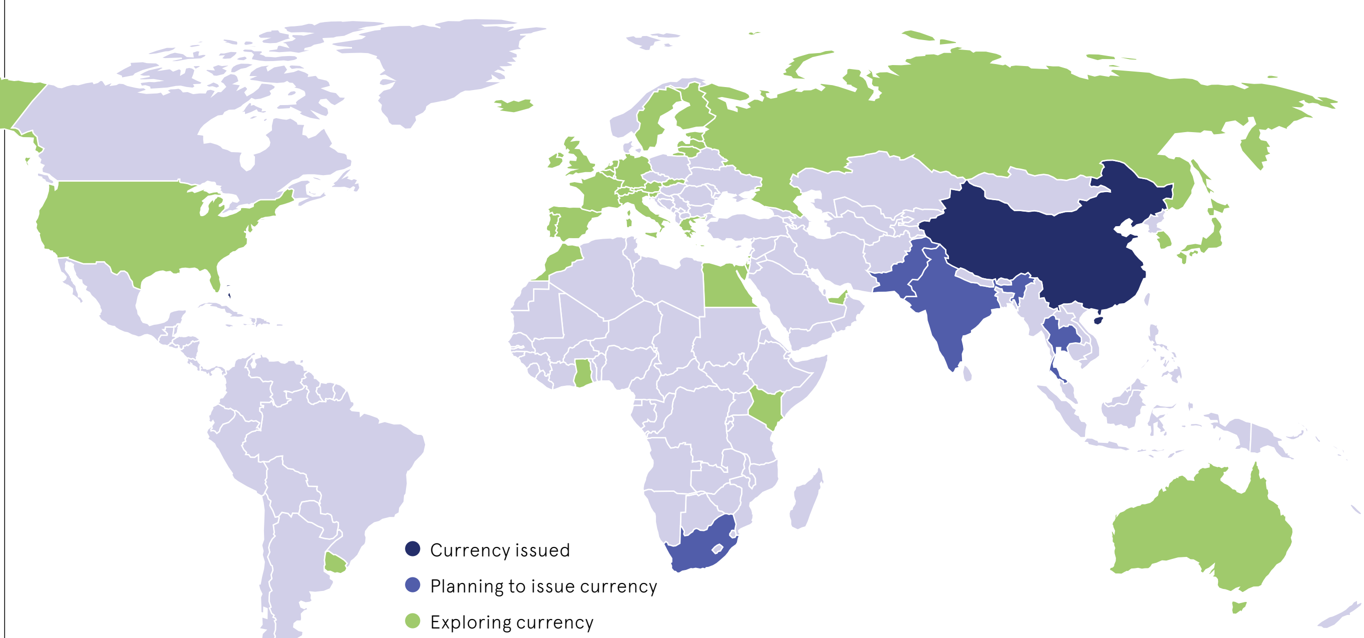
Beijing has decided that interest can be paid only on bank deposits, not on the e-CNY itself. Banks are also the only institutions that can convert e-CNY into deposits and pay it out again as cash.

> **I am inclined to put cryptocurrencies in the same bracket as tulips – with the exception of central bank digital currencies, that is**

DIGITAL PLANET

Countries exploring, developing or issuing central bank digital currencies in April 2021

Statista, 2021



While other countries continue to consult and test, why has China been so quick out of the traps?

"To cater to its people's needs as they use cash less and less," says Dr Sara Hsu, associate professor of supply chain management at the University of Tennessee, Knoxville, and the author of *China's Fintech Explosion: disruption, innovation and survival*. She points out that, because of the widespread use of Alipay and WeChat Pay, both of which link people's bank accounts to a digital wallet, China is already close to being cashless. Many businesses have already chosen to stop accepting notes and coins.

"In addition, China is opposed to decentralised digital currencies such as bitcoin [which was banned last year]. So this is its answer to crypto," Hsu says.

China is not the only jurisdiction that has an uneasy relationship with cryptocurrencies. Facebook's Diem digital currency project was stopped short partly because of regulatory objections in the US.

Huge private platforms on which most people live their economic lives – 1 billion Chinese citizens use Alipay – are, arguably, a threat to monetary stability if their transactions use a private crypto asset.

There is probably another factor in China's adoption of a CBDC: data. About 10% of consumer loans were made through Alipay's app before Beijing took action in light of the state-owned banks' complaints that lower costs of capital and lighter regulations had given Alipay an unfair edge over them. But the big platforms also had another advantage. Because they had largely relegated commercial banks to funding pipes, they possessed vast amounts of data that the state-controlled banks did not.

In 2021, China's industry regulators obliged Alipay to spin off its lending businesses, Huabei, which offers consumer credit, and Jiebei, which provides small unsecured loans. With them went the data that they had gathered.

Yi Xiong, Deutsche Bank's chief economist for China, wrote in a research note that the e-CNY's design gave China's big banks "an entry point… to break into a business… dominated by big tech firms" – and that this would transform the nation's payments sector.

Having a digital yuan that puts the commercial banks front and centre in payments, and opens up the sector to new competitors, is certainly a step away from private big tech. But it's arguably also a step closer to big state.

"Cash is wonderfully anonymous and incredibly convenient," Taylor says. "That anonymity might be a disadvantage to an autocracy and a reason for a country such as China to introduce a CBDC."

Beijing says that the e-CNY will offer "controllable anonymity", but what does that mean in practice? Hsu says: "The authorities can see which wallet the digital yuan is in – and wallets are tied to individuals."

> **Many of the suggested benefits of a CBDC in terms of international payments may be illusory**

The authorities will be able to trace transactions and conduct checks for anti-money-laundering and know-your-customer compliance. Users can opt to be anonymous to counterparties. Some have argued that this will be a disadvantage for online platforms.

One of the most frequently cited advantages of CBDCs is that they could remove friction from the notoriously sclerotic international payments market. But Taylor is not sure that this would be the case.

"Many of the suggested benefits of a CBDC in terms of international payments may be illusory," he says, pointing out that the system involves navigating different time zones and various legal and institutional histories.

"If I send money from the US to India, it has to go from a US bank to an Indian bank. I'm not sure a CBDC really gets around the institutional issues," Taylor argues.

Challenging the dollar's status as the dominant reserve currency has also been mooted as a reason for the e-CNY. China is the world's biggest producer of rare earth metals, which are in particularly high demand as raw materials for rechargeable batteries and other electronic equipment. Could it be moving to 'de-dollarise' the trade in rare earths?

"It is possible," Hsu says. "But the digital yuan is like cash, so that would probably take second place to normal account transfers."

She adds that it's also unclear how the digital yuan could be tracked across borders or whether it will be able to collect the ID information of citizens overseas.

Taylor is similarly sceptical about the idea that the e-CNY will expand the footprint of the yuan in international trade. "The global system for dollar payments is highly efficient," he says. "The network effects in these things are so strong that the conventions of using the dollar, or Swift, are hard to overturn. Generally, cryptocurrencies might make sense in places where there is great distrust of government institutions. Central banks in the OECD are generally trusted."

Taylor also doubts that central banks will find their hands forced by the growing use of crypto.

"Lots of transactions are already beyond their direct reach," he says. "But, as long as some component is controlled and the relationship between that and the rest is predictable and doesn't change rapidly, there isn't really a problem." ●

Bloomberg / Contributor via Getty Images

TRENDS

Can crypto rewards win over gen-Z consumers?

In a fragmented retail market, customer loyalty is particularly hard to win and easy to lose. Crypto cashback schemes could provide a more effective enticement than traditional reward programmes – but they do pose risks

Abigail Edge

Fancy a side of bitcoin with your burger? Earlier this month, US fast-food chain Shake Shack piloted a scheme that offered customers cryptocurrency rewards via a digital wallet. The promotion meant that any Shake Shack purchase made by Cash App debit card users would earn 15% back in the form of bitcoins.

Explaining the experiment to *The Wall Street Journal*, the company's chief marketing officer, Jay Livingston, said that the reward scheme was designed to attract consumers who were curious but hesitant about crypto.

"If we just started taking crypto right now at our kiosks, it would have very low adoption," he said. "But through someone like Cash App, who's been promoting it, you will get some more people who want it and also want to learn."

Burger King also put crypto on the menu at the end of last year when it joined forces with investment platform Robinhood to start the BK Royal Perks rewards programme. For a limited time, Burger King customers could enter to win 20 bitcoins, 200 ethereum or 2 million dogecoins if they spent more than $5 (£3.80) in store or online.

But it's not only fast-food joints that have been serving up crypto. While the number of UK retailers offering crypto rewards is still small, LK Bennett, Glossybox and Myvegan are among those offering bitcoin cashbacks of up to 10% through the fintech app Mode.

Bridging the gap between cryptocurrency and traditional loyalty programmes, crypto rewards offer retailers another way to connect with fickle consumers who are becoming less attached to specific brands and more likely to shop online or via social media.

The idea is that, rather than collecting a retailer's in-house points that can only be spent in one store, consumers earning rewards in crypto will be able to spend that currency at an increasing range of outlets, invest it or use it to purchase non-fungible tokens.

According to trends forecaster WGSN, crypto rewards are set to be a hot trend in 2022. In an increasingly competitive retail landscape, they are a way for brands to differentiate themselves.

"Crypto is new, it's exciting and it's interoperable," says WGSN's global head of insight and lifestyles, Joe McDonnell. "Offering loyalty schemes in cryptocurrency is one way to quickly modernise your brand's image."

WGSN's research suggests that consumer interest in crypto is peaking, he says, adding that this is especially true for generation Zers, who feel that they are being "locked out" of traditional finance.

There's no doubt that they spend more time online than any other generation. And social networks have reinvented how consumers in their teens and early 20s obtain financial guidance. On TikTok and YouTube, videos explaining how to play the crypto markets by influencers such as BitBoy Crypto and TheBlockchainBoy rack up hundreds of thousands of views.

CryptoWendyO runs one of the largest female-led crypto channels on YouTube, with 159,000 subscribers. She notes that gen Zers are "very interested in crypto because they are the most tech-savvy generation", adding that distrust in public institutions such as governments and banks is also driving younger people towards cryptocurrencies. "Yes, crypto does have risks, but so does traditional finance," she says.

Younger people may well be more interested in crypto, but it's difficult to find verifiable statistics on how many of them have invested. The Financial Conduct Authority's *Cryptoasset Consumer Research 2021* report estimates that 2.3 million UK adults hold crypto assets and users tend to be men aged over 35 in the 'AB' social grade, covering managers and professionals.

It's no secret that bitcoin is subject to price volatility – drops of up to 50% are not uncommon – which can be devastating for investors. McDonnell points out that the ability to earn rewards in crypto can serve as a way to dollar-cost average – an investment strategy that aims to dampen the impact of volatility on financial assets. Rewards also mean that consumers can gather coins even when the market is in a downturn, which is "a key source of the appeal".

But he adds: "Retailers that are thinking about offering crypto rewards should consider the risks that their customers could lose their coins."

For the crypto-curious, bitcoin rewards are a way to passively earn cryptocurrencies without actually buying them. Potentially, they will appeal to everyday shoppers who want to accrue bitcoin without the individual risks of investing. But that's not to say crypto rewards are without risk.

David Gerard is a cryptocurrency expert and author of *Attack of the 50 Foot Blockchain*. He believes that there is potential for these schemes to act as a 'gateway drug' into the complex and unregulated cryptocurrency market.

"Crypto is really hard to use," Gerard says. "It's clunky and very few businesses accept it as payment. So people will try to turn these rewards into actual money."

> Yes, crypto does have risks, but so does traditional finance

The result, he warns, will be a lot of people having a "very painful experience" with cryptocurrency.

"The success of crypto rides on the bitcoin bubble, which is the price of bitcoin being up. For that, you need mainstream adoption. The problem is that the demand for it isn't massive," Gerard explains. "People are trying to sell magic beans for real money."

Many banks view crypto as high risk because of its potential to be used for money-laundering and other crimes. HSBC, the UK's largest bank, is among those that prohibit transfers to cryptocurrency exchanges and digital wallets.

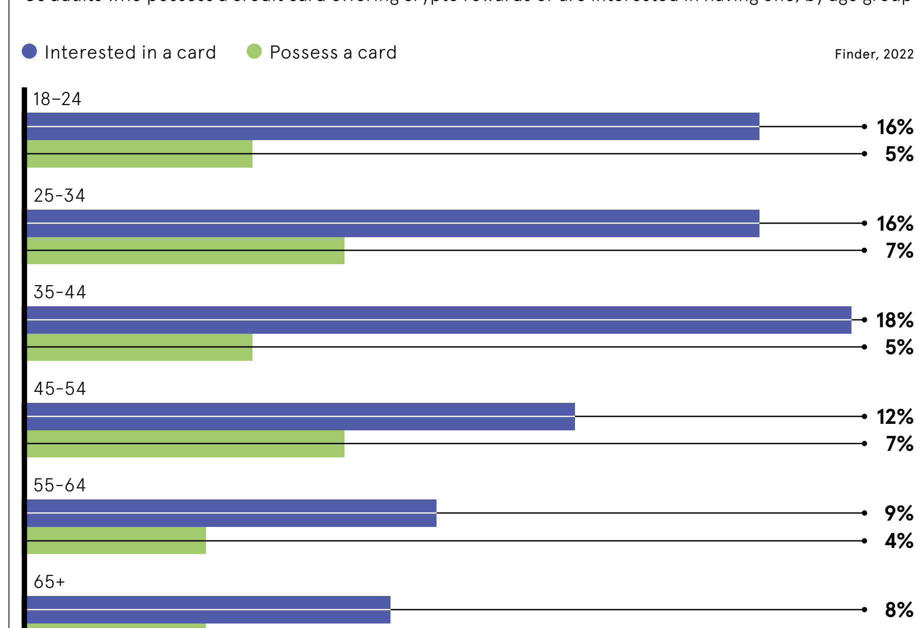
Last year, the Financial Conduct Authority said that it would ban Binance from operating in the UK, prompting several banks to pre-emptively block transfers to the crypto trading platform. In the US, President Biden recently signed an executive order seeking to regulate cryptocurrencies. Any cryptocurrency income, including 'free' reward coins, may also be considered taxable.

Then there is the issue of hacking or losing 'private keys'. Remember Stefan Thomas, who lost a bitcoin stash worth $220m (£167m) after forgetting his password? Or James Howells, who dumped an old hard drive that held his bitcoin private key, worth hundreds of millions?

Many people still view bitcoin as an internet peculiarity, and it remains to be seen whether loyalty reward schemes will help to legitimise crypto. But perhaps their use by brands as prominent as Shake Shack and Burger King may be enough to flip perceptions. ●

WILL CREDIT CARDS OFFERING REWARDS IN CRYPTOCURRENCY CATCH ON?

US adults who possess a credit card offering crypto rewards or are interested in having one, by age group



INSIGHT

'If regulation is not balanced and proportionate, the UK will lose out'

A Q&A with **Ian Taylor**, executive director of CryptoUK, on the urgent need for improvements to how the sector is regulated

Q What should we be trying to achieve with regulation?

A Our vision is to have a joined-up approach to regulating different activities and market participants in the UK. We saw something in this vein in the US with Joe Biden's executive order calling on government departments to cooperate and so make better policies.

In the UK, agencies are trying to use existing policy and case law that is not easily applicable to this industry. Take, for instance, consumer protection: the current proposal is a blanket ban on consumer-targeted adverts for crypto products and services, even though the median investment for retail crypto investors in the UK is only £300.

The use of existing regulation by the Financial Conduct Authority (FCA) is harming competition and failing to protect consumers effectively. A full ban on advertising is not a proportionate response.

If regulation is not balanced and proportionate, the UK will lose out. First, we lose out on the macroeconomics of what could be a thriving industry. Second, we still can't protect consumers, because companies are offshoring to crypto-friendly jurisdictions, where they are still able to sell into the UK. We're victims of jurisdictional arbitrage.

Q Are there principles that the regulators should work to?

A First, along the lines of what I've just mentioned, we need a risk-based approach. A full ban on retail consumer advertising when the median investment is £300 is not risk-based. If that figure were £300,000, then yes, maybe we would need something heavier-handed. But, despite the rhetoric, the current regulatory approach is not risk-based and the responses are not proportionate.

We must also remain technology-agnostic. In Europe, for example, there's talk of being risk-based and technology-agnostic, but then ideas such as banning proof-of-work have gained a lot of traction. The proof-of-work concept underpins about 80% of the current blockchain transactions, and a lot of those node operators and block producers are in Europe. A blanket ban would decimate the crypto ecosystem. Again, that is not a proportionate measure. We are seeing huge shifts to renewables, especially as miners move to Europe and North America. Now, about 60% of all bitcoins are mined with renewable energy resources.

Lastly, there needs to be some engagement with the industry – the people with expertise. There is a lack of knowledge and understanding at the FCA. It's doing what it can, but it is under-resourced. The engagement has to happen higher up the ladder – at Westminster.

Q What is the next key step for crypto regulation?

A We need something positive to happen. The UK must come out and do what Biden did. Policy people in the US all know that executive orders like Biden's don't have any teeth. It's grandstanding, yet it sends a positive message. And we know this messaging is important to the industry from the conversations we've had with venture capitalists.

The UK is attractive for entrepreneurs and investors. It's easy to set up a business here, w ehave good rule of law and access to capital. But all of that is being undermined in the crypto sector by a lack of clarity on regulation and long-term government policy.

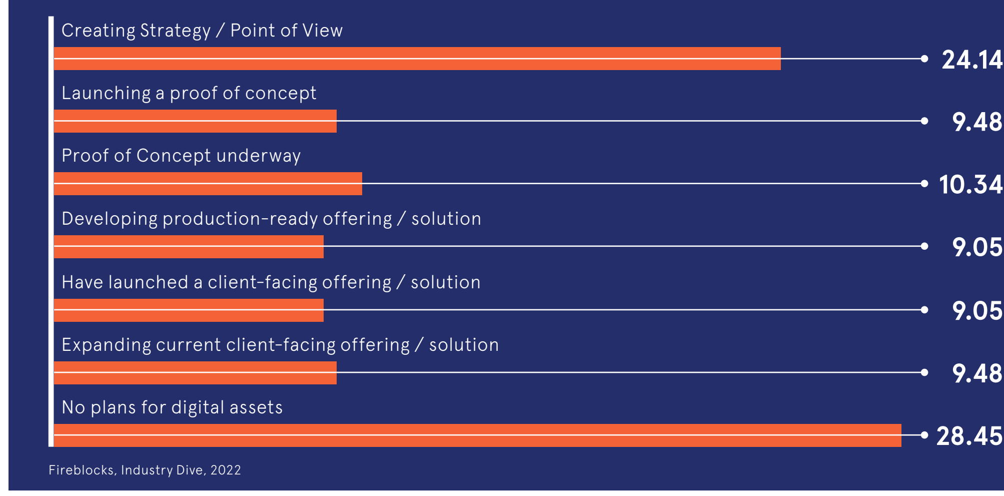
As a next step – and it's urgent – we need some grandstanding from Westminster. If this doesn't happen in the next six months, it will be too late. The UK will have gained a reputation as a regulatory environment that stifles innovation, prompting companies to set up offshore. In fact, this is already happening. We need some strong vocal support from the government and we need it soon. ●

Ian Taylor
Executive director, CryptoUK

Commercial feature

THE STATE OF FI CRYPTO ADOPTION IN 2022

The percentage of organisations that say they are at the following stage with respect to their digital asset journey



Fireblocks, Industry Dive, 2022

Unlocking the crypto market for financial institutions

Financial firms are preparing to fully embrace digital assets and it is essential that they bring those offerings to market in a fast, secure and scalable way

A recent survey conducted by Industry Dive and Fireblocks – the market's leading digital asset custody, transfer, and settlement platform – revealed that 70% of financial institutions are already embracing crypto in some form. This figure is expected to rise further in 2022 on the back of a record-breaking year for the cryptocurrency sector.

The question is not 'if' institutions will embrace digital assets, but 'when'. "We think every business will be a crypto business at some point," says Andrew Han, director of business research at Fireblocks.

Yet while many in the market are familiar with the likes of Bitcoin and Ethereum, the potential application of the technology underpinning these digital assets extends much further, says Han.

The ability to virtualise traditional assets using blockchain infrastructure – a process known as tokenisation – offers a viable route for many financial firms to meet the growing demand from clients who expect to have access to crypto, even at an institutional level.

"Financial firms are realising that bringing crypto to their customers is not just going to be about Bitcoin, but more about these other use cases," adds Han. "There is an amazing story emerging about how this can be achieved seriously by institutions who want to help clients get better returns, hedge against inflation and safely access emerging markets such as NFTs and Web3."

> Constantly trying to keep pace with the market requires a retrofit of the existing infrastructure when taking the 'custody-first' approach

Accelerate speed-to-market by learning from early adopters

The digital asset market is built around speed: speed of transactions, settlement, confirmations and, most importantly, innovation. While it's not a zero-sum game, being first or early enables an institution to compete on innovation instead of pricing and features. And those customers are increasingly looking for crypto exposure, yield, NFTs and new ways of transacting.

"If you look at some of today's biggest institutional crypto players and fintechs, you'll see they've had to deal with every custody, security, operational and scalability issue imaginable. The crypto markets have been phenomenal for these early adopters, but the lessons learned are meaningful and can benefit new participants entering the space," Chris Jameson, director of enterprise programs notes.

Today, over 1,000 institutions have utilised Fireblocks to launch crypto trading and lending products; accelerate client access to DeFi, staking and NFTs; and streamline back office crypto operations. "By partnering with us, these firms are future-proofing their infrastructure. We have our finger on the pulse of customer demand and are continuously updating our platform to support new use cases, " Han notes.

Keeping up with customer demand and operational scale

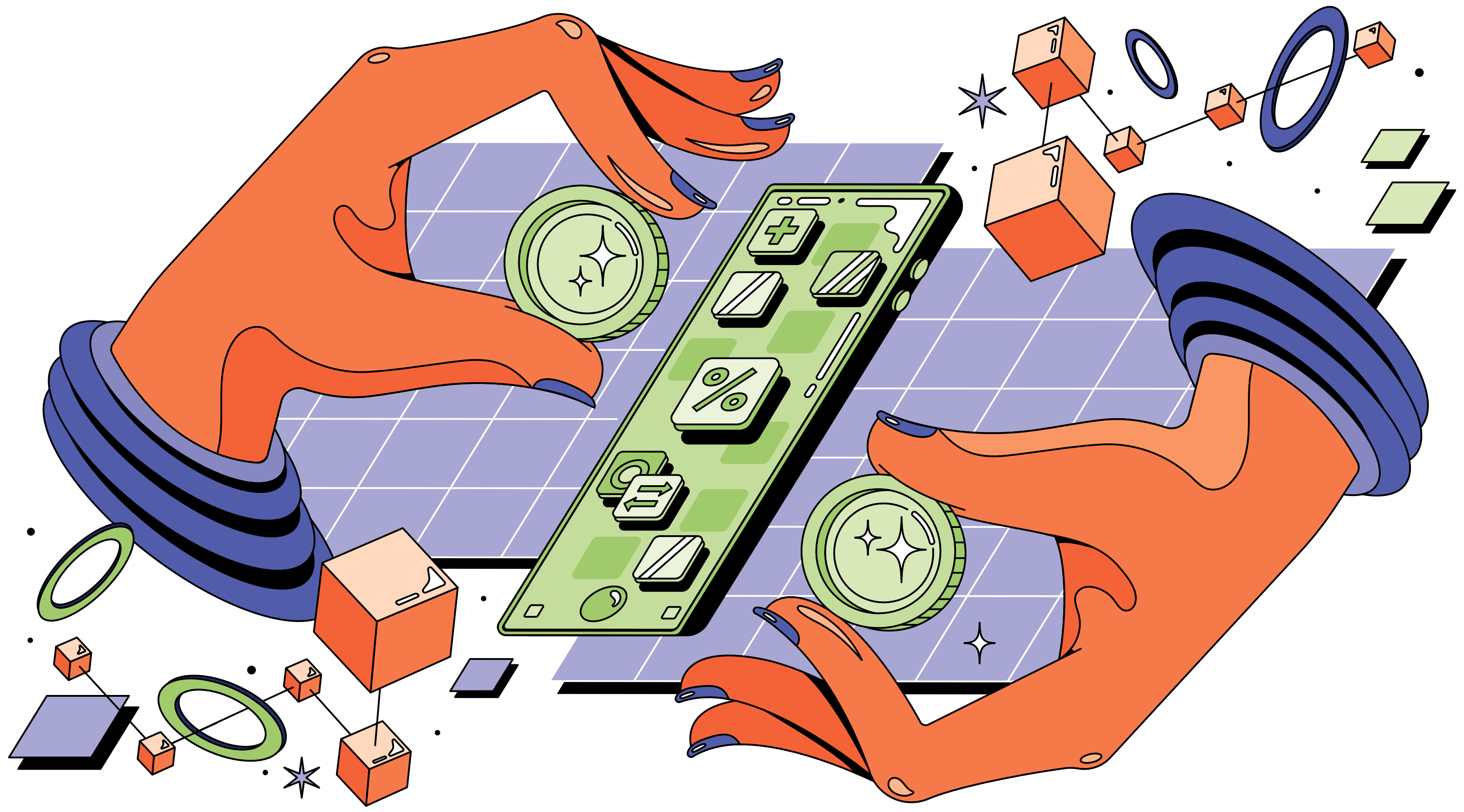
Firms should also consider what their clients are actually asking for. Companies often start with a 'custody-first' mindset by selecting a custody partner or developing an in-house custody solution, but quickly encounter problems trying to keep pace with customer expectations.

"Institutions are expected to deliver the same level of customer experience that their customers have grown used to. A client might start with retail trading of a few tokens or stablecoin payments, but that is only the beginning," Jameson explains. "Your customers will soon start asking for more token and blockchain support, access to DeFi, access to NFTs and gaming, as well as on- and off-ramps for their crypto. At Fireblocks, we have seen the custody-first scenario countless times where teams have to re-platform because the use case, market or customer needs change."

Companies starting off on the custody track often need to commit even more time, money and resources. Constantly trying to keep pace with the market requires a retrofit of the existing infrastructure when taking the 'custody-first' approach. That's why finding a technology partner that is able to support any use case is a top priority. It enables companies to create a lean but scalable digital asset infrastructure so they can focus on delivering new products and growing their business.

For more information please visit fireblocks.com

Fireblocks



> Without clear regulation, crypto lending companies are not held to the same standards of reporting

LENDING

Collateral thinking: why lenders are treating crypto as a way to reduce risk

Cryptocurrency-backed finance is fast becoming a genuine alternative to conventional bank lending. What's making it so popular with consumers – and what are the drawbacks?

Finbarr Toesland

Innovations in decentralised finance (DeFi) have already shown how using blockchain technology for financial services can offer an alternative to conventional offerings. From savings accounts and insurance to securities trading, DeFi technology has opened up a whole range of services that fintech startups can offer.

One of the fastest-growing areas of DeFi is cryptocurrency-backed loans. Just as traditional financial institutions offer secured loans in fiat currency against a house or car, a crypto loan is secured using cryptocurrency as collateral.

Unlike conventional loan products, cryptocurrency-backed loans use smart blockchain contracts to govern the loan and cannot be altered by a third party.

"Crypto investors are frequently praised for taking the Hodl [hold on for dear life] approach to investing. But the manner in which one Hodls can vary greatly," observes Nicole DeCicco, the founder and owner of CryptoConsultz. "Hodlers will often consider, and participate in, crypto lending and staking platforms in order to earn interest on their investments. Although this is not without risk, the benefits of such platforms are unarguably impressive to say the least."

It's not difficult to see why borrowers are becoming increasingly interested in crypto loans. These give access to relatively low interest rates on repayments, provide practically instant funding and require no credit checks. Data from CoinMarketCap indicates that the global market capitalisation of all crypto assets, including bitcoin and ethereum, is close to $1.8tn, illustrating the market potential for crypto loans. Other estimates have been significantly higher.

For so-called crypto whales (people who have millions upon millions in crypto in their digital wallets), lending their crypto via online platforms can provide them with fiat currency from interest, without attracting the same level of taxes that selling their crypto could attract.

But, as with many financial products, taking out such a loan is not without its risks. Bitcoin and other cryptocurrencies are well known for their high volatility. Within days, their value can increase substantially or collapse. Because of this inherent instability, crypto loans typically have an extremely low loan-to-value ratio and require borrowers to provide additional capital should the crypto price fall below a set value.

£36.04bn

The total locked value of the lending segment on the ethereum blockchain as of January 2022

DeFi Pulse, 2022

"It's imperative that those interested in using crypto loans understand the rules of the smart contract and scrutinise the fine print, just as one would with a traditional loan," DeCicco says.

Although regulators around the world are starting to set cryptocurrency regulations, a lack of clear and comprehensive guidelines has created a difficult operating environment for many crypto loan platforms. In February, for example, a subsidiary of major crypto platform BlockFi called BlockFi Lending LLC was alleged by the US Securities and Exchange Commission (SEC) to be offering a product that was illegal.

According to the SEC, it had not registered the BlockFi Interest Account lending product as a security and had also failed to represent that product's risks accurately. Although the crypto platform did not agree with the allegations presented by the SEC, it did approve payment of a $100m settlement charge – the largest penalty for a crypto enforcement action to date.

"One main reason for scrutiny focused on lending rather than trading in general is that lending is multifaceted," DeCicco says. "Without clear regulation, crypto lending companies are not held to the same standards of reporting. There is very little disclosure about what's going on behind the scenes."

From a regulatory perspective, more is needed for these platforms to thrive. At the moment, they aren't required to meet certain banking regulations and also they aren't covered by any form of deposit protection or financial services compensation scheme. It means that a platform's users have little recourse if it were to fail.

A number of firms have sprung up in recent years to offer crypto loans through a central company. Firms such as BlockFi, Celsius, YouHodler and CoinLoan provide loans in the centralised finance space and offer users similar benefits to DeFi, but with the customer experience and strong security of conventional financial companies.

In a short space of time, many platforms have reported extremely high growth in crypto lending. For example, CoinLoan saw crypto-backed loans increase by 2,000% in 2021, mirroring the strong year for crypto in general. As these platforms continue to grow, are large financial institutions at risk of losing customers to them?

For Ilya Volkov, co-founder and CEO of cryptocurrency exchange and lender, YouHodler, the rise of crypto-based lending does not present any threat to traditional lending markets.

"Technically speaking, crypto-based lending is a form of traditional pawn-shop loan, where crypto is used as a form of collateral," he says. "This means that we speak not about disruption or competition with legacy businesses, but about some kind of an extension to them."

When it's compared with traditional financing, which dates back hundreds of years, there is no question that crypto lending is still a new industry. But as adoption grows – with a survey by research firm Piplsay finding that 49% of millennials own cryptocurrency – it may not be long before customers and high-street banks consider crypto loans.

"At this moment it's a hustle to borrow money from a bank," says Alex Faliushin, founder and CEO of crypto lending platform CoinLoan. "Crypto loans allow anyone with funds to borrow money instantly and to be a lender as well, giving healthy returns in comparison with holding money in the bank."

The account-opening process at an exchange or crypto lending platform is also usually simpler and more innovative when compared with bank accounts.

It may be some time before crypto loans reach their full potential and consumers feel comfortable with this relatively novel financial product. But the benefits for crypto owners in securing a loan against their holding could be too attractive to ignore.

"In time, we will see more and more ways to use crypto lending platforms to have the best utility for your money," Faliushin says. "The use cases will develop in time with the industry." ●

Centralised and decentralised systems meet in the new world of finance

Combining regulated access to decentralised finance with mainstream, traditional banking and payments processes will unlock financial freedom and revolutionise global economies

For many people, the global financial crisis in 2008 was a stark realisation that traditional banking is broken. Built on old, inefficient and slow technology, legacy banks are blighted by high operating costs, obsolete pricing models and expensive cash handling. A system which deems negative interest rates on hard-earned money as acceptable is barely fit for purpose.

Despite the rapid rise of fintech startups following the financial crisis, if anything the traditional banking system has become more sluggish and fragmented, as it is determined to protect legacy revenue streams. It's no wonder consumers have sought alternative options for trading and finance that don't involve going to a legacy bank for loans, as well as alternative assets which diversify savings away from traditional stock and bond investments.

As is to be expected in an increasingly technology-driven world, digital assets are garnering particular attention. Decentralised finance (DeFi) enables users to not just store, exchange and trade cryptocurrency assets but also earn interest on them, with rates as high as 19%, and lend or borrow against them peer to peer. With no need for intermediary financial third parties to govern and process transactions, it is more efficient and fluid as well as cheaper.

"There will be ever more ways to buy, trade and sell digital assets," says Brad Yasar, CEO of EQIFi, a decentralised protocol enabling DeFi and seamless cross-platform transactions. "Even financial institutions, historically slow to adapt, now clearly see the opportunity to hold and profit from alternative digital assets such as cryptocurrencies. However, we also need to see regulators be more nimble and responsive to these rapidly evolving opportunities."

DeFi offers a way to democratise access to financial products that traditional banking and financing solutions have not been able to provide. But in a nascent market, in which regulators have been slow to adapt, digital asset consumers have faced limited options for securing custody and banking level access to assets. Demand is high for professional, secure and convenient digital channels for their day-to-day banking activities worldwide.

A volatile economic climate over the past couple of years has opened people's minds to DeFi-based banking and services even further, but while most regulators are no longer trying to deny DeFi, they have not been forthcoming with solutions for regulated access. Used to dealing with traditional financial institutions, they are not nimble enough for the pace of the DeFi markets, which is holding valuable products back from being mainstream.

One innovative company, however, is leading the way in bringing more transparency and accountability to the DeFi world. Optimised for real-time digital interactions, EQIFi is built to meet the expectations of consumers keen to embrace the evolution of digital technologies. Through blockchain technology, EQIFi democratises financial products previously only available to the privileged few, delivering more products than other decentralised systems.

Crucially, EQIFi's platform is not just secure in itself but it is the only DeFi project globally that is powered by a licensed and regulated bank, giving people the confidence and assurance to embrace the opportunities of DeFi. That bank is EQIBank, which has been recognised among the top digital banks to watch alongside the likes of Monzo and Chime.

> DeFi offers a way to democratise access to financial products that traditional banking and financing solutions have not been able to provide

"EQIFi welcomes regulatory oversight," says Jason Blick, CEO of EQIBank. "Measured, responsible regulatory oversight can only be a good thing for the industry as a whole."

A regulated and licensed global bank partnering with a DeFi platform is bringing forward the future of community banking, driving the shift from anonymous, high-risk DeFi platforms to safer, more transparent versions that non-crypto and non-technical people can benefit from. By bridging the gap between DeFi and traditional finance, the partnership will help unlock greater financial freedom as consumers can integrate digital assets into their everyday lives.

As well as being a decentralised protocol for pooled lending, borrowing and investing for digital assets, the single uniform platform offers access to EQIBank accounts, custody, debit and credit cards, OTC and wealth management. It solves the problems of negative interest rates and the yield on traditional banking products, while giving those already in the DeFi space access to crypto-friendly digital banking. The result is one single marketplace for investors to access fixed and variable-rate lending products, and DeFi interest rate swaps.

Combining DeFi, crypto and traditional payment rails will usher in a new era of people-led finance. The future of finance is not centralised or decentralised – it's both, in a single platform that consumers can incorporate into their everyday lives. Bridging the two worlds offers a fairer, more efficient financial system and will bring financial access to millions of the currently unbanked, while forcing the traditional banks to increase their value to the public.

"DeFi currently attracts a relatively dedicated user base, but EQIFi is set to change that," says Yasar. "The future of DeFi will include new, innovative tools like yield aggregators and interest rate swaps, integrated seamlessly with a licensed and regulated digital bank for the best user experience, such as EQIFi. DeFi is already affording wealth preservation and growth on an unprecedented level worldwide, outside of the outdated, archaic constraints of legacy institutions, and we fully expect this trend will continue and grow in the years ahead.

"We also expect to see DeFi evolve in other exciting areas. Democratising more sophisticated financial products like interest rate swaps will be a game changer. I anticipate seeing more bridges emerging between DeFi and regulated and licensed digital banks, facilitating the ease of access and use for people worldwide in the new world of finance."

For more information, visit eqifi.com

EQIFI

NON-FUNGIBLE TOKENS

How NFTs can be used beyond art

We've all seen the huge bids for digital art, but, for those of us who are bored with *Bored Ape* and the like, where else could non-fungible tokens potentially have an application?

Chris Stokel-Walker

Non-fungible tokens (NFTs) have propelled themselves into the mainstream. While many of us have become familiar with artwork such as the *Bored Ape Yacht Club*, the technology has much broader potential.

NFTs are entries on blockchain, a distributed database of records that assigns value to items. The market for NFTs has, in essence come out of nowhere. The volume of NFT sales surged from $82m (£62m) in 2020 to $17.6bn in 2021, according to L'Atelier BNP Paribas. The number of people buying NFTs increased over the same period rocketed from 75,000 to 2.3 million.

Nadya Ivanova is chief operating officer and foresight lead at L'Atelier BNP Paribas. She says that 2021 was "a breakthrough year for NFTs in terms of the volume and value of transactions; the interest of mainstream brands; the emergence of new digital communities; and the tens of billions of dollars of funding that went into projects".

While NFTs entered the cultural conversation last year through art projects, they seem poised to extend well beyond their artistic origins. The reality is that NFTs can be applied in any number of areas and used to represent anything – not just artwork. Here are five new use cases.

> The most important potential future use of NFTs is to use it as a community token

1

Building communities

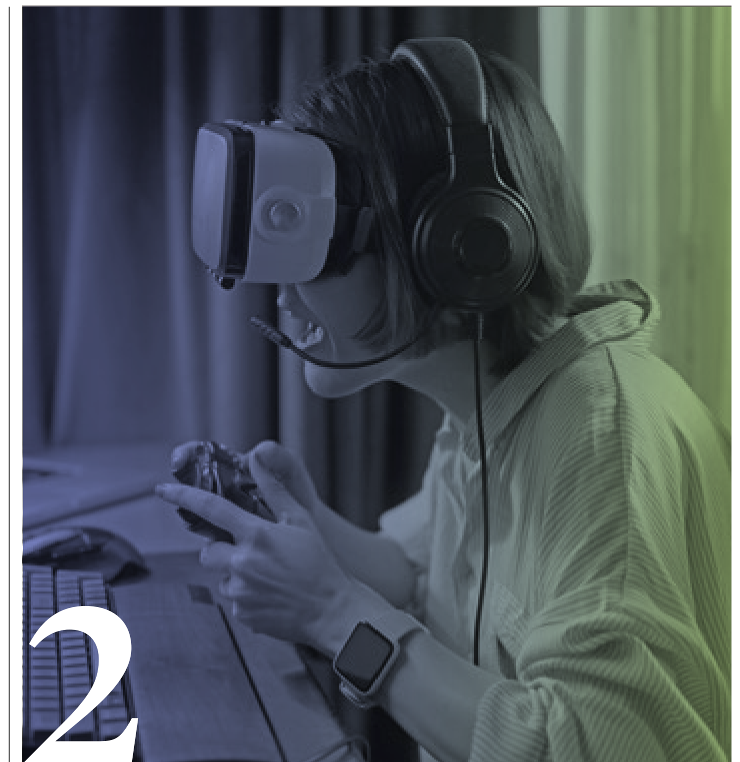
NFTs are part of the so-called Web3 concept, a new vision for the future of the internet built on the idea of collectivism. Web3 envisions a decentralised internet, where no single person or entity holds undue power over the others. The ethos is meant to be community-minded and egalitarian. Because NFTs are built on the blockchain that helps decentralise the internet, they signify that sense of commonality.

"The most important potential future application of an NFT will be its use as a community token," predicts Dr Andres Guadamuz, a reader in intellectual property law at the University of Sussex, who has studied NFTs. "It acts as an identification point for communities."

There are already some examples of this concept in action. Although they're closely tied to the NFT art sector, they could become more widespread. Guadamuz points to the *Bored Ape Yacht Club* – perhaps the most famous NFT art collection of all, which has attracted celebrity collectors including Jimmy Fallon and Paris Hilton.

Granted, they possess the rights to the artwork, but they really own the associated token, which has a deeper meaning, Guadamuz argues.

"This is a token that serves as an invitation to enter spaces that would otherwise be closed," he says. "This aspect – for community management and for identification management – has a lot of potential."



2

Managing assets

NFTs could be used as evidence of ownership of an item – a concept that has "been talked about quite a lot", Guadamuz says. This could help the technology to gain even more mainstream acceptance in the coming years.

So-called asset management is already being used in video games. Players gain an NFT associated with an item that they purchase in one game, which they can port over to another version of the game or a sequel. Such technology could soon be the norm in the wider world.

"It could be used as some form of evidence of property or digital assets in the metaverse, if that actually takes off," Guadamuz says.

If the metaverse is to deliver on the aspirations of proponents such as Mark Zuckerberg, this could be key. A billion of us could end up in the metaverse by the end of the decade, in Zuckerberg's vision of the future comes true. If so, knowing who owns what in this virtual environment would be more important than ever.

3

Trying before buying

NFTs could become vital for asset management in the metaverse, then, but what about those tricky moments before you decide to buy?

"There is huge potential for NFTs in the fashion and beauty industry, especially when we consider that everyday consumers will soon possess digital personas."

That's the view of Alice Chang, founder and CEO of fashion tech company Perfect Corp. "Consumers will use these digital personas to experience and explore the metaverse. They will want these avatars to accurately represent their style and personality," she says, adding that beauty and fashion NFTs will play a role in this.

The opportunity to try before you buy items such as clothing or cosmetics will be a boon for NFTs. The technology could enable customers to virtually sample items they could then buy in the real world, alongside a digital copy to wear in the metaverse. Both would be linked by an NFT, which would help connect the online and offline versions.

"This innovative solution introduces a new dimension of interactivity and engagement in the NFT space by allowing consumers to not only buy the NFT but also sample and experience the product in an exciting new way," Chang says.

Ticketing

Scalpers and the secondary ticket market represent a serious headache for many players in the live entertainment industry, taking a significant chunk of their potential profits for an event. To address the problem, concert organisers have turned to technology. For example, smartphone apps and ticketing are associated with individuals, hampering the ability for tickets to be resold.

But even this technology is fallible. NFTs could empower the industry to finally beat the touts.

"It's plain to see how fraud could be negated. If all original tickets were to be recorded on a blockchain, that would effectively minimise the number of fakes on the market," says Luke Jackson, senior associate at law firm Walker Morris, who monitors technology and digital innovation. "In turn, less reliance would be placed on third-party intermediaries to facilitate ticket resales."

It's possible to combine some of the tout-busting benefits with the other strengths of NFTs, such as the ability to build a community.

"There are exciting possibilities for the artists or sports clubs hosting the events to engage with their fans," Jackson says. "If every show has a corresponding 'ticket stub NFT', the event holders can reward those who attend regularly and/or have supported them in the early days or through difficult times."

4

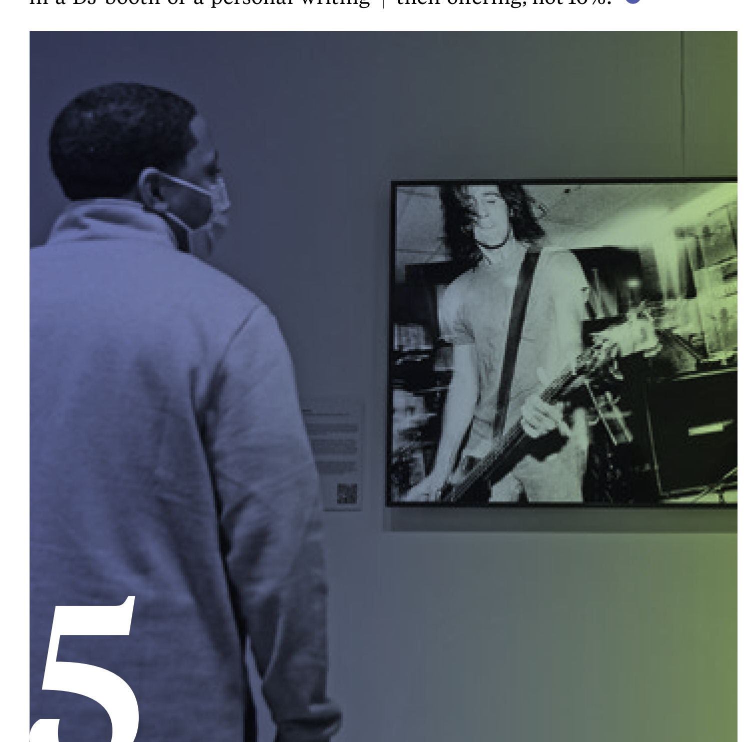
Music

"Music has always been utilised and adopted by tech and new hardware," says Miles Leonard, co-founder of TokenTraxx, a Web3 startup. "And music is once again at the heart of the explosion of Web3 and NFTs."

In the past, exclusive tracks or money-can't-buy merchandise were included for fan clubs. NFTs can be used in a similar way. For example, fans who buy them could gain access to bands or artists backstage, drinks in a DJ booth or a personal writing camp with a songwriter. This benefits the fans, but also the artists.

"Where NFTs have really shifted the paradigm in music is with emerging artists who aren't receiving a workable income through their streaming platforms, despite the thousands or millions of streams they receive," Leonard says.

This would help to address the long-standing challenge of making money from music, he explains, adding: "Through their NFT 'drops', artists are taking 80% of the value in their offering, not 10%."



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