NEW ECONOMICS FOUNDATION

BREAKING THE BANK?

THE CASE FOR AND AGAINST CENTRAL BANK LOSSES

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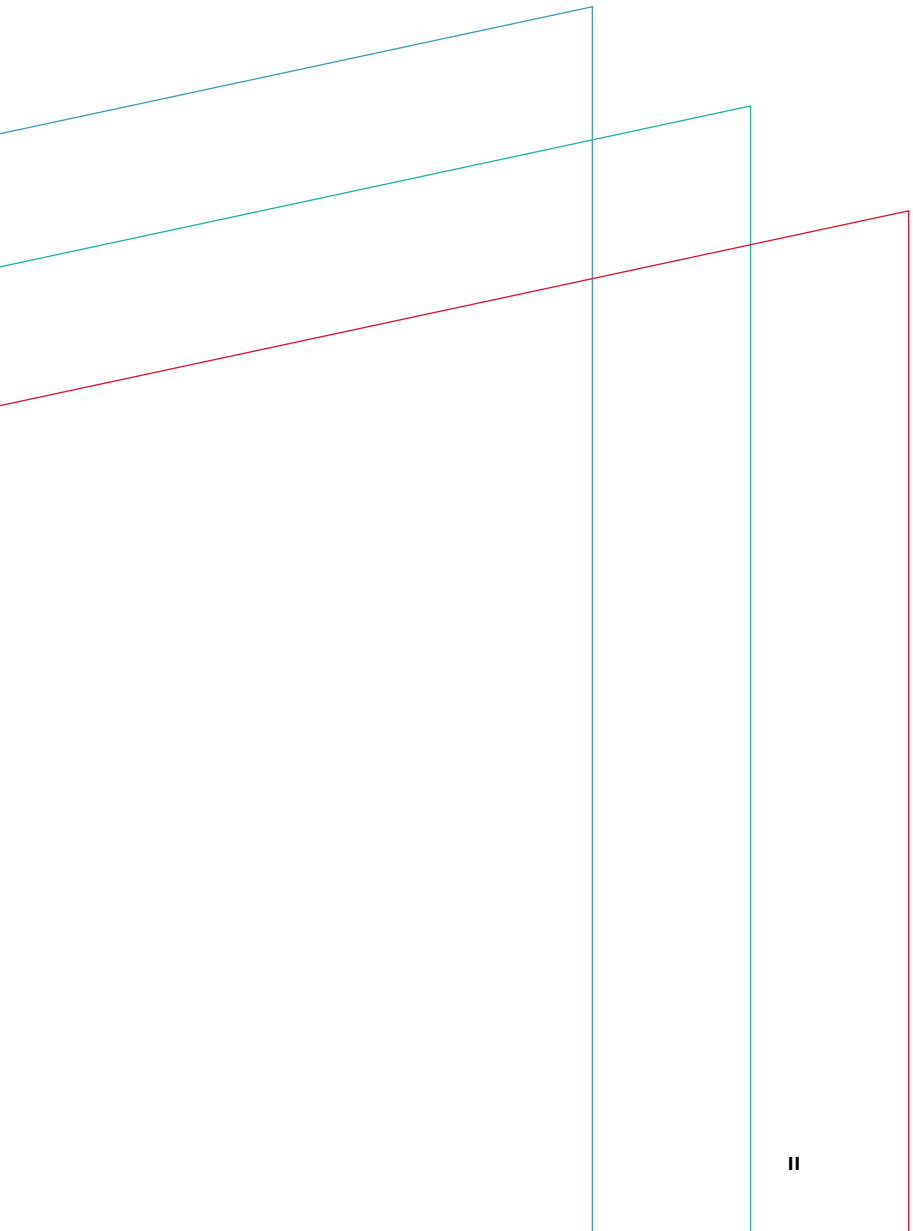

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EXECUTIVE SUMMARY

Central banks across the world are making losses, and in some cases, this is already costing their government treasuries billions. This is the case in the UK. The Bank of England has cost the UK government nearly £80bn since 2022 and is expected to cost around £20bn a year until 2033. While the Bank did make a profit for the government before 2022, it is now expected to make a lifetime loss close to £150bn. Despite such large costs, the issue has received little mainstream political scrutiny. This is surprising when one puts these numbers into context. The Bank's £20bn a year cost would make it the tenth most expensive government department, below the Department for Transport and above the Home Office.[1] Despite being more expensive than the majority of the government's 24 ministerial departments, the costs of the Bank of England received no scrutiny at the latest spending review.

The situation is even more surprising when one realises these costs represent a massive transfer to the banking sector. The reason central banks are making losses is largely because of their quantitative easing (QE) operations. When central banks first conducted QE, they purchased government bonds by issuing new central bank reserves – the money that commercial banks use to clear interbank payments. However, as central banks have raised interest rates to tackle inflation, the interest paid out on reserves has outstripped the interest income received from government bonds. Central bank costs are therefore greater than their income – a loss. Yet this loss has profited commercial banks, who are much better off from holding reserves than if bonds had stayed in their (or their customers) hands. In a context where the UK's top four banks have posted record-breaking profits, is this really a good use of public money?

In the UK, the costs of QE are shared with the Treasury due to the indemnity which was introduced by George Osborne in 2012 when QE operations were profitable. At the time, such an agreement helped him meet his fiscal rules. As easily as it was done then, the UK government could change the indemnity so these £20bn a year costs are not putting so much pressure on the Chancellor in meeting her fiscal rules. In fact, such an approach is adopted in the USA and the eurozone, where the Federal Reserve and European Central Bank (ECB) absorb their own losses via 'deferred asset' and 'losses carried forward' accounting. This allows central banks to retain profits (which would otherwise be sent to the government) until their losses are paid off.

Whether indemnified by the government treasury or using deferred asset accounting, both these positions implicitly seek to return the central bank to a position of positive equity. That is, a central bank has its losses covered through a cash injection from government borrowing or taxing (like the indemnity) or by retaining its own profits (like the deferred asset). Yet, there are also multiple examples throughout history of central banks that have persisted with negative equity, ie central banks that have made losses that have ultimately gone 'unfunded' by borrowing, taxing, or even retaining profits.

This report explores the reasons why central banks may want to avoid losses. It looks at the economic and political constraints on central banks and explains why they may prefer to have agreements that share losses with governments. Yet, current central bank losses demonstrate that there are certain levels of losses they can make; the theoretical limits on losses that central banks can afford are also much larger. Given this, the report argues that there should be better democratic scrutiny over how these losses are made and recognition that making additional losses is a credible option. While it may not be conscionable to make a £150bn loss that mainly goes to the banking sector, it may be more palatable (and economically justifiable) if this £150bn were spent enabling the green transition or helping bring down the cost of living. The fact that this sort of debate is considered taboo is a weakness of our economic and political systems and this must change.

Without change, we are stuck in a situation that can properly be described as monetary dominance. Central bank decisions are constraining fiscal policy. Such a system has attracted criticism, with

calls for a more radical overhaul from parties like Reform UK. Yet, the response to this challenge can't simply be to reaffirm monetary dominance, as some argue,[2] because the unchecked power of the central bank is the cause of these populist challenges in the first place. Nor should the response be to adopt a form of fiscal dominance - where fiscal authorities take control of monetary policy operations in a way that harms their ability to meet inflation or financial stability objectives. Instead, the solution is to adopt better monetary-fiscal coordination that will allow governments to democratically engage with the central bank while making sure both are working towards the same goals.

This report makes the following recommendations:

1. The Bank of England should begin absorbing its own losses by abolishing the indemnity to save the Treasury up to £20bn a year.

2. Central banks should regularly publish their "non-inflationary loss absorbing capacity", with appropriate sensitivities, to ensure the public have a better understanding of a central bank's ability to make losses without calling on the government.

3. Central banks should make losses if this can help them meet their mandates and support government policy. For example, central banks could strengthen their collateral frameworks and targeted refinancing operations by offering negative haircuts and discounted interest rates, respectively. Both would entail the central bank taking on greater (risk of) losses (in the former case). Yet, both would also make those policy tools more effective, heightening the preference for certain types of collateral and the incentive to lend in targeted areas, which can be aligned with government objectives.

4. If losses are not necessary to meet mandates and act against government policy, these should be reduced. For example, a tiered reserves system where commercial banks are required to hold reserves at the central bank that pay no interest could be implemented. This would reduce losses at the central bank with little impact, if any, on their ability to set interest rates – such a system is used by the ECB and the Swiss National Bank. Furthermore, the amount of unrenumerated reserves commercial banks are required to hold could be set in line with government objectives ie tighter conditions for areas that are not government priorities and looser conditions for ones that are. This would reduce losses while also better aligning the central bank with government policy, helping guide credit to priority areas.

5. To make sure such decisions to make or reduce losses are taken with democratic scrutiny, NEF recommends more explicit monetary-fiscal coordination. NEF has previously proposed the institution of an Economic Coordination Council (ECC). This would be an advisory board of fiscal and monetary policy experts (among others) identifying and recommending areas where the central bank and relevant fiscal authority could better coordinate. Importantly, to improve transparency and accountability, the central bank and the fiscal authority would have to justify why they didn't implement ECC recommendations.

These recommendations could encourage the use of central bank tools in an aligned whole-of-government strategy. Equally, they could relieve pressure on central banks to respond to supply-side inflation by encouraging governments to take on more responsibility. Doing so could potentially relieve short term fiscal pressures on governments, enabling them to respond to inflation in lower interest rate environments and stay focused on wider government objectives. The current approach to inflation has failed. A more coordinated approach is needed, not just to make monetary (and fiscal) policy more effective, but to make central banks more democratically accountable.

1. INTRODUCTION

Central banks typically publish balance sheet statements, yet the accounting concepts behind such statements - what the entity owns and is owed (its assets), what it owes to others (its liabilities) and whether it can afford what it owes (if it has positive equity to ensure solvency) - were not designed with central banks in mind. Instead, balance sheet statements arose from private firms and individuals wishing to track their profitability and avoid positions where they run out of money.[3] Yet a central bank, with the power to create reserves and cash, which are the ultimate means of settlement in the economy, cannot feasibly run out of money; in other words, a central bank cannot go bust in the conventional sense.

The accounting of central bank balance sheets is not just misleading; it has significant consequences for public policy outcomes. It affects how central banks justify and limit their distributional consequences when they flex their balance sheets. It also shapes their relationship with government treasuries and impacts fiscal policy. In this chapter and throughout this report, we highlight how far a central bank's economic reality diverges from conventional accounting logic. A better understanding of these concepts, as they are applied to central banks, is therefore essential for informed policymaking and expanding what is seen as economically possible.

When one considers private organisations and individuals, a balance sheet can be useful to understand their financial position. Typically, assets provide (or help generate) income and liabilities come with costs, so keeping track of these is important to help understand how a business may make a profit or loss. On a balance sheet, the difference between the value of assets and liabilities is called equity (sometimes also called net worth or capital). In other words, equity is how much money would be left if all assets were sold while simultaneously paying off all debts. Having positive equity, therefore, signals solvency; an individual or organisation has enough to sell to pay off what it owes. Additionally, if some equity is kept as cash, it can act as a buffer to absorb potential losses without having to sell assets that help generate income.

In the case of negative equity - liabilities outstripping assets - an entity will only be able to keep operating if it can meet cash-flow requirements. Negative equity can make cash-flow problems harder, eg the costs of liabilities outstripping income from assets, exacerbating losses. Therefore, insolvency will often require a business to become more profitable or receive a cash injection to restore positive equity. Ultimately, persistent negative equity will lead to firms going bankrupt, unable to make the money to meet all their debts.

Central banks, however, operate very differently. First, central banks are often wholly owned by their government.[4] In this case, the central bank is essentially a subsidiary of the government. In the private sector, a subsidiary may be insolvent if its parent company is solvent.[5] It does not necessarily matter if the subsidiary reports an insolvent balance sheet, as long as it can meet its cash flow requirements without making its parent insolvent. Therefore, a central bank can be technically insolvent so long as its government is solvent.[6]

However, government solvency is peculiar. A government, whose debts are issued in its own sovereign currency and whose central bank acts as lender of last resort, cannot reasonably default on their debt unless by choice.[7] The central bank can always create the money needed to meet a debt obligation. In fact, government solvency, in this regard, is determined by both monetary sovereignty and the government's place in the global currency hierarchy.[8] The former constrains how much the central bank can intervene without causing adverse macroeconomic effects. The latter defines how desirable debts denominated in the sovereign currency are likely to be and therefore how much a government may issue debts in its own currency in the first place.

The mainstream perspective on government solvency has often focused on fiscal discipline: that governments make sure that they maintain prudent levels of debt[9] and eventually pay this off via taxation or other income.[10] Yet this is misleading. Actual solvency is maintained by the monetary factors above, and governments have remained

solvent at many different levels of debt[11] and stayed solvent while indebted for hundreds of years.[12] Instead, fiscal discipline is important insofar as it credibly supports central bank mandates of price and financial stability.[13] For example, if the government embarks on inflationary expansionary spending (or tax cuts) against the central bank's mandate, it weakens the ability of the central bank to act as the lender of last resort for the government without undermining its own objectives of keeping inflation low. In this case, the problem facing this government is not its inability to repay its debts, but the inability to keep inflation under control. Ultimately, the government's power to tax is what keeps this system stable,[14] offering a way to stop borrowing or money creation from growing out of control and to ground inflation expectations.

In this sense, a currency's value is inherent to the trust we hold in our governments.[15] That trust is the belief that fiscal and monetary policy choices will keep the value of money relatively stable over time. This ensures money meets its key functions: as a unit of account, a store of value and a medium of exchange. Historically, when trust in money has been broken, it has led to currency rejection and hyperinflation,[16] from the Weimar Republic to Zimbabwe. In this sense, through a rejection of the currency they create or through a central bank completely abandoning its objectives, central banks can go bust. Therefore, while central banks are not constrained in their ability to go into negative equity, they are constrained by the effects of their actions on their primary and secondary objectives, ie to keep inflation stable and support government policy.

Secondly, even a central bank not backed by its government can stomach some levels of negative equity. This is because a central bank's ability to create currency means they cannot face liquidity issues in their own currency. Therefore, even if negative equity intensifies losses, a cash-flow problem will never arise. Furthermore, the ability to create money gives central banks a source of income – seigniorage – that they can use to offset losses and restore equity. Again, a central bank's ability to do this will depend on how credibly it can go into negative equity without jeopardising other macroeconomic conditions[17] and its place in the global hierarchy of currencies,[18] with the latter defining how easily any new currency supply can be absorbed by private markets.

The fact that central banks can maintain negative equity levels is exemplified by Czechia, Chile, and Mexico whose central banks have operated with persistent negative equity for decades.[19,20] Despite this, many central banks,[21] including the Bank of England,[22] have policies to maintain capital buffers, ensuring they keep a positive equity position. In fact, the Bank of England's website suggests it "needs" capital to absorb losses,[23] even when multiple central banks have taken alternative measures.

Furthermore, how central banks define the level of equity on their balance sheet is contested. On a central bank's balance sheet, cash in circulation and central bank reserves - the money private banks hold at the central bank - appear as liabilities. Yet liabilities typically represent obligations to be settled in something other than the liability itself. For example, a loan is a liability that you pay back with cash or bank transfers. Central bank money, however, can only be paid back with central bank money of the same value; it is irredeemable.[24] Furthermore, anyone who holds central bank money probably does not see the central bank as 'owing' them but instead sees money as something they outright own.

Money's irredeemability is only a recent innovation that came along with the adoption of fiat currencies. Fiat currencies are not backed by commodities and so challenge the idea that money has to be redeemable in something else. When money was backed by gold and other precious metals, money really was a liability to the central bank.[25] The central bank owed a certain amount of metal to the holders of money. Therefore, some argue that the treatment of central bank money as a liability is a historical anachronism carried over from the gold standard.[26]

These peculiarities have made multiple legal and economic scholars question the treatment of fiat currencies as a liability of the central bank. One group of scholars saw money as a form of social equity that "confers rights of participation in the economy's payment system and thereby its economy".[27] Others have argued that cash should be removed from central bank balance sheets.[28] Some too have argued for a new accounting framework for money that would consider money as equity for the entities that create it.[29] While this report does not take a definitive view on how

central bank currency should be accounted for on its balance sheets, it is worth noting that there is a wide diversity of thought on the issue.

The point of still talking in the language of conventional accounting is that this is how central banks communicate their positions to the general public and market actors. To fully understand how a central bank's balance sheet is itself an economic tool, the next chapter looks at the current accounting of central bank balance sheets in detail and how this has evolved over time. Chapter 3 looks at the implications of balance sheet positions on central bank profits and losses and how these are shared with fiscal authorities. Chapter 4 explores the reasons central banks may avoid certain balance sheet positions despite them not having much economic meaning. Chapter 5 introduces alternative policies to manage central bank balance sheets that focus on economic rather than accounting principles. Chapter 6 lays out our policy recommendations.

2. CENTRAL BANK BALANCE SHEETS

Central bank balance sheets are made up of liabilities, the majority of which (cash and reserves) define the money we use in the economy, and assets, the majority of which reflect the operations central banks implement monetary policy with. To help visualise this, Table 1 and 2 breaks down the Bank of England's balance sheet as of March 2024.[30] The tables show how assets and liabilities are accounted for at the Bank, along with their value on the balance sheet, a brief description and any associated costs/income.

TABLE 1. THE BANK OF ENGLAND'S LIABILITIES

Liability	Value (£ bn)	What it is and why it matters	Interest costs
Cash (notes)	88.2	The money you hold in your hands. Only notes are issued by the Bank of England, so this only covers the value of notes in circulation, but other central banks may produce coins too. When money is created, it is used to buy assets, which returns income called seigniorage.	Pays no interest; source of income via seigniorage.
Central bank reserves	802.3	Deposits that commercial banks hold at the Bank of England to settle interbank payments. Acts as the backbone of the banking system. The Bank of England steers monetary conditions by setting terms and conditions on access to reserves, eg how much they are remunerated.	Paid at the policy rate that the Bank sets for monetary policy.
Other domestic liabilities	31.8	Mainly reserve-style accounts for non-banks (eg HM Treasury, Debt Management Office) and services for 130+ foreign central banks. Includes some operational requirements (eg pensions, leases).	Costs vary depending on the specific source.
Foreign liabilities	20.3	Bonds issued in foreign currencies (mainly dollar and euro) to fund the UK's foreign-exchange reserves. Not so important for central banks that do not target exchange rates but held on a precautionary basis.	Typically pay market yields in the relevant currency.

TABLE 2. THE BANK OF ENGLAND'S ASSETS

Asset	Value (£ bn)	What it is and why it matters	Interest income
Government bonds	760.5	Government bonds, which were mostly bought as part of quantitative easing (QE) operations. The majority appears as a loan to the Asset Purchase Facility on the Bank of England's balance sheet, but is the same value as bonds bought.	Yields are locked in when purchased. QE operations were undertaken when interest yields were low by historical standards.
Repurchase agreements (repos)	7.4	Short-term lending against collateral: the Bank of England buys a security (usually at a discount) and agrees to sell it back later at a higher price (based on interest rate). Repos are increasingly being used to give commercial banks access to extra reserves.	Earns repo rate, usually the same as the policy rate, potentially with a premium on top depending on the type of collateral.
Refinancing operations	144.2	Longer-term loans to banks (eg term funding scheme). Collateralised like repos but structured as straight borrowing to steer credit conditions and support targeted lending. Central banks in Japan and China are examples where green sectors have received discounted refinancing.	Generally priced at, or slightly below, the policy rate to encourage take-up.
Other domestic assets	4.7	Physical assets (eg property, equipment), intangible assets (eg in-house software), and money owed but not yet repaid to the Bank of England.	Largely non-interest-bearing; some items are incomes yet to be collected.
Foreign assets	22.7	Holdings of foreign currency deposits, bonds, and other reserve assets held at or issued by foreign central banks and markets. Gold is not included (as it's owned by HM Treasury) for the Bank of England but is common at other central banks.	Earn foreign-currency interest in line with the issuing central bank's policy and market yields.

2.1 THE EVOLUTION OF CENTRAL BANK BALANCE SHEETS

As seen in Tables 1 and 2, the Bank of England's current balance sheet leans towards its liabilities being made up of central bank reserves and its assets being made up of government bonds. Combining these, the Bank of England's assets are worth £939bn or 33% of UK GDP.[a] Similar stats are true in the USA (at 24% US GDP[b]) and the eurozone (at 36% eurozone GDP[c]). Yet, central bank balance sheets have not always looked this way.

To understand why central bank balance sheets have grown so large in recent years and why they have been dominated by reserves and government bonds, it is important to look at the policy choices that enabled these changes. Figure 1 shows two charts of the Bank of England's liabilities (including equity) and its assets since 2013. By definition, the balance sheet will balance as any expansion in assets quicker than liabilities will show up in increased equity (or decreased equity vice versa). Yet, usually, central bank policy will expand liabilities and assets by roughly equal amounts. This can be seen in Figure 1 at the expansion points in 2016-17 and 2020. These two points represent periods where the Bank of

a UK 2024 GDP from Office for National Statistics
b USA 2024 GDP from World Bank, balance sheet data from Federal Reserve
c Eurozone 2024 GDP from Eurostat, balance sheet data from European Central Bank

England initiated further quantitative easing (QE) rounds, where it bought government bonds off the private market, settling these transactions by creating new reserves. Therefore, because of QE, the Bank of England obtained new assets worth roughly £200bn and £400bn in 2016-17 and 2020-21, respectively, while creating roughly £200bn and £400bn new reserves to meet these transactions.

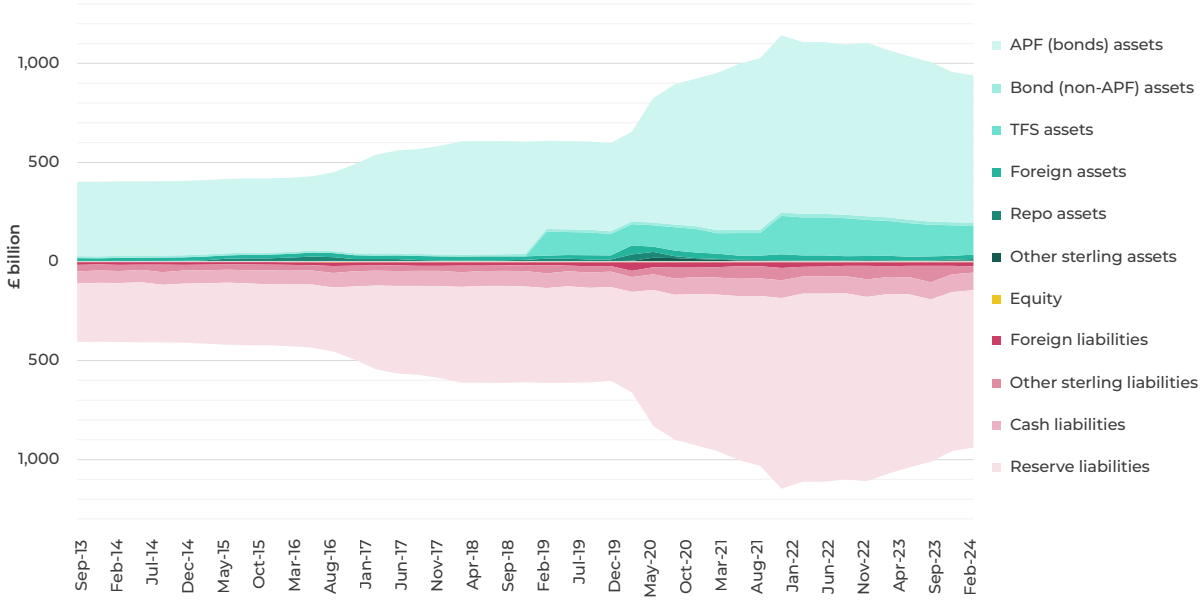
Before QE, central bank balance sheets were relatively small.[31] In 2006, the Bank of England's balance sheet had assets of £61.6bn[32] or just 4% of 2006 GDP.[33] Then, commercial banks held few reserves, typically holding just enough to settle transactions with each other. This is referred to as a scarce reserve system, where banks must borrow reserves to meet any shortfalls in interbank transactions.[34] Therefore, before 2006, central bank balance sheets mainly grew in line with banks' need to settle payments with each other and consumers' demand for cash. In this case, central bank balance sheet changes were being driven by demand for central bank money.

However, as QE expanded, reserves were no longer scarce. This is referred to as an abundant reserve system, where banks do not typically need to borrow reserves to settle interbank payments.[35] Therefore, in recent years, balance sheet growth has mostly been driven by central bank policy and overwhelmingly so by QE. In this case, central bank balance sheet changes were being driven by the supply of central bank money.

While balance sheets have grown due to the supply of central bank money, there may also have been an underlying increase in demand. For example, central banks are beginning to study the preferred minimum range of reserves (PMRR), the level of reserves private banks would choose to hold freely.[36] An estimate from the Bank of England[37] calculates this at £345-£490bn (12%-17% of GDP[d]), much larger than the days before QE. Demand for central bank money has likely been driven by financial regulations requiring commercial banks to hold safer and more liquid assets,[38] which holding central bank reserves helps meet. Further, capital requirements also ensure banks hold a certain amount of equity in more liquid forms.[39]

FIGURE 1: HOW THE BANK OF ENGLAND'S BALANCE SHEET HAS EVOLVED OVER TIME.

The Bank of England's balance sheet 2013-24, broken down by value (£ billion) of assets (above axis) and liabilities and equity (below axis).



Note: Bank of England (2025). Complete data is only available for the period shown. Categories chosen by the author.

d 2024 GDP from Office for National Statistics

As the Bank has now embarked on a programme of quantitative tightening (QT) - actively selling bonds or not reinvesting their proceeds, hence reducing its reserve liabilities and ownership of assets - the Bank of England may hit the PMRR soon.[40] When this point arrives, the Bank wants to make sure the private banks have access to the amount of reserves they demand. Therefore, the Bank has expanded its repo provision to offer new tools to private banks to borrow reserves,[41] introducing a repurchase agreement with a six-month term.[42] Together, the Bank of England's balance sheet will be expected to settle when its reserves are at the PMRR.

The key lesson here is that how the central bank's balance sheet evolves over time is a direct consequence of policy choices in two ways. First, the open market operations (like QE/QT) it partakes in directly change the composition and size of its balance sheet. Second, the terms and conditions it sets on access to reserves, along with other macrofinancial factors, influence how willing private banks are to partake in these open market operations in the first place. Ultimately, private banks cannot get rid of reserves or obtain reserves on aggregate other than through interactions with the central bank.[43] Therefore, it is the central bank that decides how the size and composition of its balance sheet change over time.

2.2 THE MYTH OF CENTRAL BANK NEUTRALITY

With this understanding, it is clear to see how a central bank's balance sheets also reflect decisions on how it interacts with the rest of the economy. In choosing what assets it obtains and liabilities it issues, the central bank influences financial conditions in the rest of the economy in a way that is ultimately non-neutral. This is despite central banks often communicating the opposite.[44,45]

A good example of this is how central banks have used refinancing operations. In the UK, the term funding scheme (TFS) in 2016 offered banks the opportunity to lock in borrowing at the bank rate for four-year terms with conditions favouring banks expanding their net lending.[46] Further in 2020, the Bank of England introduced the TFS with additional incentives for small and medium enterprises (SMEs) (TFSME), ie four-year term lending at bank rate with conditions favouring expanding net lending to SMEs. Over £120bn of funding was lent for the TFS and over £200bn for the TFSME, and was financed by the Bank of England creating new reserves.[47] This use of refinancing operations showcased the Bank prioritising SMEs as part of its role in supporting government policy, while also wielding its balance sheet to direct lending in the economy.

Other central banks have used refinancing operations in similar targeted ways. In Japan[48] and China,[49] refinancing operations have helped encourage lending to green sectors, even at discounts to the bank rate. NEF has argued for green refinancing operations to be implemented in the UK and Europe precisely because it represents a way a central bank can use its balance sheet to support the green transition while relieving inflationary pressures in green supply chains.[50]

Furthermore, as repos become more commonly used by central banks as their balance sheets become more demand-driven, the collateral frameworks applied to different securities will become more significant.[51] NEF has previously looked into how current collateral frameworks inherently favour securities associated with fossil fuel companies by purchasing these assets at prices closer to their market value (ie applying a smaller 'haircut').[52] This gives them favourable access to financing, which makes transitioning to a low-carbon economy harder.

The critical point here is that, whichever way a central bank expands (or shrinks) its balance sheet, the ultimate beneficiaries (or losers) of central bank money will result in specific distributional consequences in the real economy that can't be neutral. This myth of neutrality is why engaging with how the central bank's balance sheet is used is so important. Not only can this shape financial conditions, but as the next chapter explores, the central bank's balance sheet can also imply direct flows of income from or to the public sector. Understanding how the central bank manages its balance sheet is, therefore, necessary to engage with current policy and to propose alternatives.

3. MANAGING CENTRAL BANK PROFITS AND LOSSES

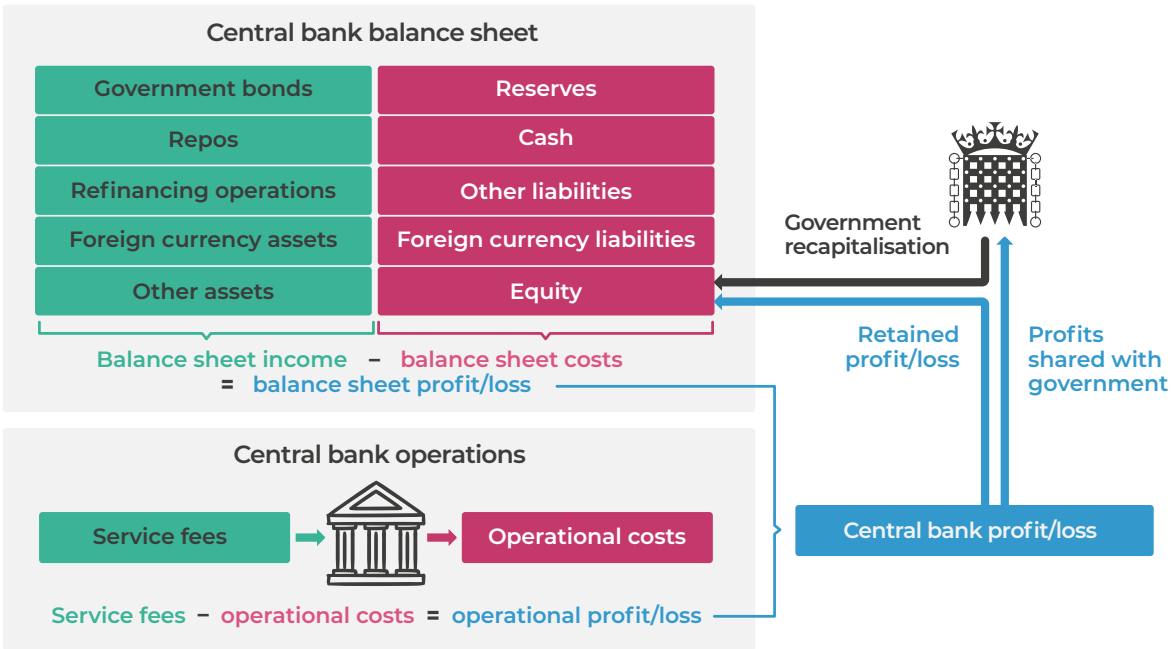
As mentioned in the previous chapter, central bank assets and liabilities provide income and cost streams depending on the specific asset or liability. Furthermore, central banks often charge their participant banks fees to use their services[53] and incur operational expenses like paying staff. On top of this, central banks often have close relationships with government fiscal authorities who may choose to recapitalise the central bank (provide an income injection to the central bank) or receive a dividend from the central bank (receive an income injection from the central bank). Once all these incomes and costs are considered, the central bank may make a profit or a loss. This is illustrated in Figure 2.

When a central bank retains profits, it improves its equity position. In general, central banks usually have low levels of capital, as most profits are transferred to governments.[54] For example, the Bank of England's equity is just 0.3% the value of its total assets. Central banks tend to retain equity in the form of 'own reserves', 'provisions', or 'capital' accounts that are essentially the central bank's claim on its own reserves. This can be seen as an account of the central bank's retained profits.

It should be questioned why a central bank needs to keep reserves that it can simply create at any time. Here, it is important to understand that practically all transactions at a central bank will be done using its own reserves. Therefore, whenever a central bank is in profit, it will have received more reserves than it has paid out. In contrast, when a central bank makes a loss, ie it pays out more in reserves than it receives, the value of the capital account will reduce. So, it can alternatively be seen as how much of a loss a central bank can make before it has spent all its retained reserves.

As a central bank's profits or losses reflect the difference in the amount it is receiving in income and paying out in costs, it also reflects transfers to/from the wider private sector. When a central bank makes a profit, it is receiving more income from the private sector than it is paying out, and vice versa. Therefore, the profit and loss of the central bank is a key area to observe to understand the distributional consequences of the central bank's policy.

FIGURE 2: THE RELATIONSHIP BETWEEN THE CENTRAL BANK'S BALANCE SHEET AND ITS PROFIT/LOSS.



Note: Author's illustration

3.1 CENTRAL BANK PROFITS AND PROFIT SHARING

It is worth illustrating how a central bank can earn profits. One way central banks make profits is directly from their ability to make money. When central banks produce physical cash, it usually costs them much less to make than the face value of the coins and notes. Yet, once these coins and notes are created, they can be exchanged with commercial banks for reserves at face value. This keeps the central bank's balance sheet the same size while changing its composition of liabilities, reducing the amount of reserves while increasing the amount of cash. If cash is being issued in a way that is neutral to the balance sheet, then this will only increase central bank profits insofar as it will save money by reducing interest paid on reserves.

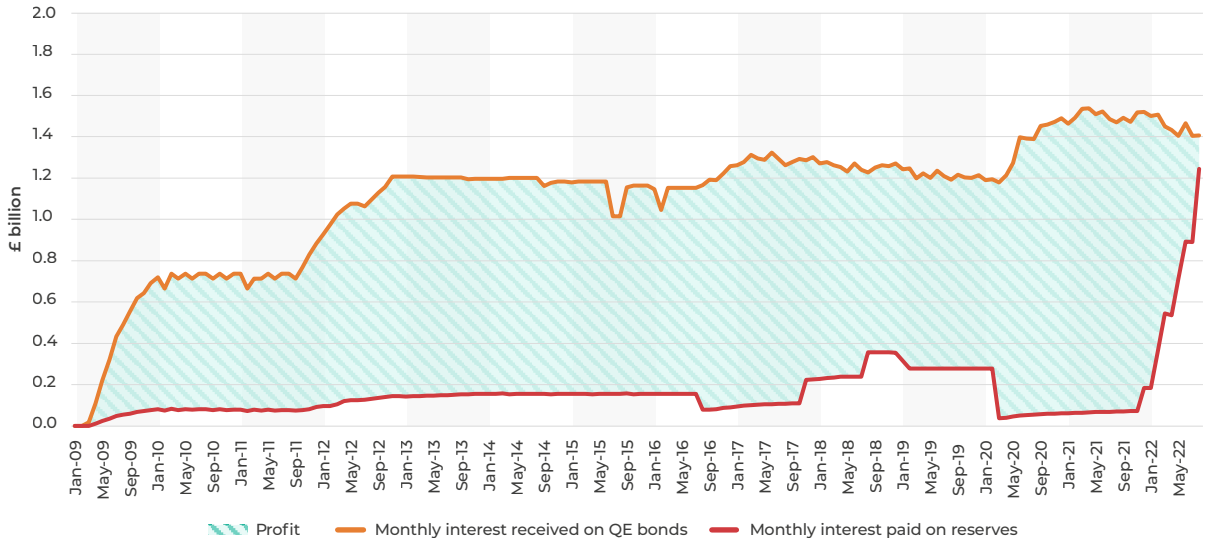
However, money can also be issued in a way that expands the central bank's balance sheet such that total liabilities increase. In this case, some of the reserves the central bank receives in payment for cash can be reinvested into interest-bearing assets. Therefore, in these cases, the central bank is receiving a source of income it wouldn't have otherwise been able to obtain without its power to create central bank money. Taking the cost of printing money away (usually much smaller in comparison) from this income, the resulting profit is called seigniorage.[55]

At the Bank of England, the Bank's balance sheet is split between a Banking Department, which deals with monetary policy implementation and an Issue Department, which deals with the issuance of cash.[56] This split is due to how the Bank historically organised itself, but to this day, it means the Bank makes separate balance sheet statements for each department. Currently, for the c.£90bn of notes in circulation, the Issue Department holds an equivalent amount of assets, which has produced an income of just over £4bn a year in the two most recent annual statements.[57] This split of the Bank's balance sheet also facilitates a particular requirement for profit sharing. The Bank transfers practically all seigniorage income made in the Issue Department to the Treasury via the National Loan Fund's account at the Bank of England.[58] As the National Loan Fund is used to manage government borrowing, this transfer directly reduces government borrowing needs.

Central banks also made profits when they first conducted quantitative easing (QE), buying up government bonds by issuing new reserves. Initially, as the interest paid on government bonds was higher than the interest paid on central bank reserves, this difference generated a net income for the central bank. This can be seen in Figure 3 for the Bank of England; between 2009 and 2022, this generated a total profit of £155bn.

FIGURE 3: UNTIL 2022, QUANTITATIVE EASING WAS PROFITABLE FOR THE BANK OF ENGLAND.

Monthly interest received/paid (£ billion) by Bank of England 2009-22.



Source: Office for National Statistics (MDD6, MDD7)

The Bank of England officially conducted QE off its balance sheet via the asset purchase facility (APF). Therefore, like the Issue Department, a special requirement was put on the APF such that it shared all its profits with the Treasury from 2012. This agreement between the Treasury and the Bank of England is known as the indemnity.[59]

When the indemnity was announced, it was seen as a trick that allowed George Osborne, then Chancellor, to meet his fiscal rules.[60] Sharing these profits directly relieved the Treasury of some borrowing costs. The point here is that while the profits shared helped at the time, the indemnity also required the Treasury to cover losses once they came and is now having the opposite effect of making the Chancellor's fiscal rules harder to meet.[61] This is looked at in detail in the next section, but it is worth noting that the sharing of these profits came about from decisions that were likely influenced by the government's fiscal position, suggesting a degree of monetary-fiscal coordination here.

Lastly, central banks can also make profits on their other operations. For example, repos involve the central bank purchasing securities by issuing reserves that are then repurchased by the borrower for a higher price. So long as the interest rate on reserves is lower than the implied interest rate of the repo, this will be a net transfer of reserves to the central bank.

In general, central banks make small profits on their operations, partially because it helps them provide good value financial operations to market participants, but also because ultimately it is not their goal to make a profit.[62] For example, excluding QE and seigniorage, the Bank of England only made a profit of £128m last financial year[63] – just 0.01% of its total assets. In the UK, this profit is taxed, leaving £98m after-tax profits,[64] and then any leftover profit is also shared according to a specific rule aiming to maintain a target level of loss-absorbing capacity (LAC).[65] This is essentially its equity minus its illiquid assets (eg physical property); this can be seen as the Bank of England's capital account, as mentioned earlier.

The details of how the Bank maintains the LAC are laid out in a memorandum of understanding between the Treasury and the Bank of England.[66] The document specifies that while the LAC is between £0.5bn and £3.5bn, all profits should be retained by the Bank of England, noting that this does not include seigniorage profits from the Issue Department or any APF profits. If the LAC is between £3.5bn and £5.5bn, then the Bank will share 50% of its profits with the Treasury. Over £5.5bn, the Bank will share all its profits with the Treasury. At the moment, the LAC is £3.4bn, so of the £98m after-tax profits, none was shared.[67]

Lastly, a paper published by the Bank of England, on a sample of 70 countries, found that all central banks studied had rules to share profits.[68] In some cases, this is defined as a certain percentage of the central bank's profits, essentially acting as a tax. Like the Bank of England, some central banks will also have to explicitly pay corporation tax or their national equivalent.[69] Other central banks will also share profits depending on whether a capital target is being reached. Even without special rules to pass on all profits like the UK has for seigniorage, central banks tend to report low levels of equity compared to the size of their balance sheet. Typically, profit-sharing rules mean they rarely get to build up profits without having to pass them on.

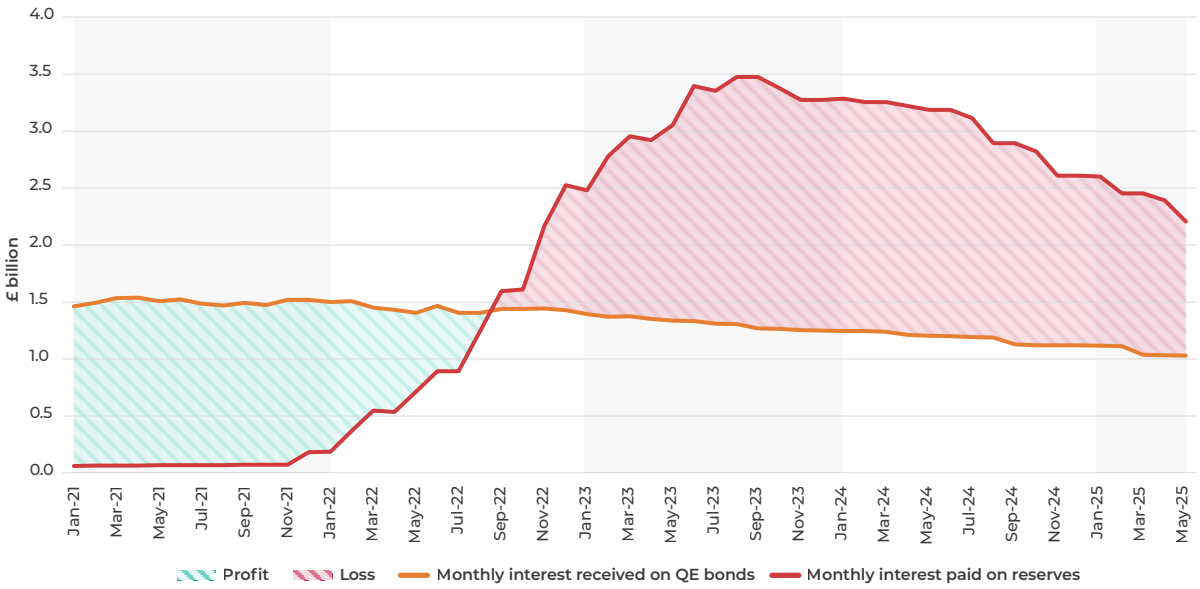
3.2 CENTRAL BANK LOSSES AND RECAPITALISATION

In recent years, many major central banks have reported large losses.[70] These losses have mostly manifested due to negative interest rate margins on QE operations and quantitative tightening, causing asset revaluations. Both are now explained in turn.

By undergoing QE, central banks bought up assets with fixed interest by issuing reserves that pay an interest rate that the central bank varies to implement its monetary policy. This introduces an interest rate risk to the central bank's balance sheet, as it means whenever the central bank changes the interest rate on reserves, it could begin to outstrip the return on its assets, causing a loss. In other words, its net interest margin on reserves and bonds would become negative. In fact, since 2022, this has happened across central banks. As the Bank of England raised its interest rate on reserves above 2.25%, the APF began to make a loss. As shown in Figure 4, between 2022 and 2025, this has so far led to a total loss of £53bn.

FIGURE 4: IN RECENT TIMES QUANTITATIVE EASING HAS PUSHED THE BANK OF ENGLAND INTO MAKING A LOSS.

Monthly interest received/paid (£ billion) by Bank of England 2021-25.



Source: Office for National Statistics (MDD6, MDD7)

While there is a negative interest margin, the central bank will be adding new reserves into the system without obtaining any backing assets. Therefore, a loss will change the composition of a central bank's balance sheet while weakening its equity position.

Along with hiking interest rates, central banks have begun to reverse their QE operations, undergoing quantitative tightening (QT),[71] which is also causing losses. For most central banks, QT involves letting the bonds on their balance sheets mature. At maturity, bonds will pay the face value agreed when the bond was issued. However, central banks bought a lot of bonds below face value.[72] Therefore, central banks issued more reserves than they will receive back at maturity, causing a loss.

Furthermore, in the UK, the Bank of England is actively selling off its QE portfolio of bonds.[73] In this case, the loss made is the difference between the price originally paid and the current market value.[74] Because bonds were bought in low-interest environments when asset prices were high and are being sold in high-interest environments when asset prices are low, this is leading to substantial losses. For example, one bond the Bank bought for £100m was sold for £28m – a 72% valuation loss.[75]

The Bank of England justifies its sales based on the fact that it bought bonds of higher maturity on average compared to other central banks. Therefore, simply letting bonds mature would take longer for bonds to come off its balance sheet than other central banks.[76] Furthermore, markets price bonds to obtain yields that largely reflect expected central bank interest rates over time. Thus, the Bank of England argues, there should be little difference over time between making a loss through sales now and holding a bond to maturity, ie the cost of carry should equal the cost of sale.[77] However, this argument depends on markets being correct and also that the premiums on government bonds (above expected central bank interest rates) are not significant. Unfortunately, this goes against speculation that premiums on UK bonds are currently very high.[78]

The reason this is important is that the indemnity described earlier works both ways. Any losses the APF makes, on QT or the negative interest margin of QE bonds, are covered by the Treasury. Essentially, the Treasury agreed to recapitalise the Bank of England for any loss it makes at the APF. This recapitalisation helps cancel out the unbacked reserves left from making a loss and restores the Bank's equity. Even if the Bank is correct that active QT doesn't exacerbate total lifetime losses, it

does hasten them and directly increases the costs of recapitalisation for the Treasury within the year. Therefore, while George Osborne introduced the indemnity to help meet his fiscal rules, losses now make them harder to meet. At the moment, the Office for Budget Responsibility (OBR) estimates losses associated with QT are around £20bn a year until 2033, while losses from interest margins on remaining gilts are falling over the period, averaging £4.3bn a year.[79]

Outside of QE/QT, central banks can make interest rate and valuation losses in similar ways on other assets not related to QE operations. Furthermore, central banks are exposed to currency risks with assets denominated in foreign currencies and may experience credit risks with ownership of assets that can default (ie private company bonds).[80]

In the UK, losses from these other sources are managed via the memorandum of understanding mentioned earlier. If a loss causes the LAC to fall below £0.5bn, the Treasury is expected to intervene by recapitalising the Bank to bring it up to that threshold. In practice, this means the Bank of England is never allowed to go into a position of negative equity. The Treasury is expected to recapitalise such that equity doesn't go below £0.5bn.

Other central banks, like in Uruguay and Moldova, have similar rules where treasuries are expected to recapitalise to maintain capital buffers.[81] Yet more central banks take approaches where they simply ask to be recapitalised.[82] This is the case in Sweden, for example, where the Riksbank asked for 80bn Swedish Krona (roughly £6bn) in payments from the government in 2023.[83] Each time the Riksbank asks to be recapitalised, this has to be voted through parliament.[84]

It is worth questioning whether a central bank needs to be recapitalised at all. Consider what would happen if a central bank never sought recapitalisation. As explained, losses will lead to unbacked reserves being created or simply left in the system. By itself, this should not cause the central bank any operational issues; central banks can create money at the stroke of a key. However, the only way to remove the unbacked reserves from its balance sheet will be for the central bank to make a profit.

Some central banks have created accounting tricks for these losses to be paid off by future profits. For example, the US Federal Reserve uses a deferred asset that appears on its balance sheet as a negative liability, helping it look like its liabilities are not increasing and concealing its negative equity position.[85] The point of the deferred asset is that if the Fed returns to profitability, these profits will go to paying down the deferred asset, thus destroying the excess reserves that had been created. In other words, once the Fed returns to profit, these profits are not transferred to the Treasury as they usually would be[86] and instead go to paying down the deferred asset. Ultimately, the Treasury loses out on the same amount of money as it would have if it had directly recapitalised the Fed for its losses. The difference is, instead of immediately paying for those losses now in the form of transfers, the Treasury simply forgoes receiving potential future profits.

In this case, the deferred asset puts no immediate pressure on the government to raise taxes or issue bonds to recapitalise, as, instead, the Fed meets costs by issuing reserves. Furthermore, assuming profits are sufficient, it returns the central bank to a positive equity position over time. Such an approach, especially in response to the high losses we have seen post-Covid-19 pandemic, has been recommended by the International Monetary Fund (IMF) economists as the best option for central banks.[87] Explicitly, this was recommended over indemnity schemes like in the UK or more discretionary recapitalisation like in Sweden.

Lastly, a Bank of England paper finds 37 out of 70 countries surveyed say nothing at all about what should happen in the event of a loss.[88] In some cases, this might be because they have not experienced losses before so have not had to create policies. Yet it should be considered that central banks don't even necessarily need to be recapitalised or have a deferred asset. Instead, they could simply allow unbacked reserves on their balance sheet and maintain a negative equity position. The fact that the central banks of Chile, Czechia, and Mexico have had consistent negative equity in their history implies that this is certainly an option.

3.3 DO CENTRAL BANK LOSSES MATTER?

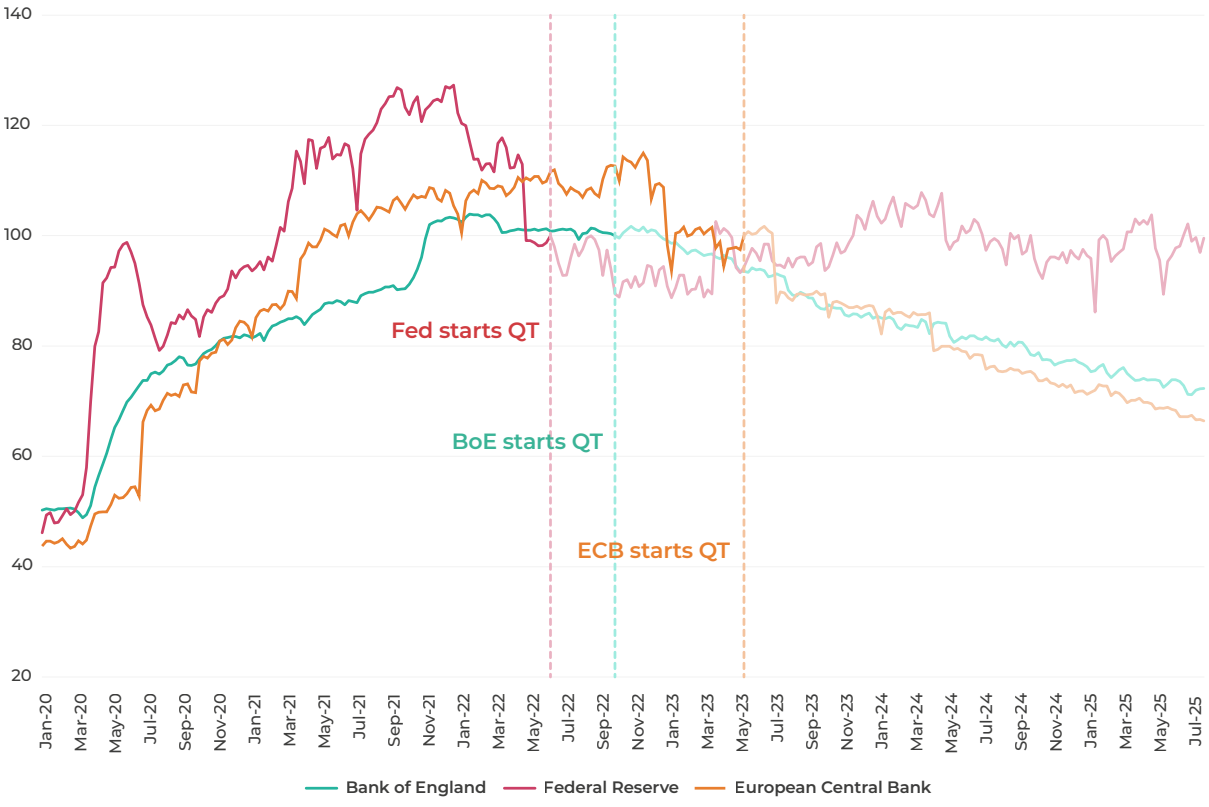
If central banks do not need to recapitalise losses, adopt deferred assets, and can operate with negative equity, it should be questioned whether central bank losses matter at all. Under a global context where central banks are increasingly reporting losses, the central bank of Spain[89] and the Bank of International Settlements[90] have both published papers aiming to dispel the myth that central bank losses can cause operational problems. In both cases, they conclude that a central bank's loss position is not an issue if it is still able to meet its mandates on price and financial stability.

Currently, central bank losses in the UK mean the Treasury will be sending over £100bn to the Bank of England in the next five years, which will directly be passed on to commercial banks.[91] At a time when commercial banks have seen record-breaking profits year after year[92] it should be questioned if this is a good use of public funds. Looking at the different approaches to QT in the UK, the EU, and the USA can provide an interesting case study of how these choices affect the liability side of the central bank's balance sheet.

Figure 5 shows the level of reserves at the Federal Reserve, the European Central Bank (ECB), and the Bank of England since 2020. Reserve levels all grew by roughly the same amounts at the start of the Covid-19 pandemic as central banks helped support emergency government borrowing. The Fed, the ECB, and the Bank of England all started QT at different times, with just under a year between the Fed and the ECB initiating their QT programmes. Despite starting first, the Fed has not seen a drop in its reserve levels since it initiated QT; in fact, the level of reserves has even increased at some points. Instead, the Bank of England and the ECB have seen reserve levels drop steadily since they started their QT programmes.

FIGURE 5: CENTRAL BANKS DIFFERENT APPROACHES TO QUANTITATIVE TIGHTENING AND LOSS SHARING SHOW UP ON THEIR BALANCE SHEETS.

Indexed reserve levels at the Bank of England, Federal Reserve and European Central Bank, 2020-25 (100 = when each central bank started Quantitative Tightening, indicated by dotted line).



Note: Data from Bank of England (BoE), Federal Reserve (Fed), and European Central Bank (ECB).

These different outturns can be explained by their different policy approaches. For example, as any losses on QT operations carried out by the Bank of England are covered by the Treasury through the indemnity, the level of reserves has fallen smoothly. At the Federal Reserve, its losses are covered by a deferred asset, so it is not recapitalised. Its QT programme has made no active sales and is instead not reinvesting proceeds when bonds mature, reducing reserve levels. However, it has also made losses on the difference paid between the bonds it holds and the interest it pays out on reserves, increasing reserve levels. Over the past three years, the speed of QT reducing reserves has been countered by the rate at which new reserves are being created to cover interest rate losses. This means overall reserve levels have not fallen.

The ECB has also implemented a deferred asset system accounting for 'losses carried forward' on its balance sheet to be offset by future profits.[93] However, the ECB has also been able to maintain a much lower interest rate and has also tiered reserves[94] ie it has stopped paying interest on the minimum reserves that commercial banks are required to hold for regulatory purposes. This lower interest rate and tiering of reserves helps reduce the ECB's losses such that they haven't counteracted the reduction in reserves from QT.

The importance of this is that it shows how the central bank's policy choices on QE/QT, interest rates, and loss-sharing arrangements lead to different profiles of reserves. This, in turn, allows us to assess the advantages and disadvantages of different approaches. For example, once we understand there isn't just one way to do QT, we can have a debate over its current costs, how these are shared, and if there are any better alternatives.

Currently, the Bank of England has been dismissive of the idea of adapting its approach to QT, but without explicit disagreement over how the ECB or the Fed manage the same process, it is hard to see why. This is not insignificant; a paper from the National Bureau of Economic Research calculates that the Bank of England's peak losses within a year (1.5% of UK GDP) are three times greater than the Fed (0.5% of US GDP) and five times greater than the ECB (0.3% of eurozone GDP).[95] Therefore, how central bank losses are shared can have immense effects on fiscal policy. An understanding of the full set of possibilities to carry out QT, to manage losses, to set monetary policy, and their different implications on costs to fiscal authorities helps question whether it is justified that the UK pays three to five times more than other countries. Chapter 5 explores a wide range of alternative possibilities.

4. WHY DO CENTRAL BANKS AVOID LOSSES?

Economists analysing the profits of 155 central banks over 23 years found that central banks are much more likely to report a profit and, further, that they are much more likely to post a small profit than a small loss.[96] Such evidence implies central banks do try to avoid losses. Yet, central bank objectives are often to provide price and financial stability, not to ensure the central bank is profitable. This chapter investigates what justifications central banks have for being wary of losses and why they might think returning to positive equity or having governments recapitalise them is important.

4.1 POLICY INSOLVENCY

A central bank can't fail to make a payment in its own currency due to its ability to create central bank money, but situations where that money is rejected as a form of payment are plausible. Periods of currency reform and hyperinflation can help us understand this.[97] As central banks are usually given the policy objectives of maintaining price and financial stability, hyperinflation and currency rejection can be seen as policy failures of the central bank. Therefore, the idea that central bank losses may lead to these policy failures has been termed policy insolvency.[98]

It is worth briefly explaining the dynamics which could cause policy insolvency to occur. In a scenario where a central bank is making a loss, it will be issuing reserves with no corresponding increase in assets. Over time, if costs did not begin to be covered by income elsewhere, this increase in reserves would grow at the interest rate the central bank pays on reserves. If unchecked and the interest rate was positive, the reserves would grow exponentially, giving commercial banks an ever-increasing amount of reserves.[99]

By itself, a growing amount of reserves shouldn't necessarily be considered an issue. Quantitative easing (QE) showed central banks could massively and quickly expand the amount of reserves in circulation without losing control of inflation. However, this was because QE was an asset swap.[100] It didn't increase the amount of assets the financial sector held; instead, it altered the liquidity profile of those assets. The banks and financial market actors that sold bonds received reserves or bank deposits in return. While there are arguments that this helped lead to soaring asset price inflation and thus wealth inequality,[101] the effects on wider inflation were more clearly subdued.[102]

However, when reserves are being issued without obtaining assets, this argument does not apply. Instead, issuing reserves in this case will directly increase the amount of assets the private sector holds; they will receive interest payments, which have not been funded by sales of assets elsewhere. Therefore, this is a much more direct way of increasing the wealth of asset holders. As reserve levels grow, the wealth of the financial sector would also grow exponentially. Furthermore, this new wealth would be money in its most liquid form. It would be easy for the recipients of the new wealth to spend it quickly. If left unbounded, it is not hard to see that this would eventually lead to losing control of inflation.[103]

Yet, this explanation depends on reaching a point where losses start to become unbounded. This will only occur when a central bank's future income is less than its future losses. Economists have come up with ways to assess this. Essentially, we can measure the central bank's ability to absorb losses that it can cover with future profits.

First, consider all the conventional loss-absorbing capacity (CLAC) of a central bank,[104] which includes its equity or capital and also any unrealised profits on assets it could sell. This represents the amount of loss it could make before reporting negative equity with conventional balance sheet accounting. In some cases, the central bank may already be in negative equity and therefore its CLAC is likely zero.

After CLAC on its balance sheet has been used up, seigniorage income becomes central to covering losses.[105] As explained in Chapter 3, seigniorage income is the profit central banks make from being able to create central bank money. How much seigniorage a central bank can generate will depend on the demand for cash in the economy, which is a function of GDP growth (increasing volume of transactions), interest rates (increasing opportunity cost of holding cash), and inflation (increasing cash needed per transaction).

By making assumptions around growth, interest rates, and inflation, the future value of seigniorage can be calculated. After calculating expected seigniorage assuming inflation is constant, this can be added to the CLAC to measure a central bank's non-inflationary loss-absorbing capacity (NILAC)—the biggest cumulative loss it can cover without losing control of its inflation target.[106] The NILAC will increase with higher GDP growth and decrease with higher interest rates.

In 2012, economists at Citibank estimated that the European Central Bank's (ECB's) NILAC was €3.4tn, over 33% euro area GDP at the time.[107] This was calculated using self-professed conservative estimates with low growth and a high rate of interest, along with a CLAC in the eurozone of €400bn from capital and the value of currency and gold assets. An estimate for the UK in 2020 put the Bank of England's NILAC above £307bn.[108] Such estimates should illuminate just how massive the central bank's NILAC is. This analysis can also be applied to show the Federal Reserve's deferred asset presents little risk to it accumulating a large enough loss to lose control of reserve creation, as was done by a group of Fed economists.[109]

Furthermore, the way the NILAC is calculated could be considered an underestimate.[110] Implicitly, it assumes that central banks' only source of future profit is via seigniorage at a certain market interest rate. Yet, a central bank has the ability to impose fees, require commercial banks to hold reserves that pay no interest, set the interest rate on reserves themselves, and issue other liabilities at different interest rates. The former gives it income that comes from outside its balance sheet. The latter examples allow it to adjust its balance sheet to become profitable by controlling how much its liabilities cost. However, imposing fees and adjusting its balance sheet will have economic effects which could be counteractive if used without limit. For example, if the central bank started using its interest rate on reserves to target profitability, it would lose one of its tools to influence inflation.[111] Therefore, while each of these may plausibly increase the central bank's NILAC, it will still face some limitations.

With such a large capacity to make a loss, why then do central banks avoid losses?

First, depending on how a loss is made, going into a loss may itself be inflationary and therefore, this might not be in line with the central bank's mandate. For example, a loss may represent a transfer of resources to a part of the economy where demand is already saturated, adding to pressure on prices. It is important to recognise that the NILAC doesn't represent how much a central bank can spend without causing inflation. Instead, it measures how much of a loss it could make before necessarily breaking its inflation target by committing itself to creating an unlimited amount of reserves.

Second, there is uncertainty in the estimates above; while conservative assumptions still result in large estimates of the NILAC, these estimates are very sensitive to initial assumptions. For example, GDP growth that is 0.5% lower than assumed in the estimates above can wipe out approximately €800bn in NILAC for the eurozone[112] or £130bn in the UK.[113] However, these figures are more sensitive to upward shocks to growth than down. Furthermore, demand for cash in recent years has fallen off due to a rise in the use of digital transactions.[114] Without the adoption of a central bank digital currency, if this trend continues, then seigniorage revenues may continue to shrink,[115] making the NILAC smaller than assumed.

Sharing losses with treasuries or maintaining profitability helps avoid this uncertainty. In fact, a central bank whose losses are recapitalised can never become insolvent, independent of its government.[116] Therefore, covering losses as they arise means the problem of policy insolvency need not worry central banks.

Yet, when estimates of the NILAC are so large, central banks avoiding losses can look extremely conservative. The central bank's NILAC is

essentially a fiscal resource; the central bank can make a loss that will be offset by its future profits. In a world where the upfront costs of climate investment are huge and need to be implemented as soon as possible, along with many other competing pressures on governments to spend more, isn't this something we could be leaning on? As the following sections show, central banks may be reluctant to make losses even after accepting their ability to do so.

4.2 THE SPECTRE OF MARKET EXPECTATIONS

Calculating the NILAC can be uncertain, but this uncertainty is compounded by the fact that market reactions can often change rapidly based on expectations. For example, the idea of a self-fulfilling crisis is well studied in economics.[117,118] If markets begin to expect a crisis, then a crisis may come to fruition. Therefore, not only do central banks making losses have to understand their NILAC, they also have to beware of market tipping points that could start to make a crisis unavoidable, which may occur before the NILAC has been reached.

For example, it is not just the threat of hyperinflation that may cause issues for the central bank. A rejection of the currency has essentially the same effects,[119] and there are plentiful examples of countries where consumers have started to use other currencies due to a lack of trust in the central bank maintaining the local currency's value. Such a practice is common enough that economists have described the process as dollarisation[120] when transactions move into foreign currencies. Other economists have even begun to speculate about cryptoisation[121] when transactions shift to digital currencies instead.

If one assumes that market actors would begin to reject a currency if they believed the NILAC would be violated, then it doesn't necessarily matter if a central bank isn't currently violating the NILAC, just that the market expects it to be violated. One could imagine a situation where a central bank has positive equity but announces a large scheme of monetary-financed spending, which would soon imply a loss position that would violate the NILAC. If market actors believed this spending would lead to hyperinflation, they may seek to exchange their currency, creating a self-fulfilling crisis as the currency would continue to lose value.

To avoid such crises, it is up to the central bank to communicate that its losses pose no risks to meeting its policy mandates. In fact, as the ECB and the Fed have adopted deferred asset accounting, this has been part of their communication. The Fed reports "negative net income, and the corresponding creation of a deferred asset, do not affect the Federal Reserve's ability to conduct monetary policy or meet its financial obligations."[122] The ECB states, "In any case, the ECB can operate effectively and fulfil its primary mandate of maintaining price stability regardless of any losses."[123] These statements seemingly help calm potential market reactions.

Interestingly, some speculate that central banks may avoid losses as such positions may confuse markets, which may react badly due to misunderstanding,[124] thus reducing the central bank's perceived credibility even when losses do not actually pose a direct risk to monetary stability. However, such a problem is somewhat self-imposed by central banks, like the Bank of England, that communicate misleading positions on their ability to make a loss, like how the Bank's website suggests it "needs" capital to absorb losses.[125] Therefore, communications like the Fed's and the ECB's about their deferred assets, along with more honest statements about central bank balance sheets from other central banks, should help stop market confusion.

In some scenarios, to quell market concerns, recapitalisation agreements may ultimately still be needed. However, recapitalisation agreements need not always return central banks to positive equity. Instead, a central bank could be recapitalised to a level of negative equity that remains within its NILAC. This would cement market expectations while also reducing how much governments have to recapitalise their central banks by providing better value for money. As detailed in Chapter 1, how we define central bank liabilities is rather arbitrary and contested, yet this defines whether the central bank is in positive equity or not. Therefore, under radical changes to central bank accounting, eg where its NILAC was seen as an asset, then such positions may not necessarily be seen as negative equity anyway.

Overall, market expectations pose a real risk to central banks with many historical examples to draw from.[126] Yet, importantly, expectations of crisis can be quelled with more transparent communications and recapitalisation agreements, which don't necessarily have to return a central bank to positive equity as it is currently accounted.

4.3 QUASI-FISCAL POLICY

When a central bank records a loss, someone else in the private sector records an equal gain. Selling bonds for less than the purchase price or paying more interest on bank reserves than it earns on its assets, amounts to putting public money into the economy. That is a fiscal-type transfer, even though it happens on the central bank's balance sheet, which some refer to as quasi-fiscal policy.[127]

In a world of independent central banks, the job of allocating government resources is the fiscal authority's. Central banks are meant to influence aggregate demand by setting interest rates and giving loans, not by spending government resources. Therefore, as a principle, one might be opposed to an independent central bank making losses, as such decisions should require more democratic scrutiny.

In practice, opposition has been applied selectively.[128] Reluctance to engage in quasi-fiscal policy is often cited against introducing unconventional policy measures that would immediately or certainly make losses, like lending operations that offered rates below bank rate[129] or outright transfers to people[130] (ie helicopter money or people's QE). In contrast, policies which cost uncertain amounts and can vary in the future (eg QE) often slip through unopposed; at the time they are launched, the losses are only potential, not guaranteed.

It should be questioned how fundamentally different the redistributive implications of quasi-fiscal policy are from the redistributive implications of normal monetary policy. In truth, all monetary operations reshape who gets access to money and on what terms, so all decisions—whether seen as monetary or quasi-fiscal—have distributional effects. Therefore, it is argued that aversion to losses is a form of political self-limitation. In a context of increasingly unconventional monetary policy, central banks "do not want to be perceived as unlimited".[131] In this case, getting losses covered by treasuries and maintaining positive equity means loss-making policies are ultimately covered by fiscal authorities. By doing this, central banks protect themselves from treasuries leaning on them to fund policies.

How monetary-fiscal coordination can help such tools be used more transparently is discussed in Chapter 5. Under more proactive coordination, a central bank may feel empowered to make a loss through political permission, rather than fiscal backing. Equally, if it foresees that the cost of a loss-making policy will eventually be shared with the treasury, then how such costs are shared should also be a point of discussion. Overall, it allows more deliberation about the best ways for a government to ultimately fund a policy, whether from the central bank or the government: through taxation, borrowing, or the central bank creating money.

4.4 CENTRAL BANK INDEPENDENCE

Lastly, in a similar vein to why central banks might want to avoid quasi-fiscal policy decisions, they may want to avoid losses to protect their independence. If loss-making eventually makes a central bank require recapitalisation from its finance ministry, it can be hard to see this relationship as fully independent. Furthermore, if there is a particularly antagonistic relationship between the central bank and a fiscal authority, then such bailouts may come with conditions such as lowering interest rates.[132,133].This would get in the way of the central bank's power to independently set its policy tools.

Moreover, large central bank losses may simply be politically unpopular and encourage people to question the central bank's operations and where these losses are going. Indeed, in the UK, many commentators,[134,135] including NEF,[136] have drawn attention to the Bank of England's large losses and how this is effectively a £150bn transfer to the banking sector.[137] Here, losses can create sources of public debate which ultimately amount to challenges to the central bank's authority. Such challenges require central banks to be careful in communicating what is possible. If they are dismissive of options that are in use by other

central banks without a good explanation, then such political challenges are easier to make.

Furthermore, by quelling realistic debate, central banks leave the door open to more radical political demands. In the UK, we see this in the form of more performative proposals, like Reform UK's manifesto commitment to abolish all interest on reserves.[138] Such a proposal would interfere with the central bank's ability to set interest rates, but there are more credible options to save money, as discussed in the next chapter. A healthy democracy requires electorates to know what is politically and economically possible, and therefore, obfuscation from central banks over policy choices can be unhelpful.

Central banks that see their independence under threat may want to reduce losses to stop these from becoming a political target. This could well explain why central banks may try to avoid losses ex ante, especially in contexts where they are more worried about the future of their independence. The UK's experience may imply the Bank of England is not concerned about such a possibility. Current challenges to the Federal Reserve in the USA, however, make that seem less of a faraway possibility.[139]

5. BETTER VALUE FOR (PRINTING) MONEY?

In the previous chapter, both the economic and political constraints on central bank losses were found to be less pronounced than conventional accounting frameworks may imply. Economically, a central bank can sustain losses so long as this does not conflict with its ability to respond to keep inflation low (or at least so long as markets agree that it won't). Politically, a central bank can make losses if it believes it is not overstepping its purpose and not jeopardising its independence. Therefore, with these more realistic (albeit fuzzy) constraints in mind, it encourages multiple questions. How should central banks make losses, if at all? How should these losses be shared with treasuries? How can these decisions be made under a paradigm of independent central banks? This chapter explores the different policy options central banks have to manage losses while also arguing for better coordination to ensure the source and burden of losses have better democratic scrutiny.

5.1 REDUCING THE OPERATIONAL COSTS OF MONETARY POLICY

5.1.1 Lower interest rates

When interest is paid on reserves, lowering rates will reduce costs for the central bank immediately. However, if a central bank is using its interest rate to influence inflation, then it could go against its price stability objective to reduce the interest rate for the sole purpose of avoiding a loss. Instead, it is fruitful to think of monetary policy frameworks that allow lower interest rates to tackle inflation. For example, CETEX has proposed an adaptive inflation targeting regime[140] that would allow central banks to better "see through" inflation caused by supply-side issues. This would allow central banks to make softer interest rate hikes, while getting inflation down to 2% (for example) would be seen as a long-term rather than an immediate goal.

Furthermore, better monetary-fiscal coordination could relieve pressure on central banks being the sole responders to inflation.[141] Fiscal approaches to inflation, like price controls, supply-chain interventions, and investments into long-term price stability, such as through increasing domestic renewable energy production and anti-trust enforcement, can allow the central bank to credibly pursue lower interest rates, too.

5.1.2 Tier reserves

However, lowering interest rates isn't the only way to reduce costs. How interest is paid on reserves can also be altered. Tiering reserves, as NEF has advocated since 2022,[142] would require banks to hold a base level of reserves that bear no interest, with interest only being paid on reserves above this. Tiered reserve systems are implemented by the European Central Bank (ECB)[143] and the Swiss National Bank[144] with reserve requirements of 1% and 4%, respectively. NEF has previously calculated that implementing such reserve requirements in the UK would save £1.3bn and £5.3bn per year, respectively.[145,e]

Some argue that the cost to banks of tiering reserves would be passed on to consumers by reducing deposit rates and increasing borrowing costs.[146] While this does imply monetary loosening in one direction (lower interest rates for savers) and tightening in the other direction (higher interest rates for borrowers), it is generally assumed that this would have a tightening effect overall.[147]

Yet, this impact can be thought of as a feature, not a bug. Given that central bank losses pose more of a problem when monetary policy is tight (as costs are likely heightened because of higher interest rates), increasing reserve requirements can tighten monetary policy while reducing losses. In fact, empirical evidence from the eurozone shows that reserve-rich banks have been less likely to pass on interest rates to their customers.[148] Furthermore, they are less likely to respond as expected to central bank decisions than comparatively reserve-poor banks. This weakening of the transmission mechanism is seemingly directly the result of

e SNB calculation adjusted for higher reserve requirements.

central bank reserve payments allowing banks to make windfall profits, which dampen their incentive to respond to underlying conditions. Therefore, tiering reserves would help reduce the windfall profits commercial banks receive from high interest rates on reserves while strengthening the transmission of monetary policy.[149]

This points to ways that could reduce losses regardless of the size of the central bank's balance sheet. However, losses can also be reduced by making sure the balance sheet only expands in targeted ways, mitigating the total risk the central bank assumes.

5.1.3 Target losses

For example, compare a conventional quantitative easing (QE) operation to a 'strategic' or 'green' QE.[150] Under strategic or green QE, the central bank would target industries it had identified as in need of liquidity or focus for its purchases of private company bonds. Under conventional QE, the central bank simply announces a numerical target of asset purchases and purchases from those who offer the cheapest price; essentially, it does not control who receives liquidity. With strategic/green QE, the central bank may be able to stimulate the same amount of economic activity or get the same pass-through of lower interest rates for a smaller amount of purchases, thanks to having targeted strategic areas. For example, by easing conditions in green industries, which are more nascent, the central bank may be able to kickstart production in a way that increases output much faster than easing conditions in an untargeted way would. As long as the company bonds were sufficiently low in default risk, the losses incurred by the Bank would be lower.

Overall, central banks have multiple options to reduce losses when they occur and to pursue policies that come with lower expected losses overall. However, better monetary-fiscal coordination may be essential to achieving this, as it can allow for the central bank to credibly lower interest rates, along with adopting more targeted and unconventional policy positions.

5.2 REDISTRIBUTING THE SOURCES OF LOSSES

In 2024, the Fed made a loss of $77bn,[151] mainly caused by the interest it paid on reserves. As it is hard to argue that the Fed has completely lost control of inflation, the impetus to reduce these costs is not the most important consideration. Instead, one could ask, how could the Fed make the same loss but with better economic outcomes?

As discussed already, the first steps could be to adapt the inflation targeting framework to allow for lower interest rates, and to implement tiered reserves to reduce needless outward interest payments. Having made this saving, one could then look to loss-making policies that would leave the Fed in the same final loss position it has already judged to be acceptable. One possibility for a loss-making policy is the idea of a green refinancing operation or green term funding scheme (TFS).[152]

NEF has argued that central banks should offer loans to finance green investment at discounted rates. If loan rates are below the bank rate, such operations would lead to a central bank loss. The reserves issued would pay the bank rate, but loan repayments would be below this. The green TFS would be justified to help accelerate the green transition and reduce the impact of rate hikes in suffocating investment in green industries.[153] This can be especially helpful as green investment can be counter-inflationary or even disinflationary in the long run, reducing the price of energy and helping to avoid climate-related and fossil fuel price shocks.[154] Therefore, without changing the losses the Fed is currently making, it could help fund green investment while also maintaining a similar policy stance on inflation, leading to a better economic outcome.

Another option for reducing losses while simultaneously achieving targeted policy outcomes would be for a central bank to set unremunerated reserve requirements for particular types of lending.[155,156] For example, if a central bank put reserve requirements on lending to fossil fuel companies, it would discourage bank lending to the fossil fuel sector. Such a policy would reduce the costs of the central bank's operations, as some reserves would go unremunerated, while guiding

credit in line with government goals. This example is important as it shows how the central bank can leverage its balance sheet to direct credit, without necessarily incurring any cost.

The understanding that central banks can maintain higher levels of negative equity opens up possibilities for central banks to expand their loss-making policies further. The composition of central bank balance sheets is the result of policy choices, not fundamental laws about how central banks should be composed. Questioning the assets, liabilities, equity, profits, and losses of a central bank should be encouraged, as it allows policymakers to make fully informed choices.

5.3 RETHINKING CENTRAL BANK PROFIT AND LOSS SHARING

Central bank policy choices will result in profits or losses, so it is worthwhile discussing how these should be shared, if at all, with treasuries.

For example, one can imagine a scenario in which the Treasury changes its memorandum of understanding to only recapitalise the Bank of England such that its negative equity does not fall below £100bn. So long as this negative equity target was considered not to conflict with its inflation mandate, then such a position could be maintained. Importantly, this would save the Treasury £100bn in losses it did not have to cover over the time they are made – such sums are clearly not insignificant, representing almost the entire Department for Education budget. Therefore, better aligning loss-sharing mechanisms with actual economic constraints has the potential to save a lot of money for fiscal authorities.

The key difference with the current system would be that the negative equity target would give the central bank a licence to implement loss-making policies that are aligned with government goals. One could imagine a central bank maxing out its negative equity baseline by making a monetary-financed transfer to the government treasury. This is unlikely, however, as if central banks are willing to make losses, they would likely want control over how these losses are spent. For instance, a policy that spends £100bn by giving every citizen a stimulus payment is presumably more inflationary than a policy that spends £100bn providing public services and investment. In the latter, public investment may be used to directly get prices down, like on water or energy bills. In the former, demand is stimulated in a way that will likely lead to higher pressure on prices.

Additionally, the Bank of England's approach, where different sections of its balance sheet have different rules, might be quite sensible. But it could go further. For example, retaining profits from foreign currency assets seems sensible given that foreign currency liabilities usually can't be paid for in the domestic currency and issuing domestic currency to exchange will often affect its value when done at scale[157] or simply be refused.[158] Therefore, foreign currency profits could be maintained to manage the risk associated with the foreign currency liabilities the central bank holds. Considering the disparate risks associated with the different aspects of its balance sheet, any profits could at first be retained by the central bank to decide if it is worth expanding or protecting against a loss-making policy or other risk on its balance sheet. Yet, if the bank sees no need to make a loss-making policy, then such profits are probably best passed onto the Treasury, given its democratic mandate.

Overall, there are many ways central banks can share their profits and losses. The optimum way to do this will depend on what the central bank's policy stance is, and whether it seeks to retain profits or take on loss-making policies. How much the government is aligned with achieving central bank goals, such as price and financial stability, is also important, especially if the central bank is to consider making a loss on the government's behalf. While there is good reason to not completely remove the possibility of treasuries providing transfers to central banks (or central banks providing profits to treasuries, for that matter), how this relationship works can be fundamentally changed in a way that opens up space for many different sorts of policies.

6. POLICY RECOMMENDATIONS

As explored in this report, negative equity on a central bank's balance sheet does not necessarily impede its ability to meet its primary obligations on inflation and financial stability. Furthermore, the losses that lead to this negative equity shape economic outcomes. Ensuring central bank losses result in better outcomes is dependent on policy choices. NEF recommends the following for the Bank of England and other central banks to ensure these better outcomes arrive.

6.1 THE BANK OF ENGLAND SHOULD ABSORB ITS OWN LOSSES FROM QE

The Office for Budget Responsibility (OBR) reports the Treasury sent the Bank of England £44.5bn in 2023-24 and expects around £20bn a year to be paid until 2033.[159] Yet, as detailed in Chapter 3, the indemnity agreement with the Treasury is not necessary and is certainly not practised widely internationally. The problem with the Treasury being responsible for these costs is that it directly increases borrowing and debt levels and therefore affects how the Chancellor meets her fiscal rules. So far, struggles to meet fiscal rules have led to Labour making cuts to welfare,[160] and now they are rumoured to be looking at a wide range of tax options to fill their fiscal "gap".[161] While fiscal rule changes seem off the table due to Labour's insistence that the rules are "iron-clad",[162] another way to open a large amount of space would be to scrap the indemnity agreement.

Scrapping the indemnity would stop Treasury payments to the Bank of England. However, this would leave unbacked reserves on the Bank's balance sheet, which would grow at the interest rate on reserves, exacerbating losses and pushing the Bank into negative equity. To ground expectations, the Bank of England (assuming it absorbed the APF onto its balance sheet) would not let reserves grow indefinitely, but it could update its memorandum of understanding with the Treasury to recapitalise it to a negative level of equity. This would allow the Bank to go into negative equity without immediately costing the Treasury. Furthermore, while in negative equity, the central bank could make decisions to limit reserve growth, eg by tiering reserves, to stabilise its position. In this case, it may be hard for the central bank to exit negative equity without a recapitalisation, but this shouldn't matter as long as it was meeting its mandates on price and financial stability.

Another option would be for the Bank of England to adopt a deferred asset or losses carried forward approach on their balance sheet, as used by the Federal Reserve and European Central Bank respectively. This would also put the Bank into negative equity but would allow it to retain income when it became profitable again such that it eventually returns to positive equity. The Bank of England is required to pass on all seigniorage (via profits at the Issue Department) to the Treasury by law[163], meaning how much income it could retain is very limited. Changing this would require a small update to the 1844 Bank Charter Act, but analysts at Barclays concluded in a proposal for the Bank adopting a deferred asset approach, "it would be a relatively simple piece of legislative change"[164].

Losing the revenues from seigniorage (around £4bn per year[165]) means that the net saving from adopting such an approach would be £16bn per year. However, once losses ceased, the Treasury would actually be losing out on seigniorage revenues it would have otherwise received. One could imagine a combination of the two above proposals, where a deferred asset stopped needing to be paid down at a negative level of equity. In this case, there would be a real saving to the Treasury of the equity it never paid out. Really, as both recommendations are intra-government transfers, these proposals should be seen as accounting tricks – it simply converts losses from being funded by taxes/borrowing to being funded by reserve creation. Yet, as it is something that would immediately relieve pressure on the fiscal rules painlessly it should be strongly considered by the Chancellor. While the Treasury sends billions to the Bank of England, cuts to the wider public sector, especially those targeted at the most vulnerable[166], should be unconscionable – allowing the Bank to absorb its own losses would stop this.

6.2 CENTRAL BANKS SHOULD BE MORE OPEN ABOUT THEIR POLICY SPACE

As discussed in Chapter 4, the non-inflationary loss-absorbing capacity (NILAC) of the central bank represents the biggest cumulative loss it can cover without committing itself to an exploding number of reserves and thus losing control of inflation. In other words, it is the amount of a loss a central bank can make without needing explicit recapitalisation from the government. In this sense, the NILAC can be seen as a measure of how much 'policy space' the central bank has to make interventions that cost money, ie cause losses, without government support. However, as reported in the introduction , central banks tend to report financial statements using conventional accounting techniques that obscure this extra policy space.

NEF recommends that central banks take measures to report their NILAC. Not only could this help ground market expectations in the event a central bank does go into negative equity, but it would also act as a signal for how much space there is for central bank policy to take on losses. This could help facilitate more realistic demands from the government and general public on the central bank to engage in loss-making policy, recognising limits while not precluding their use. While estimates of the NILAC are uncertain, given the reliance on estimating future seigniorage, central banks could present the NILAC as a range and recommend safe levels of losses to make based on this.

6.3 CENTRAL BANKS SHOULD INCUR LOSSES FOR POLICIES ALIGNED WITH THEIR MANDATES

If a central bank assessed it could take on a larger loss without conflicting its inflation mandate, then it could engage in other loss-making policies, on its own accord or at the direction of the government, even while already in negative equity. This could be particularly effective at strengthening central bank policy tools aligned with its mandate. For example, if central banks follow the European Central Bank's (ECB's) lead in greening the collateral framework,[167] this could be made more effective by allowing for negative haircuts[168] - intensifying the preference for green assets - which would cause losses in the case of default. Additionally, central banks following the lead of Japan and China could offer even more significant discounts on refinancing operations for green lending.[169]

Furthermore, if aligned properly with the central bank's mandate on inflation, government policies funded via the central bank going into a loss, ie monetary financing, could even be considered. An example of where this might have been sensible is in the Covid-19 pandemic; the central bank could have directly monetary financed emergency spending rather than effectively do it second-hand through quantitative easing (QE).[170] This would have avoided bonds having to be exchanged on secondary markets, where dealers made profits from buying from the government and selling on to the Bank of England. While these profits were in the small billions (one paper estimates it at 0.5% of QE's total value[171]), this is a direct giveaway to the financial sector and a waste compared to if done directly.

6.4 CENTRAL BANKS SHOULD AVOID LOSSES FOR POLICIES NOT ALIGNED WITH THEIR MANDATES

As explored in the previous chapter, different monetary policy positions, eg adaptive inflation targeting, tiered reserves, and targeting losses, can lower the cost of monetary policy while still allowing central banks to appropriately respond to inflation. Therefore, if losses can be reduced via slight changes to a central bank's policies that still allow it to achieve its mandate, it should be questioned why the losses are made in the first place. This is a question about the efficient use of public money. The fact that the ECB and the Swiss National Bank operate tiered reserve policies without noticeable impacts on their ability to set interest rates or weakening their response to inflation should be an impetus for other central banks to save on losses in the same way.

Furthermore, sometimes reducing losses may be justified due to their alignment with government policy. For example, tiered reserves might not just be a way to save money while still meeting the central bank's primary mandate – they could be justified to reduce payments to the banking sector. A government which had objectives to

reduce inequality may be interested in stopping payments to a sector where vast wealth is concentrated. Equally, reserve requirements could be designed such that a commercial bank is required to hold reserves that pay no interest in proportion to how much lending they do to the fossil fuel industry. This would incentivise banks to reduce their lending to fossil fuel companies and increase lending elsewhere in the economy. Assuming some fossil fuel company lending would remain, this would reduce the interest paid on reserves, while also redirecting lending in line with a government objective to support the green transition.

6.5 MONETARY-FISCAL COORDINATION SHOULD ENHANCE DEMOCRATIC ENGAGEMENT WITH LOSSES

The fact that the Bank of England is expected to make cumulative losses of £150bn and that this has evaded mainstream political scrutiny shows the spectacular privilege beholden by central banks. Central bank losses have showcased how monetary dominance - where central bank policy constrains fiscal policy choices - happens through two channels. First, high interest rates set by the Bank of England make it harder for the government to justify borrowing for policies without large economic returns. Second, the central bank itself can be a fiscal drain, which is especially toxic when fiscal rules are binding and used as justification for austerity. However, the solution to monetary dominance isn't fiscal dominance - government policy constraining monetary policy choices - it is monetary-fiscal coordination.

NEF has previously recommended an Economic Coordination Council (ECC) to coordinate fiscal and monetary policy composed of representatives from a range of fiscal, monetary, and banking experts (but not from the central bank, government, or other policymaking institutions), along with other relevant experts, such as from climate science or trade bodies.[172] This makeup is to ensure a diversity of thought is represented. The ECC would be required to make recommendations on how fiscal and monetary policy could be better coordinated in line with defined central bank mandates and government objectives. As an independent committee, these recommendations wouldn't be binding, but the government and the central bank would be required to respond to why they did not adopt a recommendation. This would make decisions to coordinate (or not) more transparent and also make both the central bank and the government more accountable.

Ultimately, better coordination would provide democratic (il)legitimacy to a central bank engaging in loss-making policy. The ECC could recommend where losses may be worth making and where they could be reduced. The central bank could ignore this, but in doing so, it would be going against the advice of how to better democratically align itself. However, the ECC wouldn't just scrutinise the central bank but the government too. When its policies are not aligned with the central bank's mandates, this would be pointed out too. In turn, one might expect the central bank would be more willing to engage in democratically aligned proposals the more the government took a proactive approach to supporting the central bank's mandates of price and financial stability.

Under monetary-fiscal coordination, the limits politicians put on spending become much more obviously self-imposed when the central bank can fund policy by going into a loss, ie simply by creating the money. This encourages conversations that focus on real constraints like the central bank's NILAC, the ability of the Treasury to recapitalise it, and real resource availability (ie how much labour can be employed, how much capital is available to use). By allowing central banks to ultimately fund some government policies, what the electorate sees as economically possible can be expanded, encouraging better democratic engagement with economic policy.

CONCLUSION

Overall, better monetary fiscal coordination can expand the horizon on what is seen as achievable economically. The central bank's power to create money blurs self-imposed spending limits.[173] As we have seen, the Bank of England could instantly save the Treasury up to £20bn a year, sharpen its collateral framework, and discount lending with a more open approach to negative equity and losses. Equally, there may be some places where losses can be reduced without harming (or even while improving) the central bank's ability to meet its mandates of price and financial stability and supporting government objectives.

Better coordination can also steer conversations around proposed policies that focus on real constraints like the limited resources in the economy, rather than false constraints like fiscal rules.[174] How we use these resources is an inherently political question that democracy should guide. But democracy is most effective when the electorate understands all available options. Understanding the power that can be unlocked with an active approach to using central bank balance sheets must be part of this.

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