

# Central Bank Digital Currencies and Decentralization Crypto's latest dilemma

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Money has become a pivotal element for human social interaction ever since its conception thousands of years ago. Going from the first Chinese paper notes and coins circa 700 B.C., trade and human labor obtained standardized exchange rates. As time went by, economic activities became more complex and thus gave rise to new money forms including fiat or government-backed currencies in the eighteenth and nineteenth centuries, giving earlier spawned economic actors (banks and financial institutions) a stronger influence in society. The aforementioned economic conditions paved the way to the notion of a decentralized currency that eradicated any potential biased institutional control, an idea that would come to life in 2009 under the name of Bitcoin along with the computerized cryptography advancements from the past few decades.

This pioneering cryptocurrency would mark the way for several other projects —Litecoin, Ethereum, Ripple...— while consolidating a new community that saw decentralized finance (DeFi) as the future of 21st Century economics. However, classic institutional and state actors did not neglect this event and have been looking for ways to become notable market participants in recent years. Most notably, national governments are planning to introduce National Digital Currencies while regulating cryptocurrencies' exchange

companies and cryptocurrency utilization amongst their citizens. Ultimately, the situation has become crypto's latest dilemma: a DeFi system conceived as an alternative to traditional centralist models is so popular today that it is now threatened to be forced into exactly that financial structure it tried to escape. Are National Digital Currencies a real threat to the crypto community and the DeFi utopia?

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Let us first properly comprehend the concept of a national digital currency. Also

known as Central Bank Digital Currency (CBDC), this is the digital form of a sovereign state's fiat currency. In that sense, a CBDC's intrinsic value is not financially backed up by any form of tangible asset, but rather by its government's trustworthiness as an economic actor. While most commercial banks already have online sites where money can be electronically saved and later withdrawn from an ATM machine as physical bank notes, CBDCs are meant to stay digital at all times. The latter would allow for major economic advantages for central banks worldwide: a gradual transition towards a 100% digitized, eco-friendly economy; enhanced opportunities to surveil financial operations looking to reduce counterfeiting and fiscal frauds; and to diminish overall transaction costs for all economic actors at both small and large scales. Currently, digital currencies are still at early research and development stages —the Digital Dollar Project for the United States is a well-known example of this.

There are also projects at testing phases; in October 2020, the Bahamian Sand Dollar became available to the country's citizens. A year later, both the Chinese Digital Yuan and Nigeria's e-Naira also began trials in specific regions within their respective countries. When it comes to comparing CBDCs with cryptocurrencies, these are not the same, either. Bitcoin as a cryptocurrency, for instance, is non-fiat money,



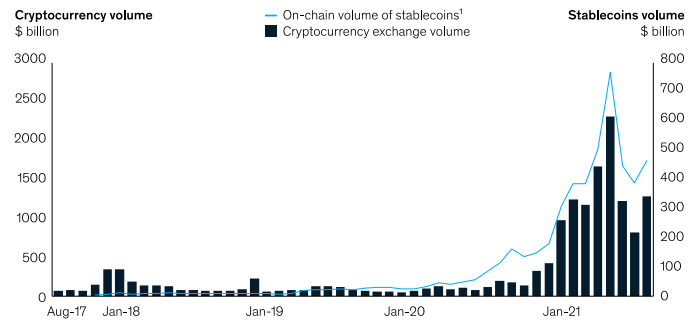
Total Cryptocurrency Market Cap, coinmarketcap

meaning that no government entity will guarantee its financial value and that it can easily be transacted to other currencies while also following a decentralized scheme only limited by the 21 million Bitcoin units available for buyers to obtain (not all cryptocurrencies have a specific unit-existence limit). CBDCs, on the other hand, have governments' full support at the cost of being controlled by their corresponding central banks, having its transactability bound to foreign affairs' policies, and being directly affected by inflation adjustments, re-establishment of interest rates, and other economic events.

Although it is a multifaceted situation, the notion of a potential rivalry between CBDCs and cryptocurrencies may originate from the fact that the former has been advertised as an upgraded, safer version of the latter. Governments with digital currencies' research projects already in progress are looking to synthesize crypto's well-known benefits (24/7 funds' access, providing financial services to underbanked regions, lower transaction fees...) into their national currencies in an attempt to convince cryptocurrency users to switch to these. Another notable advantage of this includes eliminating capital tax costs given that these aren't applicable to any sovereign currency within its own borders. Other states have simply halted cryptocurrency activity entirely based on the uncertainty of citizens choosing a CBDC over Litecoin or Ethereum. Nigeria is a clear example of this circumstance with the crypto ban on its whole territory to stimulate e-Naira usage, while other states such as Iran have monopolized crypto activity benefits like Bitcoin mining and have forced individuals to sell all of their digital assets to their Central Bank.

Both CBDC's proposal itself and crypto ban cases do raise the question "why are cryptocurrencies and their DeFi system so heavily fought against?". To answer this question, let us recall the fundamental political controversy of cryptocurrencies since their conception back in 2009: decentralization prevents full regulation. Globally, government officials agree that cryptocurrencies require stricter surveillance to prevent fraudulent activity and to be considered serious currencies. In that sense, CoinShares' Chief Strategy Officer Meltem Demirors admitted that "financial regulation has historically been dependent on physical jurisdiction, which is challenging to define in the world of digital assets [...]". Quotes like this show a clear concern on current technological capabilities to supervise financial activity happening amongst the crypto community as its market relevance continues to rise. Statistics confirm this: as of February 2023, cryptocurrencies' market cap stands at over 1 trillion USD while stablecoins' trading volume (a specific form of cryptocurrency) reached more than 3 trillion USD during the first half of 2021. As a result, it

The rise in circulation of stablecoins has closely tracked the volume of cryptocurrencies traded on exchanges over the past three years.



<sup>1</sup>Volume of stablecoins exchanged represents all transactions recorded on the relevant blockchains. These volumes are distinct from the volume of crypto traded on exchanges, some of which may be transacted between accounts off-chain.  
Source: Theblockcrypto.com

McKinsey & Company

should not come as a surprise that four-fifths of central banks worldwide have already begun to explore CBDCs within their own territory as of 2020. Cryptocurrencies and the DeFi system have caught enough attention to force financial centralist actors to come up with a proposal of their own.

In return to the surge of these CBDC projects, the crypto community has yielded interesting outputs at both financial and social levels. Based on the narrative held by government officials when referring to CBDCs, cryptocurrencies' trading volumes shift by notable margins. More specifically, to quote the International Monetary Fund researcher Alexander Copstake, "from November 2016 to December 2021 [...] (cryptocurrencies') trading volume falls by up to 55% in the week after the announcement of a ban, and by up to 25% after a CBDC-supportive speech by senior central bank officials". These market volatility circumstances were notably well illustrated after cryptocurrency exchange Binance was banned by United Kingdom regulators from offering crypto-derivatives like market option trading, future contracts, among others, to British clients in June 2021. The rising popularity of CBDCs worldwide has led to further academic approximation of the close relationship between DeFi crypto and CBDCs, resulting in the conception of two measuring indexes: the CBDC Uncertainty and the CBDC Attention Indexes. The indexes, which account for how much projects of the like are being referred to on massive media outlets, focus on either the uncertainty of project completion or the attention given to these projects, respectively. All of the previous evidence comes together to suggest that the crypto community is effectively observing CBDCs' rise as a serious, relevant force within the DeFi market and reacting to the potential effects on their own enterprises.

Considering the current development phase CBDCs are in right now, it is only natural to wonder what the future will bring to these national digital currency projects. As previously mentioned, there are potential advantages to CBDCs replacing physical currency and even perhaps private cryptocurrencies around the world. But it would also be pertinent to state another determinant factor for this crypto-CBDC battle: states' technological and financial capabilities. States with a more limited existing payment infrastructure are more likely to develop payment programs and build, from the ground up, a CBDC. For those states with well-established currency and payment systems, a switch towards a digital sovereign currency might seem more complicated than investments in cryptocurrencies due to the evident trustworthiness from the national population on their current currency model. Bitcoin and the crypto community

have recently found a way into historically unstable states, whose leaders may push for even making them one of their states' official currencies. This has been the famous case of states like El Salvador and South Africa with Bitcoin, although with those decisions have also come financial uncertainty inherent to crypto volatility for their citizens. Of course, the future of CBDCs will also be closely attached to how well they can potentially respond to common cryptocurrencies' threats, with credential theft and loss, privileged users, and corruption being only a few of the most relevant concerns.

Having factored in all relevant financial, economic, political, and social components regarding CBDCs' growing popularity and centralized nature, can the crypto world realistically aspire to keep its decentralized model as it continues to enter the mainstream financial markets and national digital currencies get closer to become a reality? A final take on the matter is that, most likely, both cryptocurrencies and CBDCs will coexist in a mixed environment at least during the first couple of years after the latters start being definitely implemented around the world. A key component to the CBDC vs Crypto discussion will be the interdependence among commercial markets worldwide; variables affecting CBDCs' development projects can have a long-lasting impact on crypto's market volatility (especially when considering that around one billion people used or at least consulted a cryptocurrency exchange site in 2022). All in all, challenges will surge for both CBDCs and cryptocurrencies in the years to come: cryptocurrencies will have to maintain their decentralized nature to remain a relevant financial alternative despite possible regularization and banning attempts. CBDCs, on the other hand, will need to prove absolute immunity against traditional human security threats and prevent their own fall like other exchanges did in the past, since a whole country's financial stability could fall together with them. ■

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