

Written evidence submitted by Positive Money

Positive Money welcomes the opportunity to respond to the Treasury Committee's inquiry into the crypto-asset industry.

[Positive Money](#) is a not-for-profit research and campaigning organisation, working towards reform of the money and banking system to support a fair, democratic and sustainable economy. We are funded by trusts, foundations and small donations.

We have been a leading civil society voice on digital currencies for a number of years, and were one of the first organisations in the UK to advocate for a central bank digital currency, publishing [Digital Cash: Why Central Banks Should Start Issuing Electronic Money](#) in 2016.

Key points

- As of yet, there are few convincing use cases for cryptoassets, including stablecoins, and the benefits offered by the industry appear unclear. However, cryptoassets pose substantial risks to consumers, financial stability, and the environment, as well as the ability for public authorities to carry out policymaking.
- Stablecoins are designed to offer more efficient payments than the current bank-based system, but this function would be better provided by central bank digital currencies (CBDC), with much less risk to consumers.
- The Bank of England should launch an account-based CBDC as an open platform, upon which finance and technology firms can build new payment services. This would provide risk-free universally accessible digital money, protecting financial stability and enabling innovation in finance and payments.
- Alongside the account-based CBDC platform, the Bank of England should issue a token-based form of 'digital cash', a bearer instrument version of CBDC with a higher standard of privacy protection.
- Without a CBDC, the arrival of 'systemic' stablecoins would increase financial stability risks by increasing the 'tiering' in the payments system.
- If crypto-assets like stablecoins are to function as a means of payment, they must be regulated like one, with regulation matching that of e-money or bank deposits. This would avoid regulatory arbitrage and guard against risks to monetary and financial stability.
- More stringent regulation of cryptoassets like Bitcoin is urgent to ensure consumer protection and mitigate financial risk, as well as environmental and economic concerns arising from its intensive energy use, particularly at a time when energy is scarce.

To what extent are crypto-assets when used as digital currencies (such as Stablecoin) likely to replace traditional currencies?

1. Crypto-assets are unable to meaningfully replace traditional forms of money, and could only begin to compete with them by mirroring their essential features and being subject to comparable regulatory regimes.

2. It is important to distinguish between crypto-assets that function primarily as instruments for speculation (such as Bitcoin), and those that are designed to function primarily as a means of exchange by shadowing fiat currencies (such as stablecoins).
3. Crypto-assets are typically highly volatile, with prices driven primarily by speculation, as most lack the fundamentals which investors usually rely on to price assets. Stablecoins attempt to solve this problem by promising to remain exchangeable 1:1 with existing national fiat currencies, such as the dollar. There are two main ways in which issuers of stablecoins seek to maintain their value - either by backing the stablecoin with other assets, or by controlling aspects of the asset (such as supply) with an algorithm. The latter is particularly controversial, with numerous attempts to ensure a stable currency through an algorithm ending in failure, most prominently in the recent case of Terra's collapse.¹ Such instability may be an inherent feature of algorithmically managed stablecoins.² There are also questions as to whether stablecoins which claim to be fully backed by high quality assets, such as Tether, are actually fulfilling this promise.³ Both of these issues point to the need for greater regulatory oversight for stablecoins, which are currently subject to much less stringent regulation than any equivalent assets.
4. Rather than replacing national currencies, stablecoins will likely play a more similar role to existing forms of electronic money (e-money): monetary instruments which simply shadow fiat currencies, with their value maintained by full backing with high quality liquid assets denominated in the national currency.
5. Most use-cases for stablecoins so far involve the pursuit of arbitrage opportunities - avoiding the regulatory 'burdens' of existing monetary instruments and payment systems, such as capital requirements, Know Your Customer and Anti-Money Laundering (KYC, AML) checks, and tax enforcement. A key use-case for existing stablecoins such as Tether is to provide a 'ramp' for users to convert holdings of cryptoassets into fiat currency and vice versa while avoiding regulations or law enforcement. Stablecoins have also served as the basis for crypto ponzi schemes, as in the case of Terra, where investors were promised unsustainable yields of near 20% if they 'staked' their coins, before the stablecoin crashed in value.
6. Other use-cases mooted by proponents include more efficient settlements of transactions, particularly for cross-border payments, due to their ability to sidestep the banking sector. Payments based on existing bank rails are indeed inefficient and costly, but (as argued below) a central bank digital currency (CBDC) would be able to offer unrivalled improvements in this regard, and without the corresponding risks inherent to stablecoins.

¹ <https://www.independent.co.uk/tech/terra-luna-ust-crypto-price-crash-b2076655.html>

² <https://bankunderground.co.uk/2019/03/28/can-stablecoins-be-stable/>

³ <https://www.wsj.com/articles/tether-says-audit-is-still-months-away-as-crypto-market-falters-11661568971>

7. Without a robust regulatory regime and active support from public institutions, crypto-assets will be unable to replace public money, such as cash or central bank reserves, as they do not have anywhere near the same legal, technical or institutional foundations to provide equivalent stability and trust, and would not be acceptable as payment for taxes. At best, stablecoins could compete with bank deposits, but if regulation requires that stablecoin issuers must maintain 1:1 backing with another asset, their ability to create new credit - which is the most lucrative source of revenue for money issuers - would be limited.
8. Another potentially viable use-case for stablecoins is circulating inside a 'walled garden' online marketplace, with the stablecoin being the only accepted means of payment and competing payment methods deliberately excluded by the network operator. Walled garden marketplaces would fall in line with the existing business models of big tech firms, but would negatively impact consumers by reducing competition in payments services. This would also increase the harms to consumers caused by surveillance, targeted advertising and coercive user interface designs.
9. Far from being a genuine financial or monetary innovation, "stablecoins" simply add another layer of private money over the existing layers of private money, which are all fundamentally backed by public money and credit (central bank reserves, state-provided deposit insurance schemes, government bonds, and so forth). They depend completely on the stability of the layers below for their value, without which they would revert to the volatility of any other speculative crypto asset, and be unusable as a systemic retail payment method (as the recent dramatic collapse in crypto asset market has demonstrated).
10. Cryptoassets, including stablecoins, are therefore unlikely to replace traditional fiat currencies. While they may be better at meeting the means of exchange and store of value functions of money than crypto-assets such as Bitcoin, stablecoins will still offer limited utility as a currency for as long as they fail to meet a crucial function of money, as a unit of account. This however could change if stablecoins are issued by entities with significant pricing power and large networks of users, who would be able to leverage network effects to promote mass adoption. This has been a significant concern for central banks, who anticipate systemic financial stability risks arising if big tech brands such as Facebook issue stablecoins which do not simply shadow existing currencies such as the dollar. Regardless, for as long as prices reference existing national currencies, any payments in cryptoassets will represent a form of countertrade rather than payment in a new currency.

What opportunities and risks would the introduction of a Bank of England Digital Currency bring?

11. The Bank of England issuing a central bank digital currency (CBDC) would offer significant opportunities for Britain. The fundamental benefit of a CBDC is its ability to remove our reliance on private banks to provide the public good of the payments system, which not only leaves large numbers of people financially excluded or exploited, but also leads to suboptimal outcomes for the wider economy.

12. Currently, the vast majority (around 80%) of money in the economy takes the form of private bank deposits, which commercial banks create when they make loans.⁴ Bank deposits are the only form of sterling-denominated money available to the public aside from physical notes and coins, and are therefore the only means through which households and non-bank businesses can make payments electronically. The essential utility function of the payments system, which the UK economy depends on to function, is therefore increasingly entangled with commercial banks' risky credit creation. This fundamental dependence of the payments system on the solvency of banks has led to 'too big to fail' banking, where the government is forced to bail out banks in order to save the payment system from collapsing, as we saw in the global financial crisis.
13. Launching a CBDC would give the public access to a means of electronic payment which is safely separated from banks' riskier lending activities. As Andy Haldane observed while chief economist at the Bank of England, such an innovation "would reduce, at source, the fragilities in the banking model that have been causing financial crises for over 800 years."⁵
14. Access to risk-free public money is under threat with the decline of cash. Similar to physical notes and coins, a CBDC would offer the public access to a fully-risk free form of money, and would help provide a crucial anchor of trust that private forms of money, such as bank deposits, depend on to maintain a stable value via convertibility.⁶
15. Banks are currently able to settle payments in central bank money through accounts at the Bank of England (which they have exclusive access to). An account-based retail CBDC would simply open this privilege up to the wider public, allowing individuals and businesses to transact instantaneously without relying on banks to serve as middlemen. This would allow the public to benefit from unrivalled efficiency in payments and reduced transaction costs.
16. The UK's current bank-based payment system suffers from high degrees of market concentration, which allows payment providers to charge merchants inflated fees (with charges for SMEs particularly excessive), which are then passed on to consumers in the form of higher prices.⁷ By offering a new more-efficient and lower cost payment option, a CBDC would inject much-needed competition to break up concentrated market power, to the benefit of consumers. By opening up its balance sheet to a wider range of financial and technology firms through a CBDC, the Bank of England could provide a new foundation for innovation in the sector: challenger banks, fintechs and purpose-led financial organisations could compete on a more even footing with the large incumbent banks.

⁴ <https://www.bankofengland.co.uk/knowledgebank/how-is-money-created>

⁵ <https://www.bankofengland.co.uk/speech/2021/june/andy-haldane-speech-at-the-institute-for-government-on-the-changes-in-monetary-policy>

⁶ <https://positivemoney.org/money-we-trust/>

⁷ <https://www.bankofengland.co.uk/-/media/boe/files/speech/2020/seizing-the-opportunities-from-digital-finance-speech-by-andy-haldane.pdf>

17. A CBDC also offers benefits for economic policymaking, by enabling the government to make direct transfers to households and businesses. Especially if remunerated, it could offer a much fairer and more effective means of conducting monetary policy than the current approach, which relies on changes to bank's accounts at the central bank being passed onto the wider economy, with significant 'leakages', such as asset price inflation when rates are lowered, and wider credit-crunches and collateral damage when rates are increased.
18. For instance, rather than creating new money through quantitative easing in the hope that it 'trickles down' into the wider economy, the Bank of England would be able to stimulate economic activity more effectively by distributing new money directly to households via CBDC accounts, mitigating negative side effects such as asset price inflation. Likewise, if policymakers wish to slow down economic activity to combat inflation, they would be able to do so much more effectively by directly increasing interest paid on CBDC balances to encourage saving, rather than relying on banks to pass higher interest rates into deposits, which they are averse to doing.⁸ Like with banks' reserve accounts, remuneration on CBDC accounts could also be 'tiered' to enable more targeted and efficient usage of monetary policy.⁹
19. A CBDC also provides the government with an opportunity to recapture a share of seigniorage - the profit gained from issuing new money - from private financial institutions. Banks currently gain substantial profits by issuing new money in the form of bank deposits when they make loans, but cash issuance by the Bank of England and Royal Mint also provides a direct profit for the government (historically, a much greater fraction of seigniorage revenues were accrued by the government). Issuing a CBDC should therefore be done under comparable accounting conventions to physical cash issuance.
20. Alongside an account-based CBDC, the Bank of England should provide a token-based form of digital cash which replicates the key features of physical notes and coins, such as a high standard of privacy protection and universal accessibility without requiring a bank account. A compelling model for this has been put forward in the ECASH Act introduced to the US Congress.¹⁰ Digital cash should be designed specifically to enable vulnerable, disadvantaged or otherwise excluded people to participate in the economy.
21. There is a risk of policymakers, whether by intention or by accident, designing a version of CBDC that enables unfair or discriminatory actions against users, and fails to respect rights to privacy. The risk would be compounded if the decline of physical cash continues: in a near-cashless economy, failing to introduce digital cash that genuinely protects user privacy could result in a loss of public trust in the Bank of England and the government. In the extreme, this could drive users away from using regulated forms of money and towards using crypto assets outside the regulatory

⁸<https://www.thetimes.co.uk/article/banks-failing-to-pass-on-benefits-of-rising-uk-interest-rates-to-savers-cc8pq87lw>

⁹<https://www.suerf.org/policynotes/7321/controlling-cbdc-through-tiered-remuneration>

¹⁰<https://ecashact.us/>

perimeter, which have a popular (if underserved) reputation for respecting user privacy. A migration of users away from regulated payment methods would dramatically weaken the Bank of England's ability to fulfil its mandate for price and financial stability.

What impact could the use of crypto-assets have on social inclusion?

22. Crypto-assets generally have a high barrier to entry, and are operated in the interests of small groups of software developers and investors. While the most technically proficient actors operating in the sector are able to achieve a degree of anonymity for their activity, the average user is only able to achieve a weak level of anonymity that is easily compromised. Transactions are irreversible, and the market is unregulated.
23. As a result, there is no accountability for malpractice in the crypto sector, and rife with market manipulation, scams and fraud. There is little prospect for improvements to social inclusion in such an environment. A single mistake can result in a user's wallet being emptied of valuable tokens and payment history being publicly exposed.

How can distributed ledger technology be applied in the financial services sector?

24. So far, no form of money or asset utilising distributed ledger technology (DLT) has managed to overcome the challenges of operating at scale with the stability and efficiency that would be required for a systemic payment method. Crypto-assets that utilise DLT have significant downsides: networks that use 'proof-of-work' designs have transaction costs that are much higher than cash and bank card payments, and those that utilise 'proof-of-stake' as an alternative centralise more control over the network with the most invested parties. There may be viable use cases for DLT in the finance sector outside of retail payments, but even in these applications it is often questionable whether the benefits justify the downsides, which can include increased operating costs, reduced privacy protection, and novel security risks, and whether the benefits of DLT could not be gained through alternate means (such as contractual agreements). Proof-of-stake forms of DLT may compare favourably with proof-of-work forms, but the energy requirements are still many times that of conventional payments methods.¹¹
25. In fact, the primary downside of DLT is put forward as the main positive feature by its advocates: the ledger cannot be renegotiated or rolled back, leaving the user with the full burden of scams and fraud. In the conventional banking system, such costs are borne by the banking and payment firms operating in the financial sector, who are most able to bear the costs. Banks can also use their centralised control over the ledger to take further beneficial actions, such as blocking suspicious payments and attempting to recover stolen funds.

What work has the Government (and its associated bodies) done to understand, prepare for and, where relevant, encourage changes that may be brought about by increased adoption of crypto-assets?

¹¹ http://blockchain.cs.ucl.ac.uk/wp-content/uploads/2021/11/UCL_CBT_DPS_Q32021_updated-2.pdf

26. After consultation, the government is attempting to bring cryptoassets (starting with stablecoins) into the regulatory perimeter as part of the Financial Services and Markets Bill, under a new 'digital settlement asset' definition. This would see stablecoins primarily regulated through existing provisions for electronic money ('e-money') and payment systems. This is a sensible approach if it means that like e-money, stablecoins will be fully backed by bank deposits or other high quality liquid assets, giving users confidence that they will be able to easily exchange their stablecoins for pound sterling.

How might the Government's processes – for instance the tax system - adapt should crypto-assets be adopted more widely?

27. Payment of taxes in cryptoassets should only be accepted if, like bank deposits, the transaction is ultimately settled with state issued money (i.e central bank liabilities, such as reserves or cash). The settlement of taxes in monetary instruments not issued by the state could otherwise have severe consequences for monetary stability.
28. To tax financial flows moving through crypto-assets, the assets would have to circulate within the regulatory perimeter, and be subject to the same audits, checks and safety mechanisms that bank deposits and other systemic forms of money. There is no prospect of crypto-assets meeting these requirements without essentially replicating the key features of bank deposits or e-money, such as being backed by high quality liquid assets.
29. A key benefit of crypto-assets for some users is their potential as instruments for tax avoidance, which may require a more sophisticated approach from HMRC. While the anonymous and 'decentralised' aspects of crypto-assets can make tax collection more challenging, it is still possible for successful tax enforcement through crypto exchanges. As such, it is important for exchanges to undertake Know Your Customer and Anti-Money Laundering checks, and for HMRC to work with exchanges to enforce tax collection (such as for capital gains tax).

Could regulation benefit crypto-asset start-ups by improving consumer trust and resilience?

30. The main barrier for crypto-asset adoption is perhaps a lack of consumer trust. If consumers are to use crypto-assets for everyday payments, they must be confident that their tokens can easily be redeemed in fiat currency. Regulating crypto-assets such as stablecoins in a similar manner to e-money, where full-backing with deposits or other high quality liquid assets is required, would therefore ultimately benefit the industry and consumers.

How are Governments and regulators in other countries approaching crypto-assets, and what lessons can the UK learn from overseas?

31. The emerging approach in the United States for stablecoins is for issuers to be

regulated in a similar manner to banks, as Insured Depository Institutions.¹²This would help avoid the risks of stablecoins becoming a form of unsuitably regulated 'shadow' money, as has been seen with money market mutual funds. UK policymakers should consider whether stablecoins should be regulated similarly to e-money (as appears to be the current approach) or bank deposits. Both are suitably prudent approaches for a new monetary instrument, though banking regulations may be more burdensome. A more streamlined form of 'narrow banking' regulation could be more appropriate.

The environmental and resource intensity of using crypto-asset technology.

32. The energy intensity of crypto technology is well documented, with analysis from the University of Cambridge showing that Bitcoin's total energy usage is comparable to that of whole countries, such as Argentina.¹³ If the Bitcoin and Ethereum networks were a country, it would be the 21st biggest consumer of energy, ahead of Indonesia, Thailand and Ukraine.¹⁴ A single Bitcoin transaction currently uses the same amount of energy as the average US household consumes over 49.51 days.¹⁵
33. By their very nature, cryptocurrencies such as Bitcoin and Ethereum are particularly unsustainable, as they are based on a proof-of-work algorithm, which means that the larger the network gets, the more computing power (and therefore energy usage) is required to add to the blockchain in order to 'mine' the currency and process transactions while enforcing managed scarcity.
34. It is doubtful whether the world has sufficient energy capacity for such currencies to replace fiat money, which is a claim often advanced by proponents to encourage retail investment.¹⁶ Based on an analysis from the Financial Times' Jamie Powell in 2018, if Bitcoin was to replace all non-cash transactions by 2028, each year it would use more than 60 times the amount of energy the world consumed in 2016, and would require 44,000 nuclear power plants (100 times the number of reactors in operation today).¹⁷ Powell calculates that the energy cost of (based on much lower 2018 energy prices) would be over \$10,000 for each transaction.
35. Bitcoin evangelists have claimed for several years now that the currency will move to a more efficient proof-of-stake system. But this has not happened, chiefly because the technology requires consensus across the network to change protocols, and those with most mining power have a vested interest to oppose a shift away from proof-of-work. We have already seen this tension play out in the Bitcoin Cash 'hard fork' in 2017, where a split between those who wanted Bitcoin to serve as an efficient means of exchange (like cash) and those who wanted to maintain Bitcoin's artificial scarcity saw the latter win out. Especially at a time where energy is scarce, it is

¹² https://home.treasury.gov/system/files/136/StableCoinReport_Nov1_508.pdf

¹³ <https://ccaf.io/cbeci/index/comparisons>

¹⁴ <https://digiconomist.net/ethereum-energy-consumption>

¹⁵ <https://digiconomist.net/bitcoin-energy-consumption>

¹⁶ <https://markets.businessinsider.com/news/cryptocurrencies/bitcoin-vs-fiat-global-finance-2050-crypto-experts-finder-2021-7>

¹⁷ <https://www.ft.com/content/0f5e0757-ced0-3753-a0a5-6364da623b08>

unjustifiable for such huge amounts to be wasted on a technology which offers such little utility, and has such significant downsides, including facilitating crime and fraud. As outlined above, Bitcoin's use case as a digital version of cash could be achieved much more effectively and sustainably by a token-based form of CBDC that guarantees user privacy.

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