The fiscal benefits of a digital pound

PositiveMoney

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The responsibility for the content and any remaining errors remains exclusively with the author.

Summary

A digital pound, also known as a UK central bank digital currency (CBDC), is expected to be introduced by the Bank of England and Treasury in the second half of this decade. Through the 'seigniorage' benefits of lower borrowing costs, it can be estimated that, by 2029, a digital pound would increase government fiscal space by between around £15bn a year in lower adoption scenarios and upwards of £30bn a year in higher adoption scenarios. This would be enough to cover most, if not all, of the £28bn a year green prosperity plan previously proposed by the Labour Party.

This briefing therefore recommends that the government adopts a digital pound for its own spending, thus encouraging a higher adoption scenario and maximising the fiscal benefits. We explore how seigniorage revenue could be used to invest in a fair green transition and long-term economic development through a decentralised national development bank, which can channel investment into infrastructure projects and local authorities, as well as on-lending to stakeholder banks.

Recommendations:

I. The government and Office for Budget Responsibility (OBR) forecasts the potential impact of a digital pound on the government's fiscal position.

II. The government should seek to maximise the full fiscal benefit of a digital pound by using it for its own disbursements and cash management.

III. The government should develop a framework for reinvesting seigniorage profits from a digital pound into the real economy, such as through a national development bank which could channel funds into a just green transition.

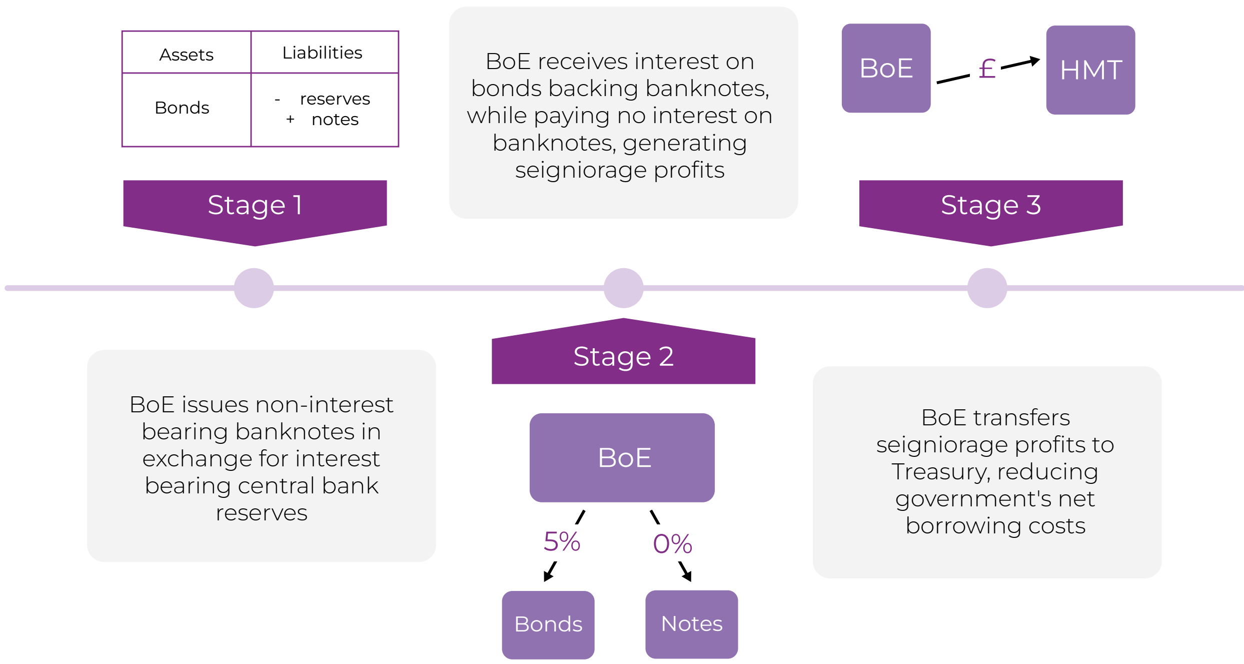
What is a digital pound?

The Treasury and the Bank of England (BoE) judge that a digital pound is likely to be needed by the end of the decade, in order to safeguard the stability of the monetary system and enable innovation in payments.[1] A digital pound would be a UK central bank digital currency (CBDC) - a new form of publicly-issued money, like physical cash, accessible to ordinary households and businesses in digital form. Crucially, a digital pound should not be implemented as a replacement for physical cash, but instead as a digital counterpart to the UK's cash system, securing the public benefits of cash within an increasingly digital economy.

While much of the policy debate surrounding the digital pound has so far focused on technical design considerations, particularly in regards to privacy and financial stability,[2] much less attention has been paid to the opportunity it presents to enable greater public investment via increased seigniorage revenue.

Digital pound seigniorage

An often overlooked benefit of a digital pound is its potential to significantly reduce public borrowing costs. A digital pound would increase government revenue from seigniorage, which is generally understood as the profits derived from issuing money with a face value greater than the cost of producing it. In the modern economy, seigniorage is typically accrued from issuing low (or zero) interest liabilities to finance portfolios of higher-yielding assets. Central banks like the BoE currently derive seigniorage by issuing non-interest bearing banknotes in exchange for central bank reserves, which are backed by government bonds, with profits from the interest received on the bonds transferred to the government (Figure 1).



In 1991, the BoE's profits from issuing bank notes reached more than £2.5bn[3] (equivalent to £5.5bn today), but seigniorage revenue has since shrunk to a fraction of this figure - averaging just £250m annually over the past five years.[4] This is because cash is being replaced by bank deposits, effectively transferring seigniorage revenue from the government to commercial banks.[5] A digital pound offers an opportunity for a portion of this revenue to be recaptured and redirected towards funding public priorities.

[1] Bank of England and HM Treasury, 'The digital pound: A new form of money for households and businesses?', (2023).

[2] Positive Money addressed these subjects in our response to the Treasury and Bank of England's 2023 digital pound consultation: https://positivemoney.org/wp-content/uploads/Positive-Money-response-to-%E2%80%98The-digital-pound_-A-new-form-of-money-for-households-and-businesses_.pdf

[3] Bank of England, 'Bank of England Report and accounts 1991', (1991).

[4] Bank of England, 'Who pays for the Bank of England?', (2022).

[5] McCann, Duncan, et al., 'Making Money From Making Money: Seigniorage in the modern economy', (New Economics Foundation and Copenhagen Business School, 2017).

With the digital pound, the BoE would derive seigniorage revenue from issuing a non-interest bearing liability that, as with physical cash, would be backed by interest bearing assets in the form of government bonds (gilts). As the Bank is owned by the government, the interest paid on the gilts backing a digital pound would be recycled back to the Treasury, effectively reducing the cost of government borrowing, in a similar manner to how the Exchequer profited from quantitative easing (QE).[6]

Another way of conceptualising seigniorage from a digital pound is through the liability side of the central bank's balance sheet. Through QE, the BoE purchased gilts by issuing central bank reserves, on which it currently pays its base rate of interest. Assuming the BoE's balance sheet does not shrink significantly, a transfer of deposits to a digital pound will effectively represent a portion of the Bank's liabilities being converted from interest bearing central bank reserves into non-interest bearing CBDC (Table 1). The state therefore derives seigniorage revenue from savings on the interest it would otherwise pay on its liabilities.

Table 1: Stylised example of changes to liability side of central bank balance sheet with adoption of CBDC

Assets	Liabilities
Gilts (4% interest)	- central bank reserves (3% interest) + CBDC (0% interest)

There are therefore two main ways the benefits of digital pound seigniorage can be estimated - either by focusing on the increased interest paid on the asset side of the central bank's balance sheet, or the reduction in interest paid on the liability side. Both are explored in turn below, and produce broadly consistent figures.

1. ESTIMATING SEIGNIORAGE FROM THE ASSET SIDE

Seigniorage can be estimated from the asset side of the central bank's balance sheet by calculating what proportion of government debt would be held by the BoE to back a given amount of CBDC, and therefore what percentage of government debt interest payments would be received by the central bank and recycled back to the Treasury. Using such a method, a 2017 study by the New Economics Foundation (NEF) and Copenhagen Business School[7] found that if 30%[8] of sight deposits[9] were transferred to CBDC, this would have generated a cumulative £182bn of seigniorage revenue from gilts between 1998 and 2016. This breaks down to an average of 1.8% of total government expenditure each year.

This figure would be significantly higher today, given a larger quantity of bank deposits and higher interest rates. Repeating the same analysis suggests that if 30% of sight deposits were converted to CBDC, this would have generated seigniorage revenue of more than £30bn in the fiscal year 2022/23 - equivalent to 2.5% of total government spending.

Based on the average amount of sight deposits in 2022/23 and 2023/24, and assuming an 8% annual increase in the years following (as has been the UK average between 1998 and 2022),[10] OBR forecasts can be used to estimate that assets backing digital pounds equal to 30% of deposits would generate cumulative seigniorage revenue of £190bn between fiscal year 2022/23 and 2028/29 - an average of more than £27bn a year (Table 2a). This figure falls as sight deposits and interest rates decrease, before increasing steadily upwards to reach £32.4bn in 2028/29.

[6] The Treasury gained more than £120bn from QE between 2009 and July 2022, though these gains are currently being reversed by the BoE raising the interest rate paid on the reserves it created. However there is no possibility of such gains being reversed in the case of CBDC seigniorage, given that, unlike central bank reserves, a digital pound would not bear interest.

[7] McCann et al.

[8] NEF derives this percentage from a BoE working paper forecasting CBDC issuance equal to 30% of GDP.

[9] 'Sight deposits' are bank deposits that can be withdrawn or spent on demand, such as money held in a current account.

[10] Author's calculations, using Organization for Economic Co-operation and Development (OECD), Monetary Aggregates and Their Components: Narrow Money and Components: M1 and Components: M1 for United Kingdom [MANMM101GBA657S], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/MANMM101GBA657S, February 13, 2024.

Table 2a: Seigniorage from 30% of deposits being converted to CBDC, based on NEF and Copenhagen Business School methodology

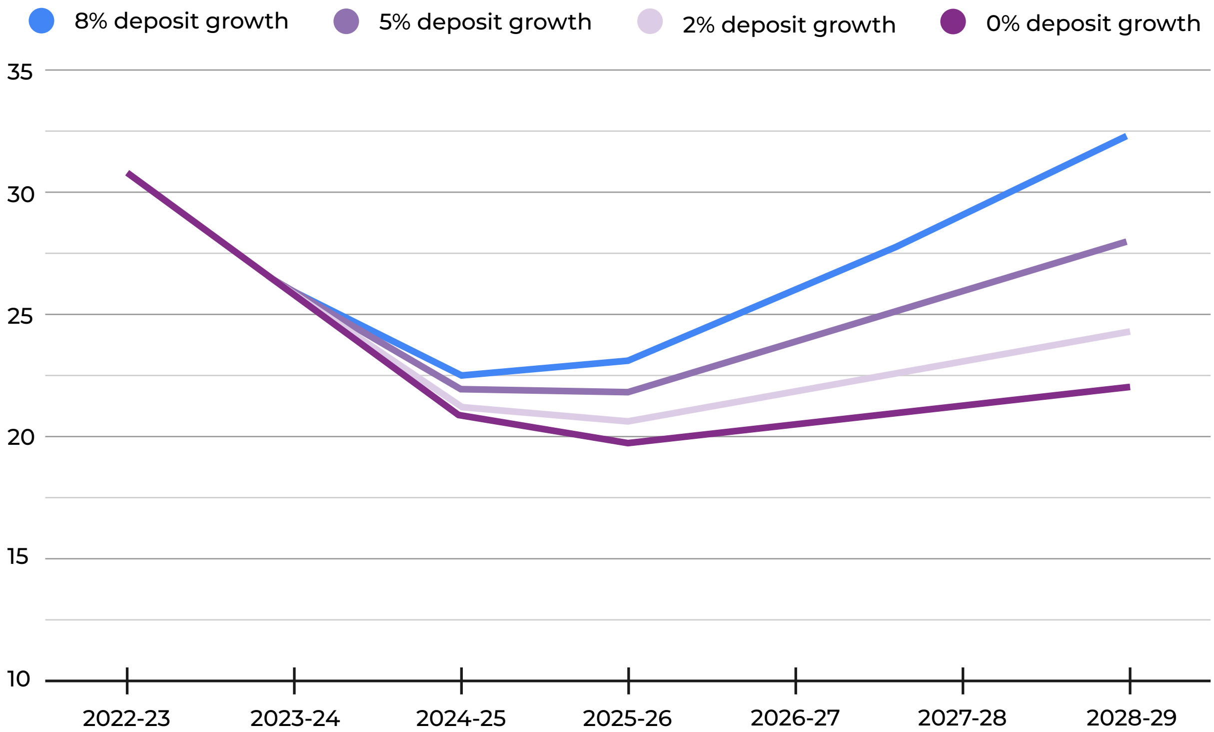
Fiscal Year	Sight deposits (£bn)*	BoE bond holdings to back 30% of deposits converted to CBDC (£bn)	General government gross debt (£bn)**	% of government debt backing CBDC	Central government gross debt interest payments, net APF (£bn)**	Seigniorage revenue (£bn)
2022/23	2,439	732	2,648	28	111.5	30.8
2023/24	2,254	676	2,718	25	104.7	26
2024/25	2,435	730	2,881	25	89	22.6
2025/26	2,629	789	3,027	26	88.9	23.2
2026/27	2,840	852	3,156	27	96.2	26
2027/28	3,067	920	3,264	28	103	29
2028/29	3,312	994	3,365	30	109.6	32.4
Average						27.1
Total						190

*Estimates based on Bank of England series LPQVWYE, assuming 8% annual growth from 2024 onwards

**Source: OBR Economic and fiscal outlook - March 2024

Figure 2a shows the results of this analysis with different rates of deposit growth, equating to lower digital pound issuance. Even with 0% deposit growth, seigniorage could be expected to save the government a total of £161.6bn over this period - an average of more than £23bn a year.

Figure 2a: Annual seignorage revenue from 30% of deposits being converted to CBDC, based on NEF and Copenhagen Business School methodology (£bn)



Source: Positive Money analysis based on BoE and OBR data

The BoE's assumption in more recent analyses has been of 20% of deposits being converted to new forms of digital money, which is equivalent to the total proportion of non-interest bearing deposits in the UK.[11] Repeating this analysis with a lower adoption scenario, where 20% rather than 30% of deposits are converted into CBDC, still produces a figure that averages £18.1bn a year, reaching £21.6bn a year by 2028/29 (Table 2b and Figure 2b). Even assuming 0% deposit growth, 20% of deposits being converted into CBDC would generate seigniorage revenue averaging £15.4bn between 2022/23 and 2028/29.

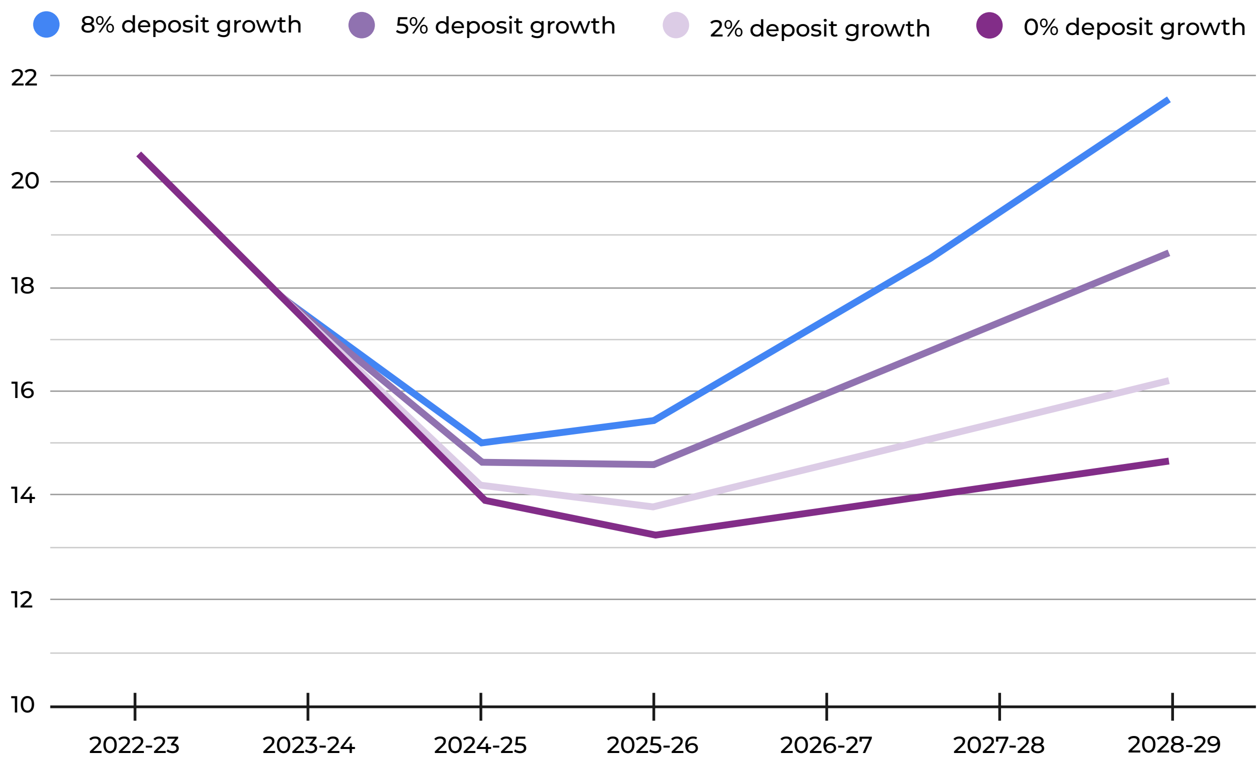
Table 2b: Seigniorage from 20% of deposits being converted to CBDC, based on NEF and Copenhagen Business School methodology

Fiscal year	Sight deposits (£bn)*	BoE bond holdings to back 20% of deposits converted to CBDC (£bn)	General government gross debt (£bn)**	% of government debt backing CBDC	Central government gross debt interest payments, net APF (£bn)**	Seigniorage revenue (£bn)
2022/23	2,439	488	2,648	18	111.5	20.5
2023/24	2,254	451	2,718	17	104.7	17.4
2024/25	2,435	487	2,881	17	89	15
2025/26	2,629	526	3,027	17	88.9	15.4
2026/27	2,840	568	3,156	18	96.2	17.3
2027/28	3,067	613	3,264	19	103	19.4
2028/29	3,312	662	3,365	20	109.6	21.6
Average						18.1
Total						126.6

*Estimates based on Bank of England series LPQVWYE, assuming 8% annual growth

**Source: OBR Economic and fiscal outlook - March 2024

Figure 2b: Annual seignorage revenue from 20% of deposits being converted to CBDC, (£bn)



Source: Positive Money analysis based on BoE and OBR data

[11] Bank of England, 'New forms of digital money', (2021).

2. ESTIMATING SEIGNIORAGE FROM THE LIABILITY SIDE

The analysis in section 1, which focuses on the income gained from the asset side of the central bank's balance sheet, is complicated by the fact the BoE already holds a significant stock of gilts as a result of QE, meaning it may be difficult to isolate seigniorage revenue from a digital pound specifically. This section therefore takes an alternative approach focused on the savings from a reduction in interest paid on the central bank's liabilities.

As explained above, a transfer of deposits to a digital pound will effectively represent a portion of the Bank's liabilities being converted from central bank reserves, which the Bank pays its base rate of interest on, into non-interest bearing CBDC. Therefore seigniorage savings could alternatively be estimated by multiplying the quantity of CBDC by the average interest rate that would otherwise be paid on reserves. Considering the market-implied path for the BoE's base rate, and as above assuming 8% annual deposit growth from 2024 onwards, 30% of deposits switching to CBDC could be expected to generate a cumulative seigniorage revenue of £198.9bn between 2022/23 and 2028/29, averaging £28.4bn a year (Table 3a) - figures slightly higher than the 'asset side' analysis. With this method, seigniorage revenue would increase dramatically between 2022/23 and 2023/24 as interest rates more than double, before falling as interest rates come down, and then steadily increasing as rates stabilise, reaching £31.2bn in 2028/29.

Table 3a: Seigniorage from 30% of deposits being converted to CBDC, based on market-implied Bank rate

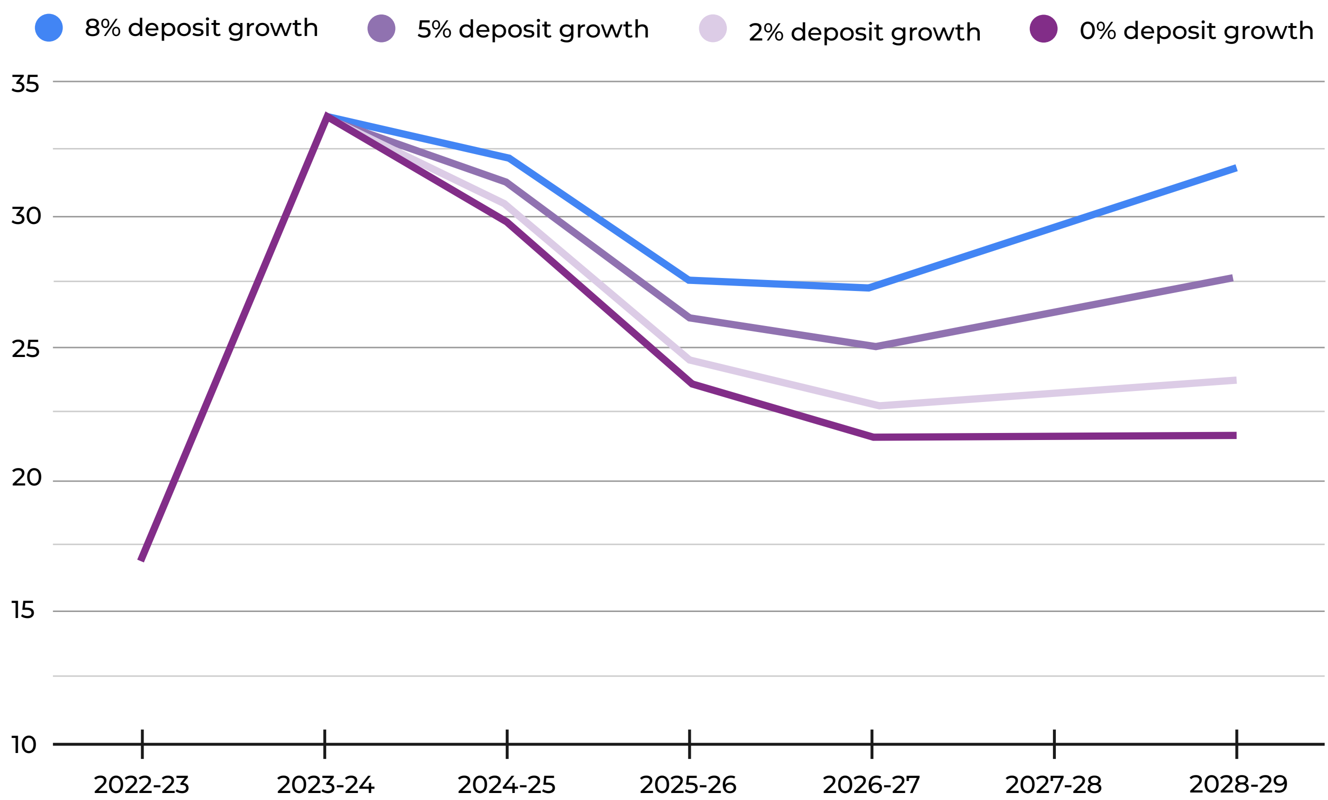
Fiscal Year	Sight deposits (£bn)*	Sight deposits reduced by 30% (£bn)	Bank rate**	Seigniorage revenue (£bn)
2022/23	2,439	732	2.3	16.8
2023/24	2,254	676	5	33.8
2024/25	2,435	730	4.4	32.1
2025/26	2,629	789	3.5	27.6
2026/27	2,840	852	3.2	27.3
2027/28	3,067	920	3.2	29.4
2028/29	3,312	994	3.2	31.2
Average				28.4
Total				198.9

*Estimates based on Bank of England series LPQVWYE, assuming 8% annual growth from 2024 onwards

**Source: OBR Economic and fiscal outlook - March 2024

As with Figure 2a, Figure 3a shows the results of this analysis with different rates of deposit growth. Again, even with 0% deposit growth, seigniorage could still be expected to save the government a total of £169bn over this period - an average of more than £24bn a year.

Figure 3a: Annual seigniorage revenue if 30% of deposits converted into digital pound, based on market-implied Bank rate (£bn)



Source: Positive Money analysis based on BoE and OBR data

Likewise, a lower adoption scenario where 20% of deposits are converted to a digital pound would produce seigniorage revenue averaging nearly £19bn with 8% deposit growth, and more than £16bn with 0% deposit growth (Table 3b and Figure 3b).

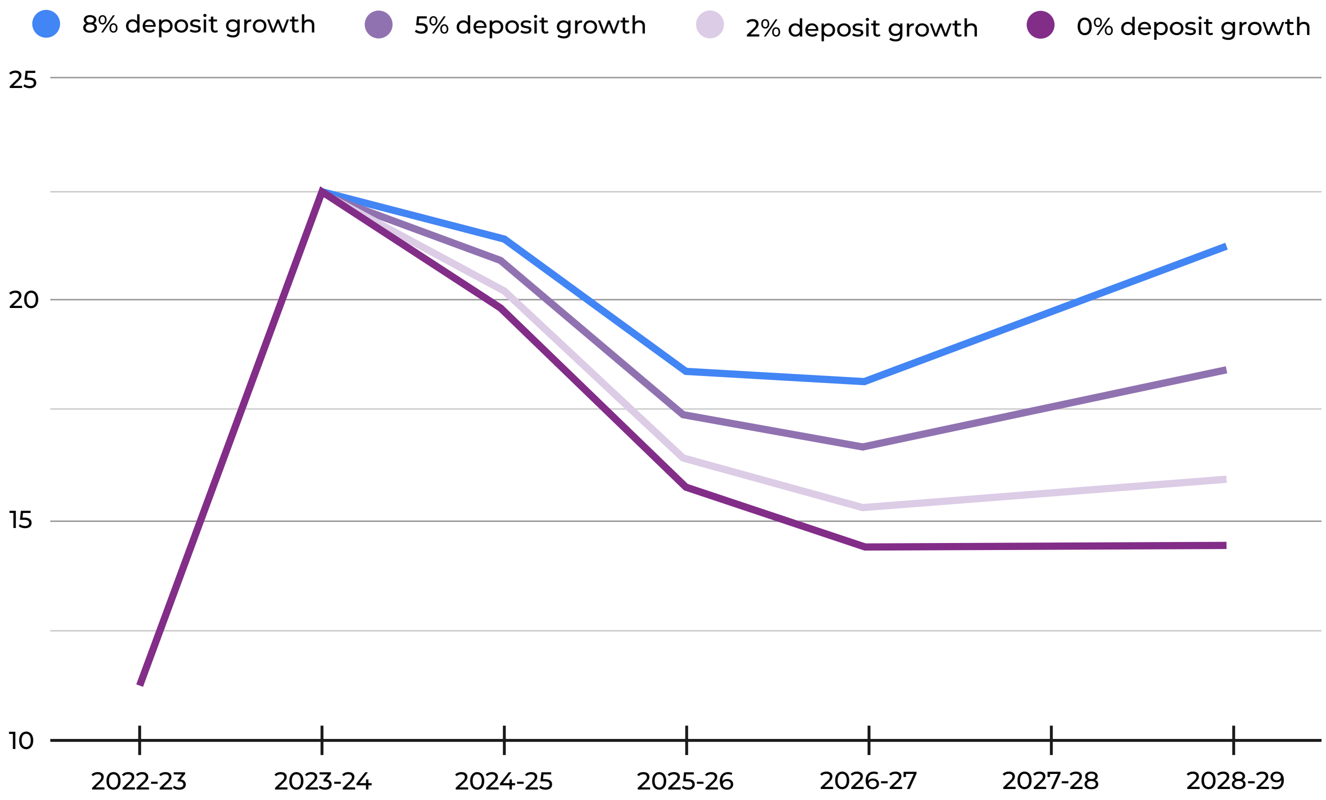
Table 3b: Seigniorage from 20% of deposits being converted to CBDC, based on market-implied Bank rate

Fiscal Year	Sight deposits (£bn)*	Sight deposits reduced by 20% (£bn)	Bank rate**	Seigniorage revenue (£bn)
2022/23	2,439	488	2.3	11.2
2023/24	2,254	451	5	22.5
2024/25	2,435	487	4.4	21.4
2025/26	2,629	526	3.5	18.4
2026/27	2,840	568	3.2	18.2
2027/28	3,067	613	3.2	19.6
2028/29	3,312	662	3.2	21.2
Average				18.9
Total				132.6

*Estimates based on Bank of England series LPQVWYE, assuming 8% annual growth from 2024 onwards

**Source: OBR Economic and fiscal outlook - March 2024

Figure 3b: Seigniorage if 20% of deposits converted into digital pound, based on market-implied Bank rate (£bn)



Source: Positive Money analysis based on BoE and OBR data

POLICY IMPLICATIONS

Under a range of scenarios, the government could be confident in gaining significant revenue from digital pound seigniorage. Using two different methods, it is possible to estimate that, by the end of the decade, seigniorage revenue would range between around £15bn a year in a lower adoption scenario where 20% of sight deposits are converted into a digital pound (Figure 2b and Figure 3b), and more than £30bn in a higher adoption scenario of 30% (Figure 2a and Figure 3a). Further analysis should be explored by the Treasury and OBR so that the impact of a digital pound can be factored into future fiscal policy decisions.

Recommendation: The government and OBR should forecast the potential impact of a digital pound on the government's fiscal position.

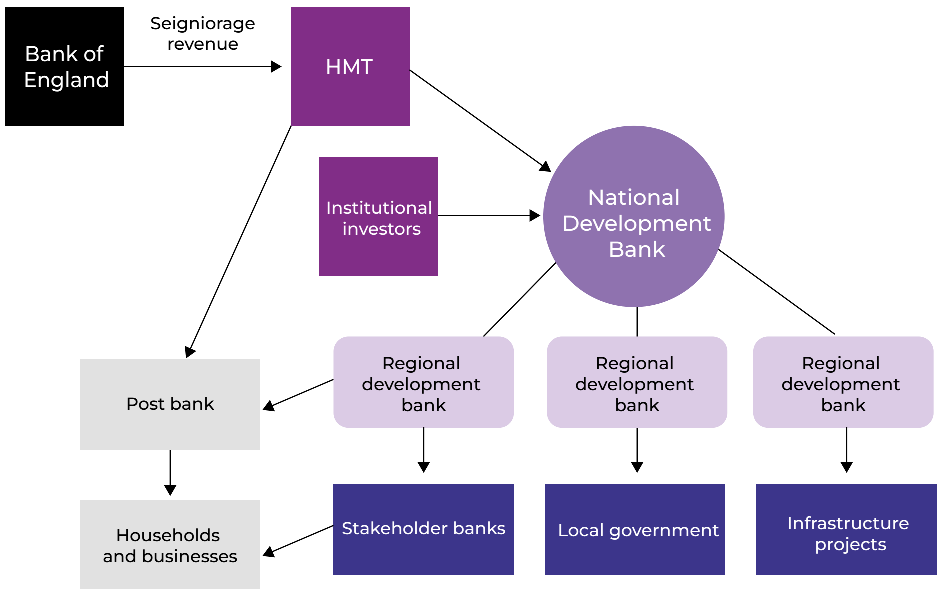
To maximise the fiscal benefit, government departments and other public bodies could hold cash balances and make disbursements through a digital pound.[12] This would be prudent given that a digital pound represents risk-free money and the government's use of bank deposits confers a subsidy to the issuing commercial bank.[13] The government adopting a digital pound itself would make a higher adoption scenario, and thus this paper's upper estimates of seigniorage revenue exceeding £30bn a year, an increasingly realistic benchmark.

Recommendation: The government should seek to maximise the full fiscal benefit of a digital pound by using it for its own disbursements and cash management.

One way digital pound adoption could increase investment in the real economy - which the UK's large shareholder-owned banks typically neglect[14] - is by the allocation of seigniorage revenue towards purchasing equity and bonds issued by an arms-length national development bank (NDB).[15]

A NDB, with decentralised regional arms, could support the financing of a just green transition and levelling up goals either by investing in projects directly, lending to local authorities to support their just transition plans, or simply by on-lending to other financial institutions, such as 'stakeholder banks',[16] which would be able to channel lending to local communities (Figure 4).

Figure 4: Stylised example of how seigniorage revenue could be reinvested



[12] This is based on the assumption that seigniorage revenue would exceed interest received on government bank accounts as well as the Debt Management Office's lending of surplus funds on overnight money markets. This would also likely mean that proposed holding limits on a digital pound will have to be increased or removed, as Positive Money has argued for in our response to the 2023 consultation.

[13] NEF and Copenhagen Business School calculated that the use of deposits as a means of payment represents a total annual subsidy of £23bn for UK banks between 1998 and 2016. The government's use of commercial bank deposits would be expected to contribute significantly to that subsidy.

[14] Bikas, Konstantin, 'How has bank lending fared since the crisis?', (Positive Money, 2018).

[15] Such a NDB could be built from the UK Infrastructure Bank (UKIB), though crucially UKIB lacks the ability to borrow off its own balance sheet, which would be vital for it to play the role of a true NDB, like Germany's KfW.

[16] Prieg, Lydia and Tony Greenham, 'Stakeholder Banks: Benefits of banking diversity', (New Economics Foundation, 2013).

An initial £20bn equity stake (which could likely be funded by one year's seigniorage revenue from a digital pound) would be enough to capitalise a NDB that could raise £250bn over 10 years[17] by issuing debt to institutional investors (such as pension funds and insurers) looking for safe long-term investments that support the green transition. Subsequent years' seigniorage revenue could also be used to purchase additional equity and bonds issued by a NDB, thereby providing a continuous flow of funding to scale-up investment in the long-term development of the UK economy.

A digital pound also presents further opportunities to tackle financial exclusion. For instance, seigniorage could also be used to fund a Post Bank network[18] which would be able to provide free and inclusive access to both physical and digital cash, as well as other retail banking services. This would be particularly vital for social and economic inclusion when banks are rapidly closing branches, leaving many communities across the country without access to in-person services.

Recommendation: The government should develop a framework for reinvesting seigniorage profits from a digital pound into the real economy, such as through a national development bank which could channel funds into a just green transition.

[17] Berry, Christine and Laurie Macfarlane, 'A New Public Banking Ecosystem', (The Labour Party, 2019).
[18] Ibid.

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