

Cryptoassets



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“Cryptoassets” are a cryptographically secure digital representation of value, with an estimated value of ~\$2 Trillion [2]¹. This POSTnote-style summary examines what cryptoassets are, how they are used, how they are regulated, and their wider impacts.

What are cryptoassets?

The most common form of cryptoassets are “cryptocurrencies” including Bitcoin, Ethereum and Monero, amongst thousands of others. Like traditional currency, cryptocurrencies are “fungible”, meaning they are exchangeable for cryptocurrency of the same type and can be divided into smaller quantities. An additional class of cryptoassets are “stable tokens”, such as Tether, which are cryptocurrencies tied to fiat currencies in an attempt to stabilise their value. Another class of cryptoassets are “Non-Fungible Tokens” (NFTs). Whilst traded and stored in a similar manner, NFTs are unique digital assets, akin to digital collectibles: Twitter CEO Jack Dorsey sold his first ever tweet for 1630 Ethereum (at the time worth \$2.9 million) in March 2021 [3]. The value of sales of NFTs in the month of September 2021 was an estimated \$1.76 billion [4].

Technological mechanics

Cryptoassets utilise “distributed ledger technology” (DLT), a database of transactions maintained by a group of networked participants, as opposed to a traditional

Overview:

- Cryptoassets include a variety of asset classes. Applications range from legitimate business transactions and speculative investment, to facilitating online black markets.
- Regulations are still catching up with this new technology; legality varies enormously around the world.
- The adoption of cryptoassets has significant implications for finance, infrastructure, inequality, and sustainability.
- Continued monitoring and consulting on cryptoassets is recommended.

ledger that would be maintained by a single authority ([POSTbrief 28](#)) [5].

The most popular cryptocurrency, Bitcoin, utilises a DLT technology called “Blockchain”. Transactions are securely grouped together in “blocks” before being added to the decentralised ledger by “miners”, a process requiring computationally intensive “proof of work” that rewards the miner with Bitcoin. This means that Bitcoin’s perpetuity is reliant on its continued adoption and use [6] [7].

How are cryptoassets used?

Cryptoassets are typically used as speculative investments, as a store of value [8], or in exchange for goods and services in place of traditional currency.

Investment

Investors in Bitcoin may note that the production of new Bitcoin is decelerating by design, with the final limit of 21 million circulating Bitcoin anticipated to be reached around 2040. This intentionally finite supply ensures continual appreciation in value [9] [10], and Bitcoin has quadrupled in price over the last year [11]. However, cryptoassets are intensely volatile: between 2014 and the beginning of 2018, Bitcoin saw daily increases of up to 65% and decreases of up to 25%. In the same period, oil prices never fluctuated by more than 10% [12].

¹ The ‘market cap’ (all held cryptocurrency multiplied by their present value) of all listed cryptocurrencies is \$1.95 trillion as of 01/10/2021. In this highly volatile market, this is likely to change dramatically.

Currency

An increasing number of businesses are accepting cryptocurrencies as payment in the UK [13], including the high-street retailer Lush [14], and fintech innovators PayPal [15]. However, legitimate overall adoption remains low, and a sizeable use-case of cryptocurrency is to facilitate the acquisition of illegal goods such as drugs and firearms on online black (or “dark”) markets [16].

These applications must be considered alongside the fact that cryptoassets are still a relatively young technology operating in a volatile and dynamic regulatory landscape, with regulatory bodies still playing catch-up. As such, while these trends are relevant and applicable at present, they may entirely lose validity in the short- and long-term.

What does the law say?

The Financial Conduct Authority (FCA) considers cryptoassets to be “very high risk, speculative investments” [17], given their highly unregulated nature and the lack of consumer protections.

In January 2020 in the UK, regulations were introduced ensuring that crypto asset businesses must register with the FCA and comply with Money Laundering Regulations to manage the risk of money laundering and financing terrorist activity [17]. Whilst the Treasury is currently consulting on the regulation of cryptocurrencies [18], this remains the only existing regulation in the UK as of October 2021.

Global Cryptoasset Regulation

The legal status of cryptoassets varies around the world, but use is permitted in most countries with existing regulations usually in relation to combating money laundering. Notable exceptions include the Central American country of El Salvador, where Bitcoin was adopted as legal tender on 7th September 2021 [19], and China, where a total ban on cryptoasset trading and mining was imposed on 24th September 2021 [20] (with limited success [21]). In the USA, different states have adopted a variety of regulatory approaches. Wyoming has been described as the most crypto-friendly jurisdiction in the country, with legislation to

facilitate the holding of digital assets, while other states, such as Maryland, issue warnings about investing in cryptoassets [22]. Like the wide variation in legality, official attitudes towards cryptoassets also vary markedly between governments and political parties across relatively similar legal frameworks.

Because of the purposefully decentralised nature of cryptoassets, any attempts to restrict their use may prove difficult to implement [23].

The impacts of cryptoassets

Energy Usage

Because of the highly computationally intensive operational technologies of cryptocurrency, concerns have been voiced about the sustainability of cryptoassets; the Bitcoin network alone annually consumes more energy than the entire country of Poland [24], with the annual waste of IT and telecommunications equipment equivalent to that produced by the Netherlands [25].

Crypto-regionalism

Because of crypto-mining’s high energy usage, large-scale miners are known to seek locations with low electricity costs, cooler climates (Iceland meeting both of these criteria having significant crypto-mining activity [26] [27]), and permissive policy [28], with significant impacts on these localities [29], such as the restarting of defunct power generation facilities [30] and repurposing of closed industrial factories [31].

Inequalities

As a digital system, access to cryptoassets requires a base level of digital literacy, access to the internet, a compatible device, and the associated knowledge, potentially reducing accessibility. Conversely, cryptocurrency has been described as beneficial and financially liberating to those in developing countries as an accessible and cheap mechanism of value transfer free from intermediaries, circumventing the need for official bank accounts which can be difficult to obtain [32].

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