

# The digital pound – speech by Jon Cunliffe

Given at UK Finance

Published on 07 February 2023

Jon Cunliffe says it is likely that a retail, general purpose digital central bank currency - a digital pound - will be needed by the end of this decade. He discusses why this is the case, what the model could look like and how the digital pound may sit within the digital payments landscape.

## Speech

As some of you may have seen, the Bank of England and the Treasury have today published, as a **Consultation Paper**, the report of the Bank of England – HM Treasury Taskforce on the introduction in the UK of a central bank digital currency – a ‘digital pound’. So I am grateful for the opportunity today to set out some of the thinking behind the report and the next steps we propose.

First, however, I should set out the headline conclusions of the Taskforce.

Our assessment is that on current trends it is likely that a retail, general purpose digital central bank currency - a **digital pound** - will be needed in the UK. This would be a new, digital form of money, issued by the Bank of England for use by households and businesses for everyday payments.

A digital pound would be a very substantial financial infrastructure project that would take several years to complete. It would, as many in this audience know, have major implications for the way we transact with each other and, more broadly, for the financial sector and the economy in general. The Taskforce’s conclusion is that we are not yet at a point where a firm decision can be made to implement a digital pound.

However, in view of the likely need and the lead time to introduction, the Bank and The Treasury, will now proceed to the next stage of detailed policy and technical development of the digital pound - including the development of a technical blueprint.

This stage will take around two to three years following which a decision will be made whether or not to proceed to the next stage and implement a digital pound in the UK. The work over the next two to three years will inform that decision and will reduce the lead time to launch should the decision at the end of this stage be to implement the digital pound in the UK, which could then be introduced in the second half of the decade.

In this next stage of detailed policy and technical work, including the development of a technical blueprint for the chosen model of the digital pound, we will work closely with private sector partners on proofs of concept, experimentation as well as on the development of the blueprint

itself. We expect that this research and development work will have important benefits for both the Bank and the fintech industry even if the eventual decision is not to introduce a digital pound.

In order to proceed to the next stage, we need clarity about the model of a digital pound to be developed. The report published today sets out for consultation the key features of the model we propose to take forward. The report is accompanied by a Technology Working Paper that sets out an accompanying illustrative conceptual model and seeks feedback on potential approaches to key technology considerations.

Before I set this out in further detail, there is one important point I should make. Given all the attention that the cryptoasset world, with its attendant gyrations and failures, has received in recent years, it is perhaps understandable, that the digital pound can be confused in peoples' minds with cryptoassets such as bitcoin. I should take this opportunity to correct this misapprehension. Indeed, nothing could be further from the truth.

The majority of cryptoassets are highly speculative assets, whose value is extremely volatile, because there is nothing behind them. They have no intrinsic value. For that reason, they are not suitable and not used for general payment purposes. One can think of them as more akin to a bet than to trusted money. The digital pound would be a safe, trusted form of money accepted for everyday transactions by households and firms, in the same way as Bank of England notes are today. It is of course possible that some of the technologies developed in the crypto world might be useful in the development of a digital pound, but as I will explain later, there is a large range of technologies that are now under consideration.

## **Why is a digital pound likely to be needed?**

There are a number of considerations behind our assessment that a digital pound is likely to be needed. The assessment is forward looking. It turns first on current trends in the way we use money to make payments and the potential of emerging digital technologies and second on the public policy response necessary to ensure innovation and competition can flourish without jeopardising the safety and uniformity of the money we use in the UK.

Money is at its root a social convention<sup>[1]</sup> based on trust that allows us to store, transfer and settle obligations we hold on each other in society. It's safe and efficient operation is, as history has demonstrated, fundamental to social and economic stability. The forms that money takes and the ways it is used have changed throughout history driven by changes in technology and the changing demands of ever more sophisticated and complex economies. However, trust in money is the bedrock on which that innovation is built.

Two forms of money are currently available to the public<sup>[2]</sup> throughout the UK. The Bank of England and the Royal Mint issue a physical form of money to the public – bank notes and coins, otherwise known as 'cash'. Private commercial banks issue predominantly digital money in the form of electronic transfers between bank deposit accounts<sup>[3]</sup>.

We have seen major changes in recent years in the form of use of money to make payments. In the mid-1960s, most workers were paid weekly in cash, and around 70% of the population did not have a bank account.<sup>[4]</sup> Very few had access to credit or debit cards. Consequently, for every £100 of funds that people held to make payments, over a third would be held as cash. Nowadays, less than 5% is held as cash. Even 15 years ago, 60% of transactions in the UK used physical cash; pretty much everyone in this room would have carried enough for everyday transactions.

In 2021 only 15% of transactions involved physical money. Technology and the increasing digitalisation of everyday life has transformed the way we use money. Private commercial bank money accounted for 85% of the payments made by the public. Within that, debit and credit card transactions accounted for 69% of transactions. Contactless payment has made such transactions much easier for everyday life. And the growth of internet commerce has required the use of digital money.

It is always challenging to forecast how technological advances and social trends will play out. Few at the turn of this century would have predicted the development and growth of a massive and dominant market and social platforms. Or how the advances in the functionality of the smartphone, as most recently seen during the pandemic, would transform daily lives.

But while we cannot know with certainty how current trends in payments and technology will play out, it would be complacent to assume that developments in money and payments will end with the status quo.

There are already in existence new digital technologies that are being applied to the digital representation, transfer and storing of money like obligations. These offer the prospect of new possibilities in the way money and payments can be configured to interact with digital processes. Programmable money, for example, could enable the development of smart contracts which carry out specific actions based on pre-defined actions and conditions<sup>[5]</sup>.

Moreover, money and payments are no longer the exclusive province of banks. New, non-bank players have already been successful in providing innovative payment services. Looking forward a wide range of non-bank payment firms, including bigtechs and some players from the crypto universe, are becoming increasingly interested in the possibilities of these new technologies in money and payments.

Our assessment that a digital pound is likely to be needed is grounded first in the view that further decline in cash use and further development in the digitalisation of money and payments is likely and second in the view that these developments raise important questions to which the Bank of England and the Government should respond.

As far as the decline of cash is concerned, the immediate response is to make sure cash will remain available to any and all that want to use it. The Bank has made clear that we will continue

to produce it and the Government is taking powers under the Financial Services and Markets Bill to give the Bank of England and FCA new powers to ensure the future effectiveness, resilience, and sustainability of the cash ecosystem<sup>[6]</sup>.

However, we cannot ignore the fact that the safest form of money, 'public' money, that it is to say money issued by the state for general use, will become increasingly less useful and useable and of shrinking relevance to a large part of the population. Nor can we ignore the likelihood that we will see the emergence of new forms of money, offering new possibilities and issued by new as well as established players.

This raises, particularly for the Bank of England, the question of how we can continue to ensure that all of the types of money used in the UK are denominated in Sterling, remain safe and that each is interchangeable on demand and to all of the other types of money without loss of value, including publicly issued, Bank of England money.

We ensure trust in money at present by regulation of the commercial banks that issue money, by requiring banks to settle amongst themselves in Bank of England money (i.e. Bank of England reserves) and, crucially, by requiring all private money to be exchangeable for Bank of England money, cash, on demand by the holder and without loss of value. Alongside regulation, the provision of Bank of England money to the public and reserve money to commercial banks institutions anchors the confidence, uniformity and interchangeability of money in the UK. Our assessment is that future developments in payments and money will make it likely that, alongside regulation, we will in future need a digital pound, issued by the Bank of England to perform this anchor function.

The experience of digitalisation is that new products and services, enabled by new technology, can be adopted rapidly at scale. The Government has identified several characteristics of digital markets that may lead to concentration. Such characteristics include network effects, economies of scale and scope and data advantages, which can act as barriers to entry. This suggests that the future development of private money issuance could tend towards a small number of firms taking a significant market share.

While concentration and market power are not inherently harmful and may reflect innovative products and services, they can damage consumer choice, competition and innovation. Dominant issuers of new forms of private digital money may create 'walled gardens' - payment systems that are not fully interoperable or restrict the development by smaller firms of payment services using the money they issue.

A digital pound issued by the Bank of England would provide an alternative, public, digital money - an open platform, which would be available to all developers of new digital payment services. Moreover, if designed appropriately, a digital pound could complement and support new forms of private digital money and payment services, for example by acting as the 'bridging asset' between

different platforms enabling convertibility. By establishing technical standards available to all, it could help ensure interoperability between different platforms. Our assessment is that a digital pound, an alternative, publicly issued form of digital money, available to all, would help ensure competition and innovation and drive efficiency in payments.

There are other important potential benefits. There is scope for innovation to generate further efficiencies in payments, allowing for faster and/or cheaper payments. That improvement might be facilitated by new technologies and new entrants to payments markets offering new functionalities. For example, small and medium-sized merchants pay far higher fees for accepting card payments than larger businesses[7]. Although these costs are not paid directly by customers, they may feed into higher prices in the economy overall. And cross-border transactions in particular are often very costly. The average cost of a payment sent to another country is about 6% of the value sent[8].

The digital pound could also complement existing financial inclusion initiatives, for example if it were able to provide for offline payments. It could, with international co-operation, present an opportunity to improve cross-border payments. And, by providing a highly resilient, alternative payment rail it could reinforce the overall resilience of the UK payments system. These motivations are explored more fully in the paper we have published today.

## The model for a digital pound

Our assessment, therefore is that on current trends a digital pound would have benefits and is likely to be needed. However, the Taskforce concluded, that we are not at present at a point at which a firm decision could be taken to implement the digital pound. Further work, especially detailed technical exploration and development is necessary to assess the feasibility and cost of what would be a very major public, financial infrastructure project.

We expect this intensive exploration and technical development phase to take around three years. It will produce a technical blueprint for the digital pound. The work will not delay but rather shorten the lead time to actual launch should a firm decision be taken in the future to implement the digital pound so that a digital pound could be introduced in the second half of the decade. And during this next phase, we will be able to see more evidence of how the current trends and changes in payments and money are playing out which will help to inform a future decision.

In order to proceed to the next phase we need clarity about the model of the digital pound we wish to develop. We have today set out that model in detail for consultation. We are seeking industry and public views on the key design choices that determine the model. The Consultation Paper is accompanied by a [Technical Working Paper](#) which sets out our current thinking on the relevant technology and seeks feedback on the approaches we propose to consider.

There is not time today to go through the model in detail, but I will briefly set out some of the most important details of what we propose.

We envisage the digital pound as a partnership with the private sector. The Bank would provide the digital pound and the central infrastructure, including the 'core ledger'. Private sector firms – which could be banks or approved non-bank firms – would provide the interface between the Bank's central infrastructure and users by offering wallets and payment services. These private companies would be able to integrate the digital pound, as the settlement asset, into the services they would offer to wallet holders.

The wallets would be operated on a 'pass-through' basis. That is to say, they would not constitute a claim on the wallet provider in the way that a bank account is a claim on a bank. Nor would they represent a custody arrangement. Rather, the wallets would hold all of the customer related information and 'pass-through' the customers instructions to the Bank's infrastructure. All of the digital pounds would be held on the Bank of England's central ledger.

Privacy has been a major theme of the Taskforce's engagement with industry and the public. We intend that the digital pound would have the same (or stronger) privacy protections as bank accounts, debit cards or cheques which are now used for 85% of transactions in the economy.

Individuals' personal details and transaction records would be known only to their private sector wallet provider in the same way they are for bank account providers today (and subject to the same privacy protections). But individuals' details and records would not be known by the Government or the Bank of England. In this way, the digital pound would provide privacy while also protecting against fraud and financial crime.

The digital pound would not be an anonymous bearer instrument like cash, but physical cash would remain available to those who wanted to use it.

Neither the Government nor the Bank would program a digital pound or restrict how it was spent. Instead, the Bank would provide the infrastructure and minimum functionality for the private sector to provide programmability features for users. Those features would require user consent.

As with banknotes and many current accounts, no interest would be paid on a digital pound. Its purpose would be as a means of transaction - to make and receive payments - rather than as a savings product. Nor do we see the digital pound as a monetary policy instrument and as such it would, like cash, have neither positive nor negative remuneration.

In our 2021 Discussion Paper on 'New Forms of Digital Money', we explored the financial stability risks and impact on the banking sector of the emergence of non-bank digital monies. Modelling of an illustrative scenario suggested that retail deposit outflows into digital money would affect banks' funding and could lead to higher bank lending rates, although the impact was expected to be modest. This modelling was based on assumptions, set to be highly cautious<sup>[9]</sup>, about the amount of non-bank digital money households and businesses might want to hold and hence the scale of possible outflows from retail bank deposits.



We cannot, of course, know ex ante, how households and businesses would respond to a digital pound and how much they would want to hold. We therefore propose that to manage financial stability risks, initially at any rate, the digital pound would need to be designed in a way that enabled some restrictions to be placed on amount an individual or business could hold.

We propose a limit of between £10,000 and £20,000 per individual as the appropriate balance between managing risks and supporting wide usability of the digital pound. A limit of £10,000 would mean that three quarters of people could receive their pay in digital pounds, while a £20,000 limit would allow almost everyone to receive their pay in digital pounds<sup>[10]</sup>, keeping outflows from the banking system broadly within the assumptions set out in the Bank's earlier modelling work.

We are, as I have said, also seeking feedback on the technical approaches for such a model of the digital pound. The Technology Working Paper accompanying the Consultation Paper sets out an illustrative and complementary conceptual model consisting of a core ledger, API layer, analytics and alias service. The core ledger operated by the Bank might be centralised, running as a traditional database, or it might use Distributed Ledger Technology (whether a blockchain or another form of the technology).

The paper includes key questions which will be further explored in the next phase of work, including for example which privacy-enhancing technologies might support our policy objectives and what features of an API for the digital pound would best enable innovative use cases.

## **The digital pound within a digital payments landscape**

Finally, I want to cover briefly how a retail digital pound, designed for use by firms and households in everyday transactions, might sit alongside a wholesale central bank digital currency, privately issued digital money, and also alongside central bank digital currencies issued by other jurisdictions.

On the question of a 'wholesale CBDC' the first point to emphasise is that for the Bank this is not a question of either one or the other of 'retail or wholesale'. We are working extensively on both areas, including through the renewal of the digital infrastructure we currently use to provide money to commercial banks in the form of Bank of England reserves.

Many of the technologies which I referred to above offer the potential for wholesale financial transactions to take place at lower cost, higher speed and with greater resilience. In many cases the same considerations around the potential benefits of new technological approaches, for example the deployment of smart contracts, atomic settlement or potential resilience benefits, apply to the wholesale world.

However, wholesale markets differ from retail in several respects and a digital pound designed for everyday use may not be best suited for wholesale financial markets. Our view is that for such



markets there are other routes that might more quickly and effectively allow for new forms of digital representation, the 'tokenisation', of central bank money to be used in financial transactions.

There is now a great deal of experimentation in this area among central banks, including the Bank of England, and within the private sector. Some of the approaches proposed would involve a greater role for the private sector, particularly the large financial firms that already have access to a form of digital Bank of England money, in the tokenisation and transfer of central bank money including between currencies<sup>[11]</sup>. Other experiments are testing the feasibility of networks of central bank digital currency systems for cross border wholesale transactions<sup>[12]</sup>.

The Bank is looking particularly at how we can exploit the capabilities of the new RTGS system we are building, with the new core RTGS settlement engine launching in 2024. We are examining features that could make it easier to connect to the RTGS service, including a broader range of APIs, improved availability, with near 24/7 operation and synchronisation of the RTGS system with other ledgers including those using distributed ledger technology and tokenisation of assets<sup>[13]</sup>.

At the same time, the Bank of England is working with the FCA and HMT to establish a sandbox to explore innovative forms of digital settlement of wholesale financial market transactions. We are also actively engaged with the work of the BIS Innovation Hub, including through its London Centre, at experiments to look at the potential for improved settlement.

All of this work will proceed alongside the next phase of development of the retail digital pound. We envisage that much of the technical work in this phase will provide insights that will be of significant value to our work on the future digitalisation of wholesale financial markets.

The further development of the digital pound will also benefit the Bank's work on private sector stablecoins<sup>[14]</sup>. The Financial Services and Markets Bill (2023) provides powers for the Bank of England to regulate stablecoins used in systemic payment systems in the UK.

As with wholesale CBDC, this is not a question of whether we have a digital pound issued by the Bank of England or private sector stablecoins issued by private sector firms. In a future payments landscape, there could be opportunities for privately issued stablecoins, regulated to the same standards as we regulate other forms of privately issued money.

We envisage that these could operate alongside the digital pound and alongside commercial bank money and cash. The digital pound could act as a bridging asset between different types of privately issued digital money and establish standards for interoperability. And, crucially, the requirement for privately issued digital money to be exchangeable on demand and at par for Bank of England digital pounds would help secure the interchangeability and uniformity of money in the UK.

Finally, many central banks, across the globe are exploring the issuance of a central bank digital currency for both retail and wholesale purposes. A few have now been launched<sup>[15]</sup>.

There is clearly a great opportunity and a great need for international cooperation in this area. Interoperability between national and regional central bank digital currencies could bring substantial benefits by reducing the cost and frictions in cross border payments. At the same time, there are broader macro-economic and geopolitical issues that need to be considered.

The Bank of England is working actively on these issues with international counterparts through the Bank for International Settlements Committee on Payments and Market Infrastructures (CPMI), through the G7, the G20 and FSB and through close cooperation with a small group of advanced economy central banks<sup>[16]</sup>.

## Conclusion

To conclude, the Consultation Paper and accompanying Technology Working Paper marks the end of the first stage of the work of the Bank of England – HM Treasury Taskforce. It sets out: our assessment that a digital pound issued by the Bank of England is likely to be needed; the next phase of work necessary to enable a firm decision to be taken in the future on whether to implement the digital pound; and consults on the model we now propose to develop.

The consultation will run for four months and end on the 7th June 2023. The Bank and the Treasury will then review the responses and consider whether changes to the proposed model are necessary. We will publish our response to the consultation.

We will then engage with private sector firms and other stakeholders on the next stage of work. This will include technological experimentation, particularly through collaboration with the private sector on proofs of concept<sup>[17]</sup>. This work will support the feasibility of the proposed model, the refinement of the associated technical requirements and the development of a technological blueprint for the digital pound. Such a blueprint will provide evidence that will allow us to evaluate the feasibility and costs of developing a digital pound. This will be the keystone of our assessment of whether or not to proceed to build.

We have made no decision yet on whether a digital pound would use DLT. Our technology working paper sets out high-level requirements for a ledger, and makes clear that in principle these could be fulfilled by conventional or DLT technology. But it is clear that experimentation with DLT, whether private or public, will be important to ensure it is appropriately considered. We will be putting in place the capabilities and mechanisms to increase our technology expertise, and to enhance our ways of working with DLT technology providers and those seeking to deploy DLT in finance, both through the FMI Sandbox and the digital pound design phase.




Throughout the next phase we hope to continue to benefit from a wide range of views and expert advice on the digital pound. This consultation is an important element in that regard, as is the continued work of the Engagement and Technology Forums which have supported the Taskforce through the first stage of its work and which will continue.





The money we use and the way we pay has changed throughout history, driven by technology and the changing needs of society. We have seen significant changes in recent years and current trends suggest that we are likely to see further major change as technology and the digitalisation of everyday life advance.

The proposals set out today are designed to ensure that the UK is well placed to take advantage of the benefits that these changes can offer, while ensuring that we preserve the safety and uniformity of money in the UK.

Thank you.

I would like to thank Marilyne Tolle, Ali Aswad, Shiv Chowla, Katie Fortune, Stephanie Haffner, Dovile Naktinyte, Zaki Said, Simon Scorer, Danny Russell, Michael Yoganayagam and Cormac Sullivan for their help in preparing the text. I would like to thank Andrew Bailey, Sarah Breeden, Ben Broadbent, Victoria Cleland, Andrew Hauser and Tom Mutton for their comments.

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1. To function money relies on a shared understanding that the relevant instrument can be used to calibrate, exchange, store and settle claims. For further discussion on this point see recent speeches 'It's Time to Talk about Money' (2020) and 'Do We Need Public Money (2021)'.
  2. The Bank of England also issues reserves to financial institutions. This is a form of wholesale money that allows regulated firms to hold claims on the Bank of England.
  3. Only the Bank of England issues banknotes in England and Wales, but six banks in Scotland and Northern Ireland also issue banknotes, backed largely by assets at the Bank of England. See [Scottish and Northern Ireland banknotes | Bank of England](#) and the Scottish and Northern Irish Banknotes Regulations (2009) for further details.
  4. The Payments of Wages Act 1960, as amended by the Truck Act.
  5. Some examples of programmable functionality might include: instantaneous currency exchanges with reduced settlement risk; more efficient real estate purchases whereby all parties' transactions are executed simultaneously by a smart contract; or an automated payment made by a vehicle at a toll booth.
  6. [Financial Services and Markets Bill \(2023\)](#) . In December 2022, the Bank of England published a [consultation](#) , closing on 10 February, setting how it intends to use these new powers.
  7. See for example Haldane, A.: 'Seizing the Opportunities from Digital Finance' (2020).
  8. World Bank (2022) – Remittances Prices Worldwide Quarterly.
  9. The Illustrative Scenario assumed demand for the digital pound was around 20% of retail and business deposits, which was equivalent to nearly all transactional deposits in the banking system. This assumption is particularly cautious for higher interest rate environments when deposits would be expected to pay holders somewhat more interest than an (unremunerated) digital pound.
  10. Specifically, a limit of £10,000 would allow 75% of UK income earners to hold their salary, pre-existing balances as well as an illustrative 10% bonus or overtime payment.
  11. See for example the work the Bank of England has done with regard to [omnibus accounts](#).
  12. See for example BIS Innovation Hub projects looking at this topic - such as [mBridge](#) , Icebreaker, Dunbar and Jura.

13. Last year the Bank set out its thinking and approach on many of these elements through a consultation on the roadmap for [RTGS beyond 2024](#). See also [The road to enhanced payments - speech by Victoria Cleland | Bank of England](#). As noted, this effort is complemented by work ongoing at the BIS Innovation Hub London Centre to look at the potential benefits from synchronisation under Project Meridian.
  14. See Bank of England: 'New Forms of Digital Money (2021)' - Stablecoins are cryptoassets that aim to reduce volatility by pegging their value to government-sponsored – or 'fiat' – currencies.
  15. For an overview see [Gaining momentum – Results of the 2021 BIS survey on central bank digital currencies](#) .
  16. See for Example '[Central bank digital currencies: foundational principles and core features](#) ' (2020) and the [series of reports](#)  on digital currency aspects (e.g. financial stability, system design) published in 2021.
  17. These are likely to involve testing individual components of the digital pound architecture (against standards built on the considerations set out in our Technology Working Paper). [Project Rosalind](#) , being run out of the London Centre of the BIS Innovation Hub is one example of the kind of work we envisage. That project is currently running a tech sprint and expressions of interest are open until 10 February.
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