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**Article**

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## LEADING ARTICLE

# On CBDC and the Need for Public Debate: Policy and the Concept of Process

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### Introduction

According to the Principle of Techno-Geek Proportionality, for every million times a nerd gets excited about “the latest thing” the world might change once. Central bank digital currency (CBDC) may be that once. There is nothing new about digital money, but there may be many profoundly new things about CBDC. This is especially so for “retail” CBDC – that is, CBDC freely available to the public rather than “wholesale” CBDC, which is restricted to some registered users and central bank systems. At the moment, the vast majority of money in existence takes the form of deposits at Santander, Barclays and the other commercial banks. As the Bank of England makes clear, most of this is originally produced when a bank extends a loan and creates a sum as a deposit which the borrower can then spend.<sup>2</sup> This money flows around our payments system and the money supply, albeit there is more to money supply than just this, grows as cumulative debt grows and shrinks as debt is paid down.<sup>3</sup> In the UK (and equivalents apply in any modern economy that has commercial banks), though we rarely think about it, since the money is denominated in £s and the central bank essentially guarantees that it will exchange at par for central bank money, most of what we think of as money is really Santander or Barclays etc. credit

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<sup>1</sup> Thanks to Costis Repapis for comments.

<sup>2</sup> For the best-known statement see McLeay, Radia, and Thomas (2014); for similar from another central bank see, for example, Jordan (2018). For context see Ryan-Collins et al. (2012); Werner (2014a, 2014b, 2016).

<sup>3</sup> There are various facets to money creation over and above commercial bank lending. Notably when the government authorises new spending this is conducted via the Treasury’s account at the central bank. If there are insufficient funds in that account then the central bank merely creates these via keystroke and deems this an overdraft (and the Treasury conceives this as debt to be repaid, leading to bond issuance etc.). In any case, the action leads to money creation used to pay others whose accounts are held at commercial banks, leading in turn to a transfer of reserves from the Treasury account into those commercial banks. As MMT theorists note, the central bank cannot run out of this money, and it is institutional frameworks that frame or limit use (and then representations, ideas, belief and trust which affect how this is conceived within society). So, government can create money through the Treasury-central bank link in addition to how commercial banks create money through lending. Arguably, central banks can also create money on their own behalf (as they have numerous times in order to address financial instability or crisis). See, for example, Berkeley et al. (2021, 2022); Hook (2022, 2023). As the last point made also intimates, money supply management is not just about the mechanics of money creation, it is about fiscal and monetary policy and issues of macroeconomics – price stability and inflation targeting, employment levels, output gaps, supporting other government policy such as climate targets, financial stability etc. See later.

units.<sup>4</sup> Retail CBDC could change this state of affairs and the issues are sufficient to require public debate – not only regarding the scope of the technology but also the role and adequacy of central banks. This, in turn, provides an opportunity to discuss the nature of process.

### **Some background**

Currently, central bank money exists in two forms, cash in circulation and the reserve accounts that commercial banks must hold at the central bank and which they are required to use to settle the balances between themselves as payments flow between accounts in one commercial bank and another. Retail CBDC, however, gives the public access to digital central bank money and conversely gives the central bank (and, in principle, government) a new and immediate way to put money into and influence the nature of society and economy. Commercial banks go to a lot of trouble to convey an image of themselves as a vital utility providing an essential service to the public. But behind this sits a small group of private companies to which has been delegated an astonishing degree of power and on whom we are dependent. Potentially, retail CBDC reduces that power and reconfigures dependency within the public-private axis of money.

I say potentially, because a great deal depends on purpose, implementation and policy. It is also important to note that CBDC is a catch-all term for different possible designs and use of technology. In general, CBDC makes use of the same distributed ledger, blockchain, cryptographic and smart contract technology as cryptocurrency.<sup>5</sup> The main difference is that these are maintained and controlled by a central authority (the central bank). All the other advantages of the technologies remain the same: secure, rapid, recorded and immutable transaction without the need for settlement via a confirming intermediary. A retail CBDC may also be “token based” (the central bank issues digital tokens – e.g. digital £s – into a digital wallet which the public carry around with them on a device and can spend) or “account based” (the central bank requires members of the public to maintain an account from which payments are verified), and it may be interest bearing or non-interest bearing. Finally, the central bank can opt to offer direct access to CBDC from the central bank or can choose some variation where the underlying infrastructure is provided by the central bank but the overlaid payments interface is provided by others through new or existing systems.

Current interest in the subject began around 2015 and according to the global CBDC Project, almost every country in the world is at some stage in developing and implementing a CBDC.<sup>6</sup> The

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<sup>4</sup> The terminology varies, central bank money is referred to as sovereign money, narrow, base or high-powered money, and commercial bank money is often just referred to as bank money and is part of broad money. It is mainly because of the conditional and contingent status of other money's (including bank money) relation to central bank money i.e. whether it will exchange at par, that leads to a money hierarchy.

<sup>5</sup> On the various forms of cryptocurrency and the issues raised see, for example, Arner, Auer and Frost (2020); Prasad (2021); Carney (2021); Morgan (2023a). See also the appended taxonomy.

<sup>6</sup> Note, the Committee on Payments and Markets Infrastructures at the Bank for International Settlements began to investigate the issue in 2015. See also Bech and Garratt (2017). The CBDC Project tracks the status of CBDCs, categorising them into research, proof of concept, pilot and launched (with an additional category of cancelled). The tracker is supported by Boston Consulting Group and EY. Visit: <https://cbdctracker.org/>

Bank of England, for example, published a discussion paper on CBDC in March 2020, formed a joint CBDC taskforce with HM Treasury in April 2021, and published a further discussion paper in June 2021 focused on the role of new types of digital money and their impacts (notably a variant of cryptocurrency called stablecoin [corporate coin] and the motives this might provide for launching a CBDC). This was followed most recently by a consultation paper on CBDC in particular in February 2023 (with the consultation to run to June 2023), accompanied by a supporting working paper on the technology.<sup>7</sup> Throughout the period Deputy Governor of the Bank of England with responsibility for financial stability, Sir Jon Cunliffe, provided a running commentary on aspects of the process and its context (re the potential issues raised by new forms of digital money).<sup>8</sup> Notably, in a speech that accompanied the launch of the February consultation he notes that, “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.”<sup>9</sup> Cunliffe was later replaced as Deputy Governor by Sarah Beeden, effective from November 2023, but development continues.<sup>10</sup>

### **Attractions of retail CBDC**

There are various potentials that provide reasons to adopt CBDC for domestic use (there is a whole other debate for its international implications).<sup>11</sup> Perhaps the easiest to grasp is typically posed using that catch-all term from economic jargon “efficiency”. While we all understand that borrowing money invites fees and interest charges, we still tend to think of money as something we pay with rather than something we pay for. Yet creation of money, production and maintenance of money delivery (to those we access it from) and of payment and processing systems all involve costs and fees.<sup>12</sup> Sometimes we are aware of these and sometimes not. For example, transport and storage of money and maintenance of ATM's and the network that

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<sup>7</sup> See Bank of England (2020, 2021, 2023a, 2023b). See also Barrdear and Kumhof (2016) and on the narrative and context Morgan (2022a).

<sup>8</sup> See, for example, Cunliffe (2021a, 2021b, 2022).

<sup>9</sup> See Cunliffe (2023).

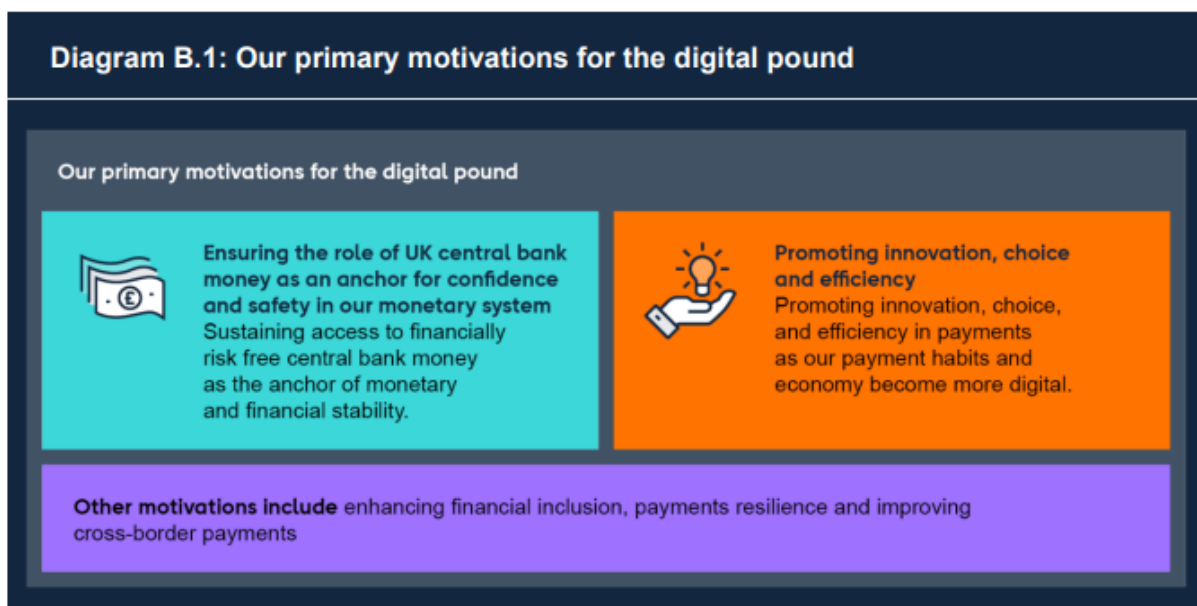
<sup>10</sup> The press release announced the usual range of responsibilities: “As the Bank’s Deputy Governor for Financial Stability, Sarah will play a crucial role in ensuring the safety and stability of the UK’s financial sector and will sit on the Financial Policy Committee (and chair it in the Governor’s absence) the Monetary Policy Committee and the Prudential Regulation Committee and play a key role in providing a link between financial stability and monetary policy. Sarah will also be a member of the Court of the Bank of England, Chair the Financial Market Infrastructure Board, and represent the Bank of England on a number of national and international bodies.”

<sup>11</sup> These focus mainly on its use to provide an alternative to cryptocurrency use for remittances and to evade capital controls (and in a context where cryptocurrency threatens a version of dollarisation in countries with unstable currencies and weak central banks). For a detailed breakdown (albeit slightly dated) see Chainalysis (2021). There is, however, also an issue regarding the impacts for the role of the \$ as the dominant reserve currency (see Kuehnlenz, Orsi and Kaltenbrunner 2023), as well as issues over the compatibility of technologies that underpin any CBDC and affect the connections between different CBDC. The Bank for International Settlement, for example, has a project – Project M-Bridge. Visit: [https://www.bis.org/about/bisih/topics/cbdc/mcbdc\\_bridge.htm](https://www.bis.org/about/bisih/topics/cbdc/mcbdc_bridge.htm)

<sup>12</sup> Note, central banks do though benefit from “seigniorage”.

underpins these is a massive hidden expense.<sup>13</sup> Every payment system involves some underpinning infrastructure and existent payment services involve intermediaries, each charging fees and this is far larger in scope and contains more actors than just commercial banks. Fundamentally though, the current banking system puts the majority of our income and most of our financial activity in the hands of commercial (private) banks. CBDC could provide an alternative that eliminates the need for much of this intermediation, its costs and fees. Less radically, a CBDC might introduce diversity and competition for commercial banks as they currently exist. The Bank of England, for example, summarises their “primary motivations” in the figure below.

**Figure 1**



**Source:** Bank of England (2023a: 24)

In any case, central banks currently face a conundrum. In the present system cash represents a visible marker of money. It reminds the public that the state stands behind the value of money. Put another way, cash provides an important symbolic “anchor” which helps to maintain trust in money.<sup>14</sup> In an increasingly cashless society with evermore diverse digital payment options this role is under threat.<sup>15</sup> While the Bank of England, for example, is clear that it does not envision

<sup>13</sup> For example, according to the Ceeney report on the future of cash, maintaining the cash infrastructure (ATM and cash sorting centres etc.) in the UK costs around £5 billion per year (Ceeney 2019:12–13, 64).

<sup>14</sup> On money see Braun (2016). In general see Pratten (2017); Colledge, Morgan and Tench (2014); Morgan and Sheehan (2015).

<sup>15</sup> In the UK more than 50% of payments were made using cash in 2010, by 2020 this had reduced to 17% and according to UK Finance it was 14% in 2022. See, for example, <https://www.ft.com/content/6f60def7-9458-40d4-b3a6-50575ba1e080>

CBDC as a substitute for cash in the near future, the development of a CBDC is, at least in part, an acknowledgement of the direction of travel technology of money seems to be taking. If a suitable delivery system can be developed it also provides an important opportunity to provide money to unbanked and/or cash dependent people. This could both enhance financial inclusion and, given the potential of CBDC, lead to the replacement of cash with a digital variant less conducive to tax evasion, fraud and criminality.

We've mentioned trust and in a complex finance system trust is not an abstract concept. Much depends on projection of competence, credibility and authority. In the modern world we are increasingly aware of limits on these. CBDC provides multiple opportunities for a central bank to improve its control, respond to problems and forestall crises. A successful CBDC could reduce the attraction of cryptocurrencies as means of payment (though not as speculative assets) and thus prevent the future (further) loss of control of money supply that these threaten. CBDC might also significantly enhance monetary policy. A widely adopted and used CBDC could provide a new means to directly and more or less immediately increase or decrease the money supply, target specific economic sectors or socio-economic groups and influence commercial interest rates, as well as payments systems activity. Again, none of this need depend on the cooperation of commercial banks and could provide an alternative to dependence on commercial banks. Even if used conservatively CBDC could provide a mechanism to encourage compliance from commercial banks.

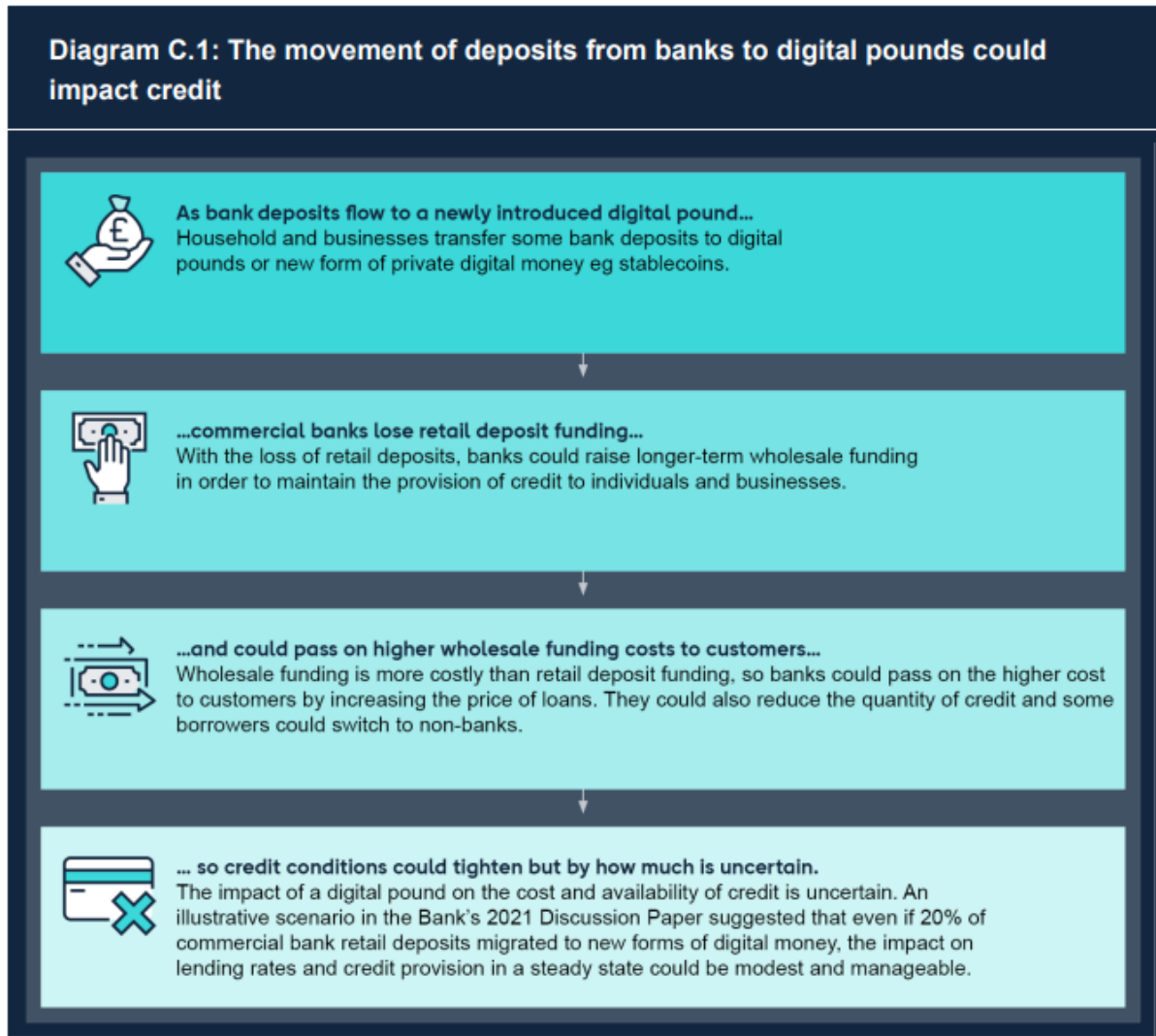
### **Issues going forward**

For commercial banks there are reasons to be concerned regarding disruption to the status quo. Not only might they lose some proportion of their business because of CBDC, "disintermediation" may also cause balance sheet shrinkage and increase the funding costs associated with bank loans. The problem for commercial banks is more obvious in the case of cryptocurrencies than it is in the case of CBDC but the two are similar: a payment from a bank account transfers to a digital wallet and so the commercial bank loses this sum from a customer account but also an equivalent sum from its reserve account at the central bank.<sup>16</sup> Since people will still have a need to borrow and the commercial bank still wants to lend (as a profit making entity), insofar as it maintains its lending, the bank will need to acquire more reserves (at some cost to itself) to maintain the liquidity of its reserves and offset the drain on its reserves as more customers move money out of their accounts. The Bank of England provides a useful summary in the figure below (albeit their assumptions concerning impact are highly debatable).

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<sup>16</sup> Visit: <https://www.ppesydney.net/the-future-of-money-and-bankings-crypto-reserve-drain-problem/>

Figure 2



Source: Bank of England (2023a: 39)

CBDC, meanwhile, adds an additional complexity that is unlikely to be relevant in the case of cryptocurrencies. If there is loss of trust in a commercial bank, unless prevented somehow, customers will have the capacity to transfer into CBDC at the stroke of a key – from which an accelerated digital run on one or several commercial banks could occur. This possibility, of course, invokes the spectre of financial crisis. From the point of view of the central bank, however, CBDC could also provide a way to directly inject money into the economy with, in fact, the opposite effect to that just stated. Such an injection might forestall an incipient crisis focused on the commercial banks, preventing an initial disruption or panic becoming a more widespread economically damaging financial crisis, while also allowing the central bank to guarantee the integrity of payments in the economy. To reiterate, this could be used to pre-empt bank runs, but equally it could provide a mechanism that allows commercial banks to go bust and be wound down safely. Older readers will recall the palpable fear during the financial crisis that the payments



system would grind to a halt. In principle, CBDC provides the central bank with a direct lever to forestall this problem in times of emergency.

In the case of the UK, however, so far, and despite stating it has no intention of introducing a CBDC in a format that artificially preserves the status quo and impedes competition, the Bank of England seems to favour a form of CBDC that operates via other platforms, limits holdings, coexists with commercial banks as is and pays no interest. It is, as such, a conservatively posed future alternative, at least to begin with.<sup>17</sup>

### **The issue of power**

There is a lot more we could say here but it should be clear that a CBDC allows a central bank to take on new powers (in the “capacity to do” sense), to take back power (in terms of “scope to be the decisive actor in a system” sense), but also to perhaps acquire excessive power (in the “who gets to decide” sense). These last two depend very much on perspective, accountability and an age old debate regarding the legitimate role of the state and the scope for democratisation of its institutions. With this in mind, there is a final feature of the technology that underpins new forms of digital money, including, in principle, CBDC that warrants a mention, and that is programmability. We have become used to thinking of money as a universal and anonymous means of getting what we want, but a programmable money can be both time limited and purposed. As such, a CBDC could become a means to support local economic activity, finance investment, ensure automatic payment of tax at point of transaction, achieve social welfare goals and enforce carbon budgets. Depending on your point of view this is enlightened public policy in action or sinister social engineering. In any case, programmable money allows for progressive policy agendas, but equally for new forms of rationing and discrimination.<sup>18</sup>

### **“Independence”?**

The notion that CBDC may affect the power of central banks to act in the world has wider context. At its simplest “independence” of central banks – acknowledgement of the benefits of separation from the government of the day in terms of policy decisions and powers – has been a noted trend over the last thirty to forty years. The Bank of England, for example, was founded in 1694, nationalised in 1946 and given formal independence in May 1997 and this was followed by the

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<sup>17</sup> Note, at time of writing it still was not clear that a CBDC would definitely run on distributed ledger technology. However the February technical paper notes the system anticipates a need to deal with 30,000 transactions per second but explores possibilities up to 100,000 per second (Bank of England 2023b: 39). See appended figure for summary of system possibilities.

<sup>18</sup> Note, one might wonder whether programmable money remains money rather than some other thing. But it is, of course, named “programmable *money*”, would be issued by a recognised authority who stands behind it and can readily be conceived as changing the nature of money rather than misrepresenting itself as money. There have in any case been many alternative “moneys” with liquidity limitations. Still, programmable money seems more like credit at the company store than money as we have come to think of it.



Bank of England Act 1998, which then established its reformulated constitution, governance, statutory powers and responsibilities.<sup>19</sup>

Central banks are typically responsible for the maintenance of monetary and financial stability and are organised according to a combination of powers and mandates. These typically focus most visibly on “price stability” via a target rate of inflation (which may be a formal or informal target) but also, with notable variations by country, responsibilities extend to maintaining employment, liaising with the Treasury to achieve other macroeconomic goals (to ensure that monetary policy and fiscal policy do not conflict), as well as monitoring and intervention for micro-prudential (focused on individual financial organizations) and macro-prudential (focused on emergent systemic dynamics and trends) purposes. As post-Keynesians and especially critical macro-finance proponents argue, there has been a notable shift in the powers (official and unofficial) and areas of responsibility of central banks over the years since the Global Financial Crisis – central banks are lenders of last resort but also in some ways guarantors and market makers across an ever more complex financial system populated by a proliferation of financial instruments and tradeable assets and by multiple actors in numerous jurisdictions.<sup>20</sup> The intervention by the Bank of England in response to problems caused to and by “Liability-Driven-Investment” funds provides a high profile recent example.<sup>21</sup>

In any case, there has, over the years been a great deal of debate regarding what independence means. One important line of critique has been that independence has resulted in a “technocratic insulation” of central banks from democratic accountability and that the form and concerns of independence have in effect embedded the vested interests of commercial banks and finance – so independence is not neutrality (in theory or practice), it is tacitly politicised. As the above should indicate independence is a conditional term given the evolving context central banks find themselves in.<sup>22</sup> This extends also to relations with the government of the day. In some

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<sup>19</sup> Visit: <https://www.bankofengland.co.uk/-/media/boe/files/speech/2017/twenty-years-of-boe-independence-the-evolution-of-monetary-policy.pdf>

And: <https://www.legislation.gov.uk/ukpga/1998/11/contents>

Note, the Bank was privately owned but effectively a public-private partnership until nationalisation. It was not until the Bank Charter Act of 1844 that the Bank was given exclusive rights to issue banknotes (though not in Scotland). The Act also formalised a gold standard, establishing a ratio between gold reserves held by the Bank and the currency it could issue. The Bank still operates as a quasi-commercial entity and is self-financing.

See: [https://www.mmu.ac.uk/sites/default/files/2021-11/Understanding the Bank of England.pdf](https://www.mmu.ac.uk/sites/default/files/2021-11/Understanding%20the%20Bank%20of%20England.pdf)

One might also draw attention here to the Debt Management Office (DMO), established in 1998 and to which responsibility for issuance of government debt (gilts) was transferred from the Bank of England. As of early 2024, the DMO had issued more than £3 trillion. Visit: <https://www.dmo.gov.uk/>

<sup>20</sup> See Dutta et al. (2020); Gabor (2020) and visit: <https://criticalfinance.org/>. And also compare Morgan (2009) and Morgan (2022b).

<sup>21</sup> For a clear account see the letter from Jon Cunliffe to the Treasury Select Committee:

<https://www.bankofengland.co.uk/-/media/boe/files/letter/2022/october/letter-from-jon-cunliffe-18-october-2022.pdf>

<sup>22</sup> For example, in March 2023 (25 years since the 1998 Act) the House of Lords Economic Affairs Committee launched an inquiry (inviting evidence submissions) titled “The Bank of England: how is independence working?” See latter and visit:

ways central banks are separated from government, but even if independence is formal there is not an absence of liaison with or communication or pressure from government. Independence is never absolute – and arguably both central banks and governments have been subject to neoliberal disciplinary influence in a financialised environment.

Still, central banks do have a great deal of authority to intervene in the world and significant scope to influence financial actors and outcomes. At the same time, this power is circumscribed for those actors who fall under the purview of the central bank and there are many more who do not – in a system where “shadow banking” plays a significant role. It is not surprising, therefore, that the scope of CBDC, at least initially has been viewed in quite limited and conservative ways. CBDC has the potential to be transformative, but technology is not “disruptive” merely because it exists – there is a world of power relations that *pre-exist* its introduction and this bears consideration.

### **Who has the power?**

Let's consider some of the dynamics of the power of central banks in relation to commercial banks. If we accept that commercial banks *do not rely on pooled savings as a source of lending* and that they do not create money collectively through a textbook “money multiplier” mechanism, but rather create money individually by bringing into being a deposit in response to borrowing by customers, then commercial banks' relation to central banks becomes, for various reasons, more problematic than it might at first appear:

1. By creating new credit commercial banks can rapidly increase the amount of debt in the economy *and* the amount of purchasing power, simultaneously creating *rapid expansions in many markets* (e.g. consumer goods in general, car ownership, housing and commercial property). There can be rapid asset inflation in response to this.
2. Conversely, by reducing the availability of credit in moments of distress (“balance sheet deleveraging” as it is termed) commercial banks can exacerbate a downturn or recession.

As such, the relative rate of creation to destruction of money through credit provision matters. Furthermore, these two points not only imply that procyclical banking is a causally significant problem for economic management, but also that its practices necessarily asymmetrically harm those with greater debt burdens and debt sensitivity and this is an inequality amplifier. And:

3. While commercial bank credit creation can be procyclical it does not thereby become easy to forecast or stable in its trend activity. The power to create money is the power to initiate changes in scale and volume of activity. This effect is enhanced since while commercial banks can create money individually they tend to act in concert (i.e. for all intents and purposes collectively).

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<https://committees.parliament.uk/committee/175/economic-affairs-committee/news/186474/the-bank-of-england-how-is-independence-working-economic-affairs-committee-launches-inquiry/>

As such, central banks may find themselves dealing with a real world of irregular relations, lumpy data, discontinuity and non-linearity for key variables and this may be at odds with model building that regularises relations, smooths and tames data and assumes linearity. In these circumstances “equilibrium”, dynamic or static, becomes a poor and thus misleading framing metaphor for further concept development – and this may hamper a central bank’s capacity to adequately view the financial world. Moreover:

4. If lending does not depend on savings then the idea that saving comes *before* investment seems misleading. Where credit creation is involved, the line of causation seems more likely to be borrowing leads to new deposits which are used for spending and investment which leads to further spending which leads to new deposits.

As such, not only does the relative rate of creation to destruction of money matter, but also what money is borrowed *for*, which in turn depends in large part on the lending priorities of commercial banks. If commercial banks choose to prioritise lending to other financial institutions, and lending in order to facilitate the trading of existing financial assets, then the economy will begin to take on characteristics related to these priorities and not others: asset inflation, expansion of financial services feeding other financial services, and (again) inequality amplification. Here, there seems a further revealing problem of language use:

5. If commercial banks create money, then “lending” does not seem to convey the appropriate meaning for what banks are doing – they are not using something that already exists in the sense of “I lend you *my* hammer”, nor are they gathering together or pooling something for this purpose. Rather commercial bank money creation is the act of a “financier” and is quintessentially about the power given to them to engage in money creation and the power that follows from this to dictate rent in the form of interest and fees.

At this stage you might be wondering what the point being made here is. The simple point being made is that in terms of the context that CBDC is being introduced into, commercial banks are powerful in particular ways and problematic for central banks because of those ways (though there are others not mentioned here). We are used these days to the notion that there is a problem of “too big to fail” banks and of issues like “moral hazard” related to the tendency to intervene to support banks in distress (leading to the ongoing problem of private gain and public loss), but there is a more normalized everyday problem that commercial banks hold a great deal of power over money creation and in relation to the central bank. It is, for example, extremely rare for the central bank *not* to provide reserves when a commercial bank seeks them in response to lending it has already done. Conversely, the central bank is highly dependent on commercial banks translating its advice, prompts and policy levers into actual lending (and actual lending in areas that have some social and economic benefit rather than are focused on creation and trading of financial assets). For the public, this is just ordinary background and for many working in central banking and banking and finance it is similarly ordinary – *and* despite the reality of money creation

(and despite that central banks also acknowledge this reality in some of their work) *banking* still tends to project the idea that commercial banks are prudent custodians of savings, that they pool those savings, lend on the basis of those savings, and that they are disciplined monitors who allocate capital efficiently and are, as such, indispensable sources of economic good. The reality is that they are extremely powerful opportunistic profit seeking entities whose conditions of operation bear little resemblance to standard economic theory – not least because they are able to influence their own environment of operation.

To be clear, commercial banks are not infinitely powerful, they cannot, for example, create money without limit even though they can, in a sense, create money *ex nihilo* – they create money insofar as it is commercially viable to do so through the act of lending (so they need either creditworthy borrowers or scope to “originate and distribute” lending via securitization etc.) and this is influenced by many other factors, and at base they are restricted by liquidity of reserves and directly and indirectly by banking regulation and capital and funding rules. As a corollary, central banks are not powerless, but it is observably the case that commercial banks have become *more* powerful, central banks’ task of managing and steering banking and finance has become more difficult, and to a large degree central banking has become a creature of a finance worldview – they tend, for example, to talk of “financial deepening” rather than financialisation and give the impression that when problems occur they are because banking has deviated from its core disciplines and potentials (but this presupposes a world that has never really existed and norms to which one cannot return banking to because it never, with the odd exception, adhered to them in the first place).

At the same time, there is a longstanding critique of finance and public perceptions do not reduce to how central banks and commercial banks attempt to project themselves – there have been in many countries, too many crises, scandals and everyday experiences of indifference, mistreatment and profiteering for that to be so. Moreover, there is these days a growing mainstream critique that central banks are arrogating powers and trying to do too much – and this includes a critique from the right of central banks’ engagement with climate finance and issues.

In any case, the above makes clear that the context into which CBDC is being introduced is complex and that central banks (the statement on authority at the end of the last section notwithstanding) are currently weaker than one might imagine and weaker than central banks like to project. If we return to a phrase I used early on, what I meant when I suggested that “retail CBDC has the potential to reduce the power of commercial banks and reconfigure dependency within the public-private axis of money” should now be a little clearer. That there is “a world of power relations that pre-exist its introduction and thus may work to limit its impact” should also be clearer.

### **CBDC, the reality of commercial banks and the future of central banks**

It is worth bearing in mind that there is no clear correlation between the size of the finance sector and productive investment and economic growth – let alone well-being.<sup>23</sup> The UK has one of the largest financial sectors in the world and some of the most active universal banks, as well as highly active shadow banking and alternative investment management (hedge funds, private equity etc.).<sup>24</sup> Yet it also has one of the lowest levels of public and private gross fixed capital formation in the OECD and one of the lowest levels of research and development, as well as one of the lowest levels of business investment and a manifestly decaying infrastructure. This is obviously odd, that is until one thinks about the real investment foci of banking and finance. One can only conclude that banking and finance is dysfunctional, and especially so in the recognised centres of finance, and this situation I would suggest is an implicit argument in favour of a more ambitious use of CBDC, and along with climate emergency is surely an argument in favour of adopting something along the lines of an MMT approach to finance among sovereign currency issuers – though one would require more thought about norms and trust in a money system and more regard for biophysical limits to the scale of economic activity than one finds in some of the work on MMT. In any case, the future of central banks could turn on use of CBDC to modify and displace some aspects of existing banking and transform others.

Consider the central role the base or “bank rate” currently plays in monetary policy.<sup>25</sup> Central banks use bank rate – the rate of interest paid on reserve balances held by commercial banks at the central bank – as a means to influence commercial interest rates and thus to influence credit pricing, borrowing and economic activity. The typical policy context is inflation targeting for price stability. The combination explains the historic low interest rates over the period since the global financial crisis until recently (from 2008 until the end of 2021). For example, following historic lows, the Bank of England bank rate had risen to 5.25% as of December 2023.<sup>26</sup>

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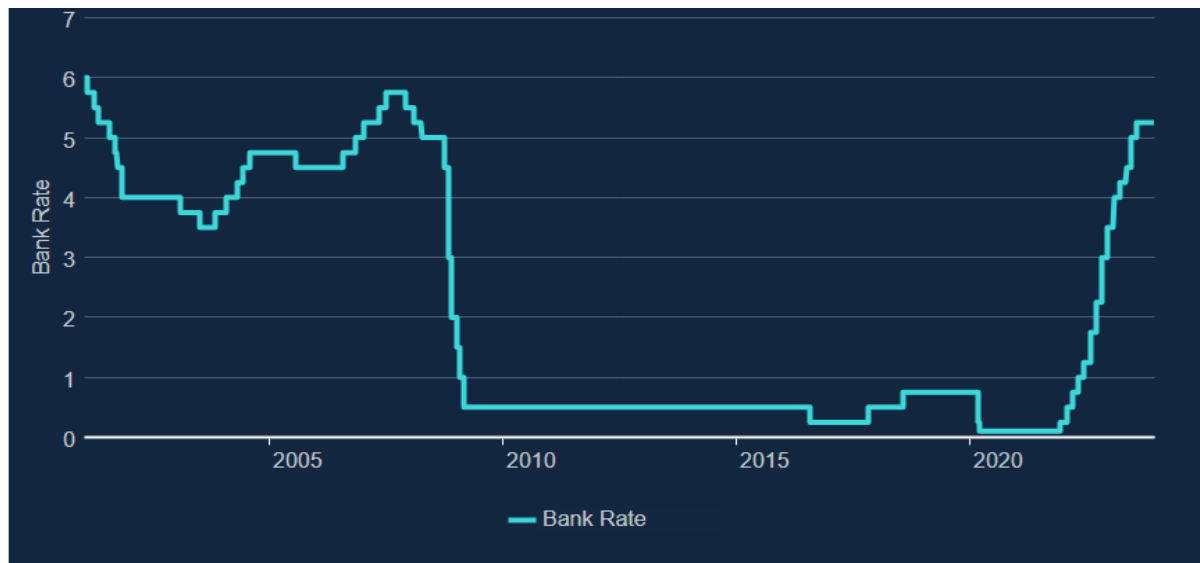
<sup>23</sup> There are, however, many econometric analyses of the association between size of capital markets and economic growth, especially for “developing economies”, though rarely is there any focus on the nature of growth and its broader implications and there is little attention to the notion that finance can become too big – with the notable exception of work on the “finance curse”.

<sup>24</sup> For discussion see the interviews, Batt and Morgan (2020); Fichtner and Morgan (2023). For an example, see Morgan and Nasir (2021).

<sup>25</sup> The Bank of England defines Bank Rate as, “The rate of interest we pay to commercial banks for the reserves they hold in their Bank of England accounts. Bank Rate generally influences the interest rate commercial banks offer and charge their customers.” <https://www.bankofengland.co.uk/glossary>

<sup>26</sup> For source visit: <https://www.bankofengland.co.uk/monetary-policy/the-interest-rate-bank-rate>

**Figure 3**



In modern economies, this interest rate is used because central banks know they have (though one might say government institutions in combination choose to have) minimal direct control over the money supply. Central banks also know, however, that altering interest rates is not in itself sufficient to induce commercial banks to lend (or restrict lending) and, as previously mentioned, is not in itself sufficient to ensure lending priorities are socio-economically desirable (and one might note that the existence of specified infrastructure and development banks etc. to meet this need in many countries is a tacit indicator of what commercial banks are *not* doing). Here CBDC could do various things – though none are strictly about price stability.

First, the central bank can put CBDC into circulation by using it as the means of payment for bonds that currently exist and can extend this to open market bond purchases at variable scale. Second, rather than make payments into accounts at commercial banks, CBDC could become the means of payment used for all government payments and contracts. Third, the central bank could use CBDC to finance an infrastructure and climate transition bank. Fourth, by remunerating (paying interest on) CBDC deposits the central bank could create a new lever that not only forces commercial banks (via competition) to pass on interest rate changes to savings deposits more fully (and faster) than they currently do (merely by raising the rate on CBDC accounts), but the threat of this could also be used as a lever to pressurise commercial banks into changing their lending conditions and foci. The bank rate only has centrality in our current system because commercial bank money is a key feature of economic activity.

And arguably, the central bank reserve system only has a key role at the moment because something is needed to support the widespread use of commercial bank money (which is always a fraction of current reserves of central bank money). Of course, any change here affects the dominance of commercial banks in multiple ways and this would need to be carefully thought through in terms of wider consequences and possible unintended consequences, especially in terms of the core issue of the role of debt in debt dependent societies. And we have said nothing

here about programmable money.<sup>27</sup> What we do know though is that systems of money provision do not stand still and it would be an error to think that the future will merely mirror the present. The real question here is who will have a say over the systems of the future and this surely merits public debate.

Clearly though, CBDC has scope to be a policy tool, but for this to be so it is likely necessary that it becomes what it implicitly is (or will implicitly be) insofar as it is central bank money – an unrestricted, fully convertible and universally acceptable means of payment and discharger of debt. For example, Joseph Huber, author of *The Monetary Turning Point: From Bank Money to Central Bank Digital Currency (CBDC)*, and advocate of “sovereign money” (and thus opposed to the dominance of commercial bank money and all that implies), notes several design and implementation considerations for CBDC that would affect how extensive a displacement of commercial bank money by CBDC would be and how successful this could be in transforming the role of money (Huber 2023; see also Huber 2019). In any case, any plan to introduce CBDC that conceives its role as simply a more efficient means of digital payment for consumption purposes is tantamount to using a racehorse to pull a milk cart.

### **Finance is a complex process, but what is a process?**

Change is about process and CBDC adds a new process to many other processes – this though implies money, its creation, and finance and banking more broadly are processes and by inference both CBDC and banking and finance are part of other socio-economic processes. A world of parts and wholes in motion... In bringing this short article to a close it seems, therefore, worthwhile to briefly discuss what a process “is”. The American Pragmatist philosopher Nicholas Rescher provides one of the best introductions to process philosophy.<sup>28</sup> According to Rescher:

A process is a coordinated group of changes in the complexion of reality, an organized family of occurrences that are systematically linked to one another either causally or functionally. It is emphatically not necessarily a change in or of an individual thing, but can simply relate to some aspect of the general ‘condition of things’. A process consists in an integrated series of connected developments unfolding in conjoint coordination in line with a definite program. Processes are correlated with occurrences or events: processes always involve various events, and events exist only in and through processes. (Rescher 1996: 38).

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<sup>27</sup> This, in turn, extends to the scope for development of the technology for a new form of internet (“Web 3.0” built around tokenisation and unique transferable ownership of everything in modular parts at any scale, combined through contracts). Web 1.0 refers to the era of static pages and a dominance of consumers rather than producers of content. Web 2.0 refers to the era of unloadable platform content. Visit:

<https://www.bloomberg.com/news/articles/2021-12-10/web3-is-crypto-s-attempt-to-reinvent-the-internet-here-s-what-you-should-know>

<sup>28</sup> See also Rescher (1998); Rescher and Morgan (2020). On Rescher and economics (compared with George Shackle), see Latsis (2015).



According to Rescher, Western philosophy has mainly focused on things or substance and because of this has found it difficult to reconcile itself to the existence of process and this has often resulted in dichotomy (being-becoming etc.), as the table below indicates:

**Table 1**

The classic metaphysical distinction		A contrastive ‘schedule of ontological categories’	
Substance philosophy	Process philosophy	Aristotle’s categories	Process categories
discrete individuality	interactive relatedness	substance	process
separateness	wholeness (totality)	quantity	quantitative <i>features</i>
condition (fixity of nature)	activity (self-development)	quality	topicality ( <i>thematic nature</i> )
uniformity of nature	innovation/novelty	relation	relationships (interconnections)
unity of being (individualised specificity)	unity of law (functional typology)	place/space and time state	spatiotemporal location (inner)condition/structure, order
descriptive fixity	productive energy, drive etc.	action and affection	force, energy, change, power
classificatory stability	fluidity and evanescence	possession	accompaniments
passivity (being acted upon)	activity (agency)		

**Source:** Adapted from Rescher 1996: pp. 35 and 36.

For Rescher “the process metaphysician has no wish (and no need) for dispensing with the thing *concept*... ‘things’ are more instructively and adequately understood as instantiations of certain sorts of process or process-complexes” (Rescher 1996: 33).

There is a great deal more to this than we have the space to discuss here, but a key aspect of Rescher’s argument is that much of the dichotomous debate regarding substance and process is built around misunderstanding. Every substantive thing is in process and is part of processes at some scale of time – the universe is moving towards heat death and perhaps renewal, the earth’s lithosphere is in continual motion, landmasses shift, mountains rise and fall, oceans and seas swell and shrink, species evolve and become extinct, plants go through life cycles, as do animals, as do we, societies and ways of doing things are conceived, lived and altered, civilizations come and go etc.

As the initial quote from Rescher also indicates, “process” does not mean necessarily significant change in one thing or many things, change is simply an observable common manifestation of the condition of things in process. Moreover, process does not mean any particular described quality of change (degeneration, decay etc.) and nor is it restricted to cases lacking clearly defined substance, such as a storm or a riot (you can’t put a bit of storm in a jar and it remain “storm” nor can one put a riot in jail, only rioters), since this is to conflate “process” as a state with the absence of definitive substance in the particular case. Rather, for our purposes, *everything is in process*, while remaining some combination of matter and energy with complex organised powers and potentials (some of which are newly “emergent” i.e. dependent on the organisation of parts).<sup>29</sup> Continuity, endurance (perdurance) and change are ultimately all in some sense processual and in any case “there is no such thing as an instantaneous process” (Rescher 1996). One might also point out then, that process is not only pervasive, but by extension temporality is intertwined with process.

The above may seem like abstract philosophical points and thus a digression, but it is worth noting that they bear directly on how we view both central banks and money. There is a longstanding ontological/methodological critique of mainstream economics that suggests that it tends to theorise and model in terms of (implicitly) “closed systems” and this amounts to the claim that the mainstream deals poorly with change and uncertainty and by extension process (for example, Lawson 2015). As Sheila Dow notes, modern central banking is far more theory-bound than it used to be and thus more a mainstream creature, though there are definite limits to this (Dow 2017). As some readers may be aware, following the abject failure of its inflation forecasting, there is currently a review of the way the Bank of England goes about constructing and using forecasting.<sup>30</sup> More specifically, in a “May 2023 meeting, the Bank of England’s Court of Directors commissioned a review into the Bank’s forecasting and... As part of that, the review should consider the appropriate approach to forecasting and analysis in support of decision-making and communications in times of high uncertainty from big shocks and structural change.”<sup>31</sup>

It was announced on 28<sup>th</sup> July 2023 that Ben Bernanke, joint winner of the “The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel” in 2022 and former Chairman of the Federal Reserve (2006-2014) would lead the review, supported by the Bank’s Independent Evaluation Office (IEO). However, in November 2023 a House of Lord’s Economic Affairs Committee (EAC) inquiry expressed concern that more would be required to overhaul the way the Bank conducts itself and this extends to concern regarding its ever-expanding remit.<sup>32</sup> Some

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<sup>29</sup> Note, even the things physicists have conceived as fundamental at one time or another in state of the art theory had to come into being and depend on the organisation which is ‘intrinsic’ to that state of being. Fields, of course, and quantum states adds another facet to this, which arguably is processual.

<sup>30</sup> For previous critique of the econometrics and especially inflation targeting models see, for example, Nasir and Morgan (2018; 2023a, 2023b).

<sup>31</sup> Quote from Bank of England terms of reference press release: <https://www.bankofengland.co.uk/-/media/boe/files/news/2023/bernanke-review-tor.pdf>

<sup>32</sup> Visit: <https://www.ft.com/content/3c6cc2ff-e00b-4725-8454-2a18b042aeaa>

readers may also be aware that a previous EAC inquiry resulted in a degree of scepticism regarding CBDC – which was referred to as a “solution in search of a problem.”<sup>33</sup>

In any case, no review or reconsideration of the role of a central bank can be adequate unless it is able to make sense of context and make sense of process – a world in motion – and in the case of central banks this is quintessentially a matter of power, position and interests.

## **Conclusion**

There are numerous everyday issues we might bring to the fore here. The Bank of England, for example, is supposed to be self-financing but not profit-making. Interest bearing CBDC would thus be something of a problem. However, the underlying issues are who has the power to decide what form of organization a central bank is, followed by what decisions are made regarding what a central bank becomes, since these two create the framework and foci the central bank pursues. A CBDC, moreover, is an opportunity to revisit debates, and as a corollary invites further discussion regarding the nature and role of theory of banking, finance and money. A post Keynesian, for example, looks at these quite differently than a mainstream economist.

Finally, it is worth reminding ourselves that one of the original justifications for cryptocurrency was a deep scepticism regarding the motives of both corporations (“the banks”) and the state (insofar as the state is “captured” by financial interests). For a libertarian, the spectre of a central bank asserting greater control over money removes the main attraction that the technology originally offered (peer-to-peer decentralized activity). For more mainstream voices, a poorly constrained CBDC may undermine the independence of the Bank of England and provide a new set of tools that encourage greater intervention on behalf of the government of the day.<sup>34</sup> From still another perspective, CBDC offers scope to democratise finance and provide a public alternative that breaks the power of the banks. From this last point of view, the main barrier to enlightened use of CBDC is a narrow central bank technocracy, hampered by insufficient imagination and unwilling to grasp the potentials CBDC offers. There is, therefore, much to discuss and great need for deliberation.

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<sup>33</sup> For discussion of this see EAC (2022).

<sup>34</sup> This also invokes another issue we have not considered and that is the degree to which government fiscal policy is dependent on and constrained by debt issuance. The standard way to think about this (opposed by MMT proponents etc.) is that of the power of “bond vigilantes”. Sir Robert Steatham who was at the time CEO of the DMO commented on the reaction to Liz’s Truss’s infamous mini-budget of September 2022 “Don’t kid yourself in thinking that you can develop policy in a vacuum without taking the market into account. In a world where we have debt to sell, policy-making cannot be divorced from the reality of the market” (Ralph 2024).

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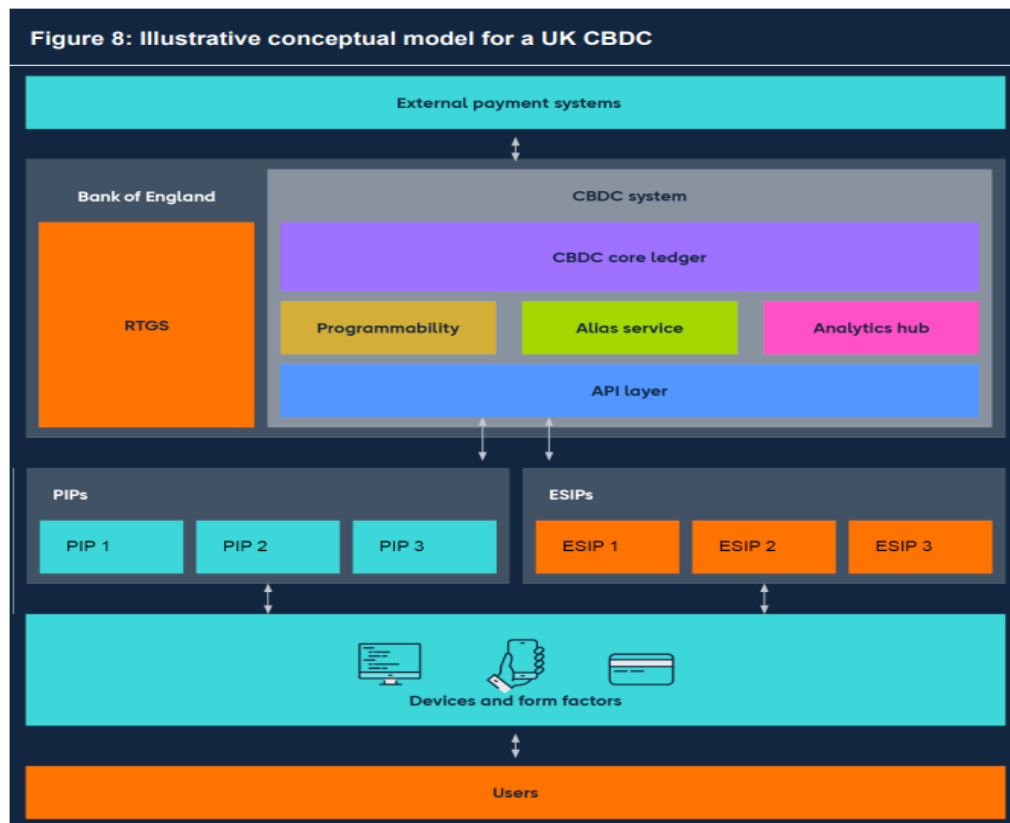
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## Appendix 1: Bank of England Summation of UK CBDC Format, Context and Potential



**Acronym key:** RTGS, Real-Time Gross Settlement Service; API, application programming interface; PIP, Payment Interface Provider; ESIP, External Service Interface Providers.

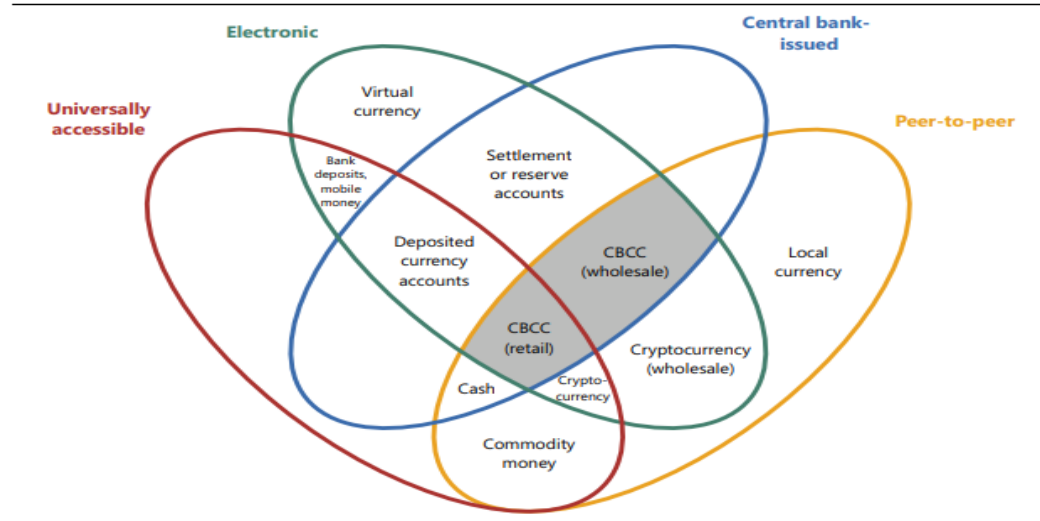
**Source:** Bank of England (2023b: 46)



## Appendix 2: Bank for International Settlement taxonomy of money

The money flower: a taxonomy of money

Graph 3



**Source:** Bech and Garratt (2017: 60)

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