
DeLaRue
Digital
Currencies

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An External Perspective of Digital Currencies

Issue departments are increasingly concerned about modelling the factors that may impact the future demand for cash. We are sometimes asked how to consider the impact of alternative methods and digital currencies on this demand.

We will cover this concern in later articles. However we recognise that there are many questions in the area of digital currency and wanted to bring you an expert view from outside of De La Rue. The DLR Analytics team caught up with Dr Ranee Jayamaha on the topic of digital currencies.

Dr Jayamaha is currently the Lead Consultant-South Asia to the World Bank Group and previously the Deputy Governor of the Central Bank of Sri Lanka, with 45 years of extensive national and international experience in Banking and Finance, Payment and Settlement Systems, including E-money Deployment, and Bank Supervision and Regulation.

The views in this report are hers. De La Rue thanks Dr Ranee for sharing her expertise with us all.

What are digital currencies, crypto currencies and virtual currencies?

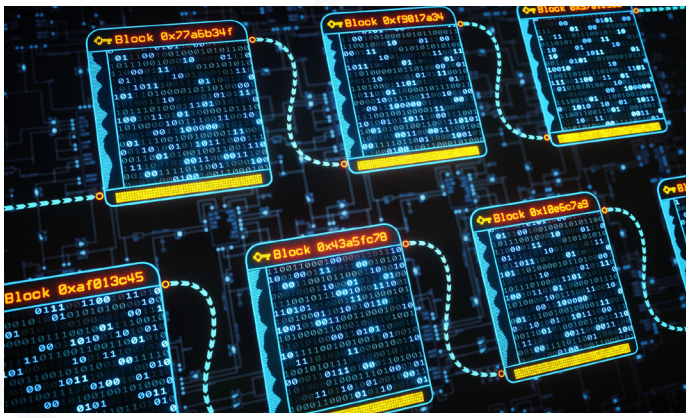
There's a lot of confusion between these terms, but essentially, each one is a type of money with no physical form which can be exchanged peer-to-peer without the need for intermediaries. While the definitions of each type are still shifting and overlapping, we can discern some important characteristics:

- **Digital currency** – the umbrella term for virtual or E-money – only exists on computer networks and is used to transfer money electronically.
- **Crypto currency** – classified as a subset of digital currencies, it uses cryptography to secure transactions, control new currency creation, and verify transfers of assets
- **Virtual currency** – a digital value denominated in physical currencies that can be digitally traded. Unlike crypto currency, it can have legal tender status.

They're all non-physical currencies, have no central issuer or backing for assets, and are generally known for their role as a speculative investment vehicle.

The terms 'centralised' and 'decentralised' also get used with respect to digital currency. What is the difference between these two types?

- **Centralised** – including electronic money and central bank issued digital currencies (CBDCs). These are controlled by central banks (CBs) or monetary authorities.
- **Decentralised** – such as Bitcoin that uses the block chain as a distributed ledger. There's also a finite amount that can be produced.



Digital currencies can be mined by CBs if they're centralised. Or mined by anyone else if they're decentralised (this is the catalyst behind Bitcoin's success).

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The public tend to hear more about Bitcoin than any other digital currency. Why is this?

Bitcoin is the most popular digital currency by far, and its creation in 2009 paved the way for around 1,000 similar "altcoins" such as Ethereum, Ripple, Litecoin, and Dash.

The basic principle of Bitcoin is trust. It requires advanced algorithmic and computer knowledge to mine, create, and add the new blocks which make up its structure. It uses cryptography to secure transactions through public and private keys. Bitcoin mining (the process of creating new Bitcoin) is fully documented through a chain of digital signatures.

Bitcoin ATMs now exist in certain locations to aid in the selling, transfer, and withdrawal of local currency. Physical withdrawals are in the local currency, rather than physical Bitcoin. It can also be bought at ATMs by depositing physical cash, which gets credited to a wallet, mobile phone or card. Due to Bitcoin's steady rise and continual success, the number of Bitcoin ATMs in existence has risen consistently. Bitcoin circulation is currently around 16 million and the total production is limited to 21 million, which it is expected to reach by 2040. This raises concerns about whether the 21 million is sufficient and this is one of the reasons why Bitcoin oscillate at a wider range.

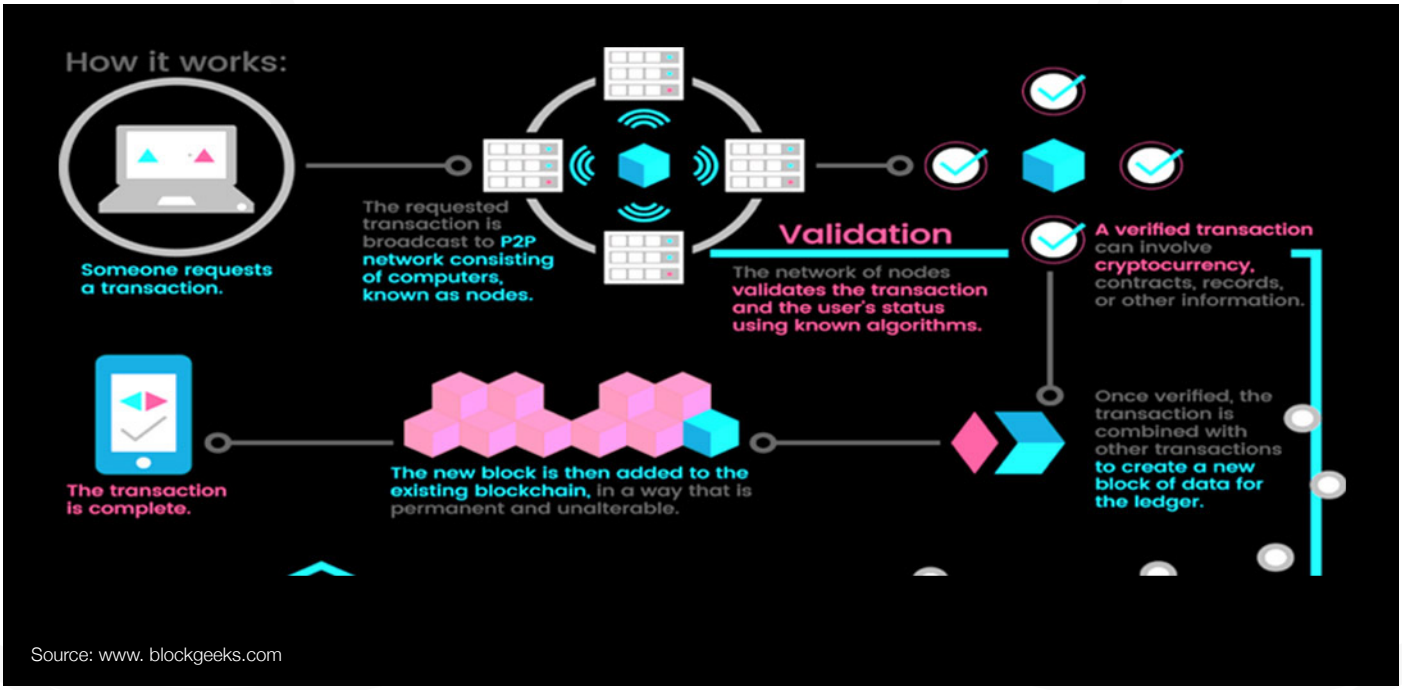
Why do you think there has been so much interest in digital currencies?

Generally, consumers (especially Millennials) have responded favourably to digital currencies because they're perceived as quick, convenient, and low-cost, as there are no fees or surcharges on transactions. And, unlike the red tape associated with a traditional bank, digital currencies are independent and value transfers don't require approvals.

Bitcoin's flexibility has enabled users to store currency in digital wallets, credit cards or on mobile phones, to exchange for physical currency.

Indeed, CBs are exploring what digital currencies could mean for the future of currency and transactions, including the implications of issuing their own digital currencies. Some CBs are positive and ready to fully embrace it. This is largely because CBs could offer greater stability, accelerated digitisation, and bring low-performing currencies in line with the US dollar or similar.

Issuing digital currencies could also bring benefits such as reducing the need to replace, tender, store or destroy paper money (of course other investment and infrastructure may be required instead). CBDC could have advantages for wider society in terms of transparency, issuance, and reduced deficit funding.



Source: www. blockgeeks.com

Yet we also hear of central bank concern with respect to digital currencies. What are the disadvantages?

Digital currencies are entirely digital, meaning they're much more vulnerable to cyber-crime than physical currency. What's more, it's easier to process fraudulent transfers and send money overseas with no need for official approval as well as commit fraud on a larger scale.

The nature of digital transactions also means that every activity is recorded and unalterable. And until CBDC is introduced, there's no central authority for consumer protection. This is particularly dangerous when currencies crash as there's no guarantee that funds can be recovered.

Can digital currencies ever be universally recognised tender?

While some countries like the US and the UK have recognised digital currencies as legal tender, the potential for illegal transactions to go undetected has made many hesitant to embrace it. Bangladesh, Bolivia, Ecuador, Kyrgyzstan and Nepal have already banned digital currencies, while India is in the process of doing so.

CBs are cautious of digital currencies because of their volatility, inflated values, draw on energy resources, and the technology isn't yet scalable. But the current scale of digital currencies means that threats posed to overall financial stability and physical currency is too low to make a difference just yet.

De Nederlandsche Bank (DNB), Bank of Denmark, and Swedish RiksBank are leading the development of CBDCs, and are working on amending the laws to manage it.

Regardless of the approach individual nations take to digital currencies, CBDCs are likely to become a reality in the near future. And many will be looking to learn from the successes and mistakes of others during development. This will also determine how long it will take for widespread adoption of CBDCs.

And while there are potential risks and transitional issues such as upskilling the workforce, educating the public and governments, and gaining international acceptance, some CBs will work hard to make CBDC a reality. Given the disastrous implications of getting it wrong, many central banks would do well to resist the pressure to take immediate action and to ensure that appropriate knowledge is in place.

Further reading

For readers interested in exploring this topic further the European Central Bank also has an interesting perspective. The transcript from Yves Mersch's OMFIF speech on digital currencies can be found here