The self-financing state: an institutional analysis of government expenditure, revenue collection and debt issuance operations in the United Kingdom

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Abstract

This paper provides the first detailed institutional analysis of the UK Government's expenditure, revenue collection and debt issuance processes. We show that public expenditure is always financed through money creation rather than taxation or debt issuance. Spending involves the government drawing on a sovereign line of credit from a core legal and accounting structure known as the Consolidated Fund. The Bank of England then debits the Consolidated Fund's account at the Bank and credits other government accounts held at the Bank; a practice mandated in law. This creates new public deposits which are used to settle spending by government departments into the economy via the commercial banking sector. Only the UK parliament can mandate expenditures from the Consolidated Fund. Revenue collection, including taxation, involves the reverse process, crediting the Consolidated Fund's account at the Bank, thereby offsetting past injections. Similarly, gilts have been issued to temporarily withdraw money to assist in achieving the monetary policy interest rate target. Under the current conditions of excess reserve liquidity, however, the function of debt issuance is best understood as a way of providing safe assets and a reliable source of collateral to the non-bank private sector. The findings support neo-Chartalist accounts of the workings of sovereign currency-issuing nations and provide additional institutional detail regarding the apex of the monetary hierarchy in the UK case.

1. Introduction

The Great Financial Crisis, COVID-19 pandemic and recent period of high inflation have led to growing interest in the limits to state spending. Yet the actual mechanics of government expenditure, debt management and its relation to the wider monetary and financial system remain areas of contestation with relatively few scholarly analyses on countries other than the USA.

In this paper we undertake the first detailed institutional analysis of the UK Government's expenditure, revenue collection and debt issuance processes.[1] The UK Exchequer (the legal and accounting entities which support the UK's spending and revenue activities) is one of the oldest surviving institutions of its type in the world, with the key legislation being formed in the mid-19th century. It therefore merits attention for its resilience and the relative economic success it has bequeathed the country over the past 150 years, as well as the fact that the UK remains one of the world's major high- income economies.

Our analysis is based on an extensive review of current and historical primary legislation, additional pertinent literature describing the historical evolution of the system, official publications from public authorities including His Majesty's Treasury (HM Treasury – the UK Finance Ministry), the Debt Management Office (DMO), His Majesty's Revenue & Customs (HMRC), the Bank of England (the Bank – the UK's central bank) and other relevant institutions, and requests made to the above-mentioned departments under the Freedom of Information Act 2000 (Berkeley et al 2021).[2]

In contrast to previous accounts of the UK government's expenditure process (Hills and Fellowes 1932; Ryan-Collins et al. 2012; Pantelopoulos and Watts 2021), we pay particular attention to the role of the Consolidated Fund as the core legal and accounting construction which is the focal point of all expenditure and revenue activity. The Consolidated Fund, we find, advances HM Treasury sovereign credit, backed by Parliament's power to raise future tax revenues. Government 'spending' should then be understood as a form of money creation. This contrasts with the predominant belief that government spending is financed through taxation or borrowing from the private sector or via central bank-initiated money creation. Furthermore, we show that it is the UK Parliament rather than the central bank or HM Treasury that governs the Consolidated Fund and thus authorises spending, with the Bank of England automatically crediting commercial bank accounts when spending takes place.

[1] The UK system was described in several publications through the early- and mid-20th century (Philippovich, 1911; Higgs, 1914; Young, 1915; Brittain, 1959; Bank of England, 1963, 1964, 1966, 1982; Ulph, 1985) but no detailed synthesis has appeared since, despite significant institutional changes. These include reform of the gilt market, Bank of England independence, the establishment of the Debt Management Office and Government Banking Service and monetary policy evolution in the form of interest rate targeting and the payment of interest on central bank reserves.

[2] Although many of the Freedom of Information requests were successful, some were refused under various exemptions within the legislation. Among the authorities contacted, including the Bank of England, the Debt Management Office and HMRC, HM Treasury was the greatest user of exemptions. Full correspondence is available on request.

The account presented broadly aligns with descriptions of Federal spending in the USA outlined by scholars in the neo-Chartalist or Modern Monetary Theory (MMT) tradition (Bell 2000; Fullwiler 2017; Tymoigne 2014). However, we provide important additional institutional detail regarding the apex of the 'monetary hierarchy' (Bell 2001) in the UK case. Furthermore, while the neo-Chartalist literature emphasises the role of debt management in achieving the central banks' targeted short-term interest rate (Bell 2000; Tymoigne 2014), we find that the main purpose of public debt instruments in the UK today is to support the non-bank private sector's desire for a secure store of value and source of collateral, in particular in repo markets. Public debt issuance is no longer a key instrument for controlling the short-term interest rate since the introduction of interest on central bank reserves in 2006 and particularly after excess liquidity was created in the commercial banking system by the programme of quantitative easing (QE) initiated in 2009.[3]

Given this, HM Treasury's current debt management regime of 'fully funding' public expenditures, via either raising taxes or borrowing, appears anachronistic and at odds with the functional purpose of private sector bond purchases. This applies particularly given that QE has involved removing government bonds from the balance sheets of the private sector on a large scale, thereby offsetting the debt issuance required under the 'full funding rule'.

Our analysis suggests that two of the main purported constraints on government spending are not valid, namely: liquidity risk (the ability to repay debt and prevent default) and market risk (the ability to control the interest rate). Regarding debates about central bank independence, we find that HM Treasury's power to spend independently of the Bank of England's monetary policy position is much less constrained than is commonly thought, given the central role of the Consolidated Fund and the importance of government securities (including indemnities and guarantees) within the monetary and financial system. This undermines, in the UK case at least, critiques of neo-Chartalism and Modern Monetary Theory which argue that the central bank and treasury should not be consolidated for analytical purposes on the grounds of the operational independence often granted to central banks (Lavoie 2013; Palley 2015).

The remainder of this paper is structured as follows. Section 2 examines related literature on the theory and institutional mechanics of government expenditure, revenue collection and debt management in the UK and other countries. Section 3 constitutes the detailed case study of the UK Government's expenditure and revenue collection process, and Section 4 focusses on the mechanics and modern purpose of public debt issuance. Section 5 discusses our findings concerning the constraints on government expenditure and central bank independence. Section 6 concludes with reflections on policy implications.

[3] For a discussion of the UK's Quantitative Easing design, operation and impact see (Joyce et al., 2011)

2. The mechanics of state financing: neo-Chartalist and post-Keynesian perspectives

The most detailed accounts of the mechanics of state financing have come from neo-Chartalist and Modern Monetary Theory scholars in an effort to illustrate the key role of the state in defining and issuing state money (see, *inter alia*, Bell 2000; Tymoigne 2014; Fullwiler 2020). In this view, taxes drive demand for the currency rather than raising funds for the state to spend, and currency is a public monopoly designed to extract real resources and services to advance the central authority's public purposes (Knapp, [1924] 2013; Keynes 1930; Wray 1998; Bell 2000).

Since the state is the monopoly issuer of the country's currency, the means to pay taxes and purchase bonds must either be spent or lent into existence by the government before taxes can be paid or bonds purchased (Wray 1998). Furthermore, bonds are not issued by governments to obtain the funds needed for spending, but to influence private credit conditions via interest rates (Lerner 1943; Wray 1998). While the private sector ends up holding public bonds as a consequence of fiscal deficits, it does not provide governments with the means of payment. Bond issuance, in this account, is instead a monetary policy tool that assists the central bank's liquidity management to implement its monetary policy interest rate target (Bell 2000; Tymoigne 2016; Fullwiler 2020). This distinction can, in the Circuitist approach, be framed as 'initial finance' vs. 'final finance' or 'financing' vs. 'funding' (Tymoigne 2014, 643; Cesarotto 2016).

In modern monetary systems, central banks usually provide two standing facilities that they use to influence the interest rate environment: a lending rate above their target policy interest rate and a deposit rate below their target rate. As explained by the Bank of England (2015, 5), 'Participants will typically be unwilling to deal in the market on worse terms than those available at the Bank. So the [lending and deposit] rates act as a ceiling and a floor, forming an interest rate corridor for the rates at which … participants should be willing to deal in the market'. When the government spends or central banks buy bonds by issuing reserves, commercial banks experience a rise in their reserve balances which lowers the interest rate in the interbank market; selling bonds has the opposite effect, draining such liquidity.

Neo-Chartalists advocate the consolidation of the balance sheets of the central bank and the rest of the government as a 'theoretical simplification that makes sense once one understands the logic of the interrelations between the central bank and the Treasury, and between the government and non-government' (Tymoigne and Wray 2015, 29). Consolidation implies that the government's account at the central bank and the central bank's holding of government securities cancel against one another, and this renders the

central bank reserves and government securities held by the private sector as simply alternative monetary instruments issued by a single central authority.[4]

Some post-Keynesian economists have criticised the consolidated government balance sheet view for not being descriptively realistic given the operational independence commonly granted to monetary policy authorities by governments from the late 1980s and 1990s, including prohibitions on direct monetary financing (Fiebiger 2012; Lavoie 2013; Palley 2015). Palley (2015, 4-5) states that the consolidation hypothesis is dependent on the willingness of the central bank 'to provide the government with the initial money balances to finance its spending.' Therefore, it is argued that governments can 'in principle, finance spending by printing money' but this 'requires a particular institutional arrangement between the fiscal authority and the central bank' (ibid). As such, the consolidation hypothesis is viewed as a normative prescription rather than an institutionally valid proposition; a prescription Palley does not share as independent central banks 'must sometimes… take away the punchbowl in the middle of the party' (ibid).[5]

Several neo-Chartalist scholars have examined how monetary institutions have found ways to bypass self-imposed constraints on central bank financing of government spending. Tymoigne (2014, 652-656) documents how the US Department of the Treasury issues bonds to selected private financial institutions, the 'primary dealers', which are obligated to place bids in all bond auctions at a reasonable price. Meanwhile, the central bank stands ready to either lend to the primary dealers or supply more funds to the interbank market to offset the draining effects of bond sales. If the central bank does not participate in this way, it would create significant disruptions in the money markets and prevent federal authorities from acting in accordance with the budgets passed by Congress (Tymoigne 2016, 1323-24).

In Canada, the central bank likewise maintains a corridor interest rate system and stands ready to 'neutralize the net impact of any public sector flows' and finance the primary dealers in government bond auctions. On days with large anticipated monetary drains (e.g. from tax payments or bond sales), 'The Bank will be providing central bank credit from the outset so as to maintain liquidity' (Lavoie 2019, 152-153). In one study of the Danish monetary system, the central bank governor supported the consolidated government view by stating, 'We are the agent of the state. In this way, one can also consolidate the state's balance and our balance' (Voldsgaard Ruge 2018, 61). Similar conclusions have been found in South East Asian economies during the Covid-19 pandemic where the central banks smoothed market liquidity conditions for bond issuance and provided direct finance to the treasury via credit advances (Felipe and Fuillwiler 2021). In another study of the actions taken by the People's Bank of China, He and Jia (2020, 854) similarly find that the 'The PBOC [Chinese central bank] creates a financial situation in which the Treasury bond auction is easily successful by keeping the financial market stable and supplied with enough reserves,

[4] From section 3 onwards, the use of the term 'Government' within this paper refers to this consolidated view. The UK fiscal authority is HM Treasury and the monetary authority is the Bank of England and we refer to these separately when describing the institutional detail. The Bank of England is a wholly owned subsidiary of HM Treasury and subject to its direction and control under the Bank of England Acts.

[5] See also Tymoigne and Wray (2015) and Cesarotto (2016) for further details on this debate.

[therefore] it is hard for commercial banks to refuse the Treasury bonds—which are not only profitable but also highly liquid'.

In the UK context, Pantelopoulos and Watts (2021) argue that the Bank of England and the HM Treasury can 'finesse' around the full funding rule (discussed in more depth in Section 4), which requires all fiscal deficits to be matched by bond sales over the year, by using HM Treasury's Ways and Means overdraft account at the Bank. They therefore view the full funding rule as a voluntary constraint that can be bypassed if needed and note occasions when it has been used over the course of the 20th century, including wartime. While the Ways and Means account is available in the background, the full funding rule is intended to subject HM Treasury and its Debt Management Office to fiscal discipline via the bond market. However, Pantelopoulos and Watts (2021, 238) argue that, "The Bank of England cannot be truly independent in an operational sense, as it must behave in an accommodative manner to defend its policy rate target." As such, the authors conclude that the same indirect financing mechanism observed in the USA and elsewhere, wherein the central bank implicitly finances government spending by supporting the primary dealers of government debt, equally applies to the UK context.

In the sections that follow, we explore in much more depth the institutional dynamics of government expenditure, revenue collection and borrowing in the UK. Wed draw the conclusion that in the UK case, in contrast to those mentioned in this section, a more direct form of financing of government expenditure takes place that renders discussions of finessing and accommodatory strategies less relevant in the UK context.

3. Government spending and revenue collection in the UK

3.1 The role of the Consolidated Fund and its institutional context

Figure 1 gives an overview of the institutions, accounts and banking infrastructure within which the UK Government's financial activities are undertaken. Within the public sector, the principal administrative body is HM Treasury, which encompasses the key institutions of the Central Funds, Government Banking Service and the Debt Management Office. The Bank of England connects these entities to the commercial banking system, which services the private sector money-users (households, non-financial institutions and non-bank financial corporations).

The Central Funds are foundational accounting structures maintained by HM Treasury which serve as the origin of departmental expenditures, the source of government securities issuance, and the destination for most government revenue. They comprise the Consolidated Fund, the National Loans Fund, the Contingencies Fund and the Exchange Equalisation Account (not shown). Despite their principal importance to government accounting, their existence and functions are not widely known or understood by the general public, and economic and media commentators seldom mention them.

The Consolidated Fund was established in 1787 as '…one fund into which shall flow every stream of public revenue and from which shall come the supply for every service' (HM Treasury 2023). It is often considered to be HM Treasury's 'current account', handling day-to-day cash flows related to expenditures and revenues. The National Loans Fund, established by the National Loans Act 1968, separately accounts for HM Treasury's lending and borrowing activities and records many of the UK Government's financial assets and liabilities[6]. The Contingencies Fund is used to enable urgent expenditure beyond that provided by routine parliamentary supply procedure. The Debt Management Account, while not formally one of the Central Funds, functions as an agent of the National Loans Fund and shares characteristics with Central Funds, such as issuing securities. These funds are interconnected through mirror accounts[7], with each having a claim on the Consolidated Fund to offset net liabilities or assets.

The Consolidated Fund acts as a sovereign line of credit that only HM Treasury, with consent from Parliament, can draw upon to commence spending. The Consolidated Fund is governed by the Exchequer and Audit Departments Act 1866 (the '1866 Act'), which stipulates that, '...this enactment shall not be construed to empower the Treasury or any authority to direct the payment… of expenditure not sanctioned by any Act whereby services are or may be charged on the Consolidated Fund, or by a vote of the House of Commons, or by an Act for the appropriation of the supplies annually granted by Parliament' (Exchequer and Audit Departments Act, 1866, s 11). In essence, Parliament holds ultimate authority over government spending and individual departments cannot spend without parliamentary authorisation. Sections 13 and 15 of the 1866 Act specify the mechanism that links two forms of parliamentary authorisation explicitly to the provision of money: Standing Services and Supply Services.

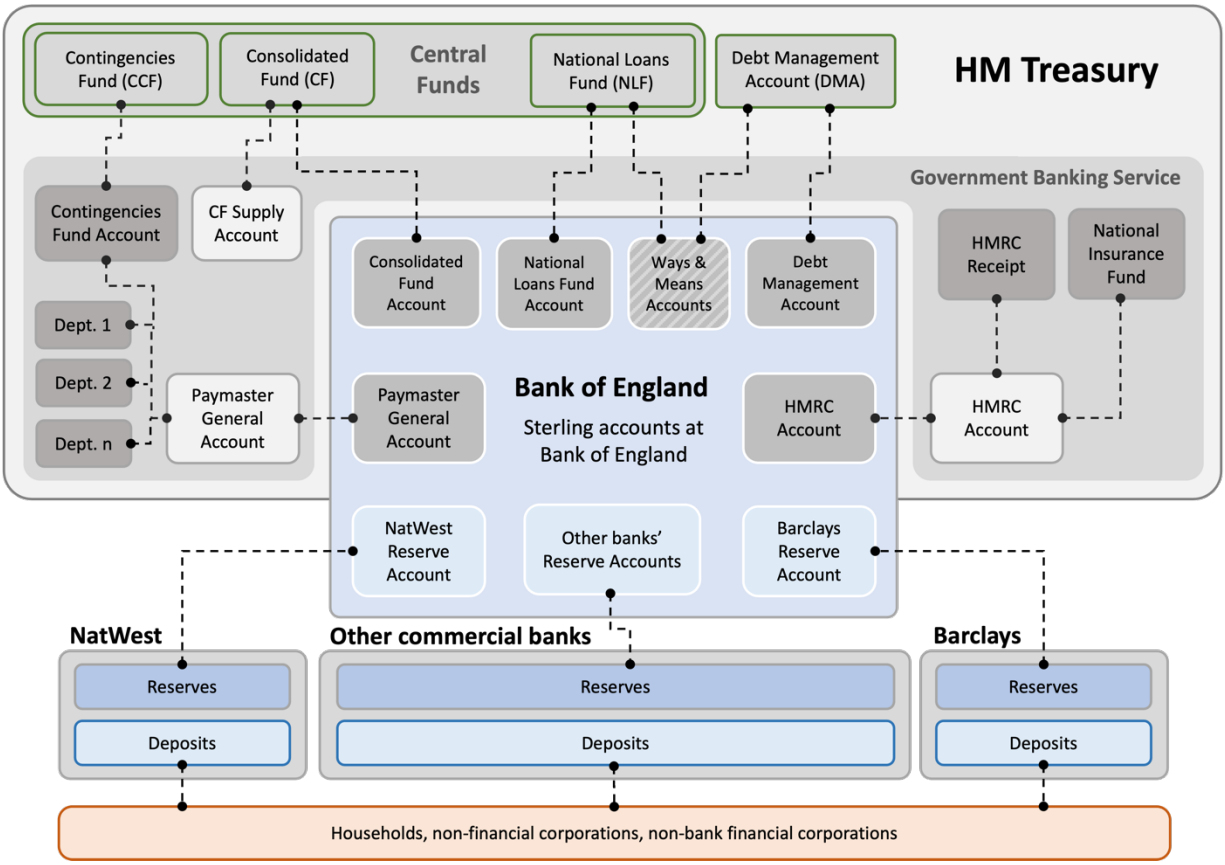
Standing Services are forms of government expenditure from the Consolidated Fund that are permanently authorised under specific acts of Parliament. For example, HM Treasury may issue from the Consolidated Fund to make urgent advances to government departments (Miscellaneous Financial Provisions Act 1946, s 3(1)), for making interventions in the banking sector for purposes of financial stability (Banking Act 2009, s 228) and for making payments towards 'the principal of and interest on any money borrowed' (National Loans Act 1968, s12(4)). Supply Services, in contrast, are voted annually and result in the passing of Supply and Appropriation Acts by Parliament. There are usually two such acts each year (in July and March)[8] and they itemise what would typically be considered to be the routine expenditure of government, including allowances for individual government departments and other public bodies (e.g. health, education, defence, etc.).

In both cases, the mechanism is, for all intents and purposes, identical. The first step is the passing of legislation through Parliament which authorises an issue from the Consolidated Fund. Next is a requisition by HM Treasury issued to the Comptroller and Auditor General,

[6] These include the loans of the Public Works Loan Board and the IMF Quota Subscription as well as Gilts and Treasury bills.
[7] In particular, the Debt Management Account and the National Loans Fund both have several asset and liability accounts with each other.
[8] The UK's financial year runs April to March.

who is today the head of the National Audit Office, for access to funds granted by Parliament. It is the Comptroller's responsibility to verify that the requisition is consistent with the terms under which Parliament authorised the expenditure. If satisfied, the Comptroller grants HM Treasury a 'credit' on the Consoliated Fund account at the Bank of England[9], whereupon HM Treasury may order the Bank to make issues to Principal Accountants from that account. Principal Accountants are public entities holding other accounts at the Bank.

Figure 1: A 'system map' of the institutions, accounts and banking infrastructure which supports the HM Treasury's financial activities.



Note: The Consolidated Fund, National Loans Fund, and Debt Management Account all hold accounts directly at the Bank of England. Government Banking Service represents the banking infrastructure which supports the day-to-day activities of governmental departments. Government Banking Service is therefore depicted holding liability (deposit) accounts for individual departments, shown in grey, as well as asset accounts, shown in white. These asset accounts support the settlement of transactions with the banking system, and include accounts at the Bank of England used distinctly for expenditure and revenue, as well as Parliamentary Supply Funding from the Consolidated Fund. The Ways and Means accounts shown are technically two accounts and are described in section 3.6.

[9] Elaborately entitled 'The Account of His Majesty's Exchequer'

Today the Commissioners for Revenue and Customs are the key Principal Accountants, not only because they oversee HM Revenue and Customs, but also because they supervise the Government Banking Service. This service, established in 2008, streamlined the UK Government's banking arrangements into a single, shared function that uses commercial banking partners for retail banking transmission services. NatWest currently handles payment services for most government departments, while Barclays primarily manages HMRC's revenue collection. Although operated by these commercial partners, the accounts appear on Government Banking Service's balance sheet, with payment settlement flowing through the principal accounts shown in Figure 1: accounts historically administered by the Office of HM Paymaster General for expenditure, and the General Accounts of HM Reveune and Customs for revenue. As such, any impact on the commercial partners' balance sheets is transient or non-existent, depending on the type of transaction undertaken (BACS or CHAPS protocols).[10]

3.2 Interpretation of the Accounting Tables

In this section (3) and the next (4) we describe the expenditure, taxation, and security issuance processes. The descriptions are supported by a set of fully balanced accounting tables which detail the financial flows that happen at each step, and the composition of each financial flow. Each column is a consolidated journal across the parties involved in the transaction. Each entry in the asset or liability row of a given party describes both the amount and the counterparty with which it is held. Blue transactions are settled in Bank of England money, green transactions in Exchequer credits and beige transactions in National Loans Fund short collateral (normally gilts of up to 18 months maturity). The red entries represent the balancing items in the accounts. Here we follow the approach used by Mitchell, Wray and Watts (2019, 93), whereby the balancing items held by the private sector ('payee' in figure 1) represent the financial sector's net financial wealth and the balancing items held by the public sector (Consolidated Fund and Dept in figure 1) balance the net financial liabilities issued by the government sector. The balancing asset at the government's Consolidated Fund reflects the implicit value of future tax receipts (Finance Act 1954, s 34(3)), as elaborated in section 3.3.

Throughout Sections 3 and 4, we have kept the accounting narrative to a minimum, highlighting only the primary banking transactions that achieve the outcome of each step. This is to help the reader follow the flow and understand what is driving the process. In the online Appendix, we also provide supplementary graphical balance sheet representations of the key transactions, showing government spending (figure A1), the Exechequer sweep (Figure A2) and Cash management (Figure A3).

In Section 4, the daily cash management procedure is outlined, which aims to align spending peaks with taxation peaks through market transactions involving short-term

[10] The BACS level 3 (Government Grade) payment clearing and settlement protocol directly substitutes a Government Banking Service public deposit account for the commercial partner's reserve account as the pertinent settlement account for transactions. This is via a three-legged transaction: there is a source account, a destination account and a nostro account. The public deposit account is used as the nostro. This makes the GBS source account (managed by the commercial partner) a memorandum account on the public deposit control account used as the nostro.

government securities. Debt management, the sale of longer-term securities via gilt auctions, is not explicitly shown but can be thought of as a subsequent step where the costless, automatic borrowing is refinanced into more expensive borrowing in line with government policy.

3.3 Government expenditure

Table 1 outlines HM Treasury's expenditure process, showing the series of transactions occurring across the balance sheets of all parties when a government department (Dept.) seeks to make a payment to a private sector payee (see also Figure A1 in the Appendix)

The first step ('Monthly Treasury Requistition') follows the legal process mandated by section 15(2) of the 1866 Act. HM Treasury raises a monthly requisition for the approval of the Comptroller and Auditor General to allocate Parliamentary funding. Once approved, the Comptroller grants HM Treasury "a credit on the Exchequer account at the Bank of England". An amount to the value of the credit is transferred from the Consolidated Fund's account at the Government Banking Service to the accounts of each of the government departments that have requested funds. These sums are 'Exchequer credits'; they are not sterling at this point, hence the Bank of England's balance sheet remains static (represented via the blank entries). Note that the allocation of spending balances within the Government Banking Service is conducted entirely by balance sheet expansion and is contingent only upon the authority of Parliament.

In step 2 ('Daily Cash Drawdown'), government departments draw on this monthly allocation of Exchequer credits on a day-to-day basis based upon anticipated cash flows. HM Treasury provides for the settlement of this expenditure via a daily cash drawdown from the Consolidated Fund, known as 'issues'. HM Treasury, following Section 15(3) of the 1886 Act, 'cashes in' some of the Exchequer credit at the Government Banking Service and transfers an equivalent amount from the Consolidated Fund account at the Bank of England to the Government Banking Service's clearing account[11], also at the Bank. The exchange is done by HM Treasury on a one-for-one basis and is not discounted.

Consequently, the Bank of England's balance sheet expands, whereas the balance sheet of the Government Banking Service remains the same size. It is worth noting that these public sector accounts at the Bank are not recognised within the 'Sterling Monetary Framework'[12] as reserve accounts. Instead, they are recorded on the Bank's balance sheet as 'public deposits' (Bank of England 2023a, 141).

[11] This account, among others, was operated by The Office of HM Paymaster General for around 170 years before responsibility was transferred to the newly established Government Banking Service (The Transfer of Functions (Office of Her Majesty's Paymaster General) Order 2006).

[12] 'The Bank of England's mission is to promote the good of the people of the United Kingdom by maintaining monetary and financial stability. The Bank's operations in the sterling money markets — known as the Sterling Monetary Framework (SMF) — serve that mission.' (Bank of England 2015, 3)

Table 1: Accounting transactions involved when a department of the UK government spends in accordance with expenditure authorised by the UK Parliament.

		1. Monthly Treasury Requisition	2. Daily Cash Drawdown	3. Deptmental Spending	Balance
Consolidated Fund (CF)	**Assets**	+100 Balance			100 Balance
	Liabilities	+100 GBS	-15 GBS		85 GBS
			+15 BoE		15 BoE
Government Banking Service (GBS)	**Assets**	+100 CF	-15 CF	-10 BoE	85 CF
			+15 BoE		5 BoE
	Liabilities	+100 Dept		-10 Dept	90 Dept
Department (Dept)	**Assets**	+100 GBS		-10 GBS	90 GBS
	Liabilities	+100 Balance		-10 Balance	90 Balance
Bank of England (BoE)	**Assets**		+15 CF		15 CF
	Liabilities		+15 GBS	-10 GBS	5 GBS
				+10 Comm	10 Comm
Commercial Bank (Comm)	**Assets**			+10 BoE	10 BoE
	Liabilities			+10 Payee	10 Payee
Payee	**Assets**			+10 Comm	10 Comm
	Liabilities			+10 Balance	10 Balance

Departmental spending then takes place. The balance in the Government Banking Service's clearing account at the Bank is used to settle payments into the banking system by transfer to the reserve accounts of commercial banks. At this point, the balance sheets of the Government Banking Service and the department have contracted, having expended a proportion of Exchequer credits previously granted. The reduction of public deposits held on the Bank of England's balance sheet is matched by a corresponding increase in reserve liabilities, leaving its balance sheet unchanged.

These transactions automatically trigger the other balancing transfers shown within the tables, which leads to some interesting observations. For example, 'government borrowing' first arises after parliamentary authorisation of spending, when the Consolidated Fund 'borrows' from (issues a liability to) the Government Banking Service to allocate funding to departments. This happens automatically and costlessly as a simple consequence of balance sheet expansion within a double-entry bookkeeping framework. A fundamental design feature of the modern-day system (the mechanics of which we explore in section 3.5) is that the account of the Consolidated Fund at the Bank of England starts every day with a zero balance, yet orders for issues out of the account are nevertheless made and fulfilled. It follows that transfers to the account of the Government Banking Service from the Consolidated Fund arise as newly issued money by way of balance sheet expansion within

the Bank of England (described as 'intraday credit'). Once the full suite of transactions is completed, this new, net monetary asset is held by the private sector recipient of the spending but still ultimately balanced by the Consolidated Fund liability to the Bank. This process of money creation operates under the order of HM Treasury but with ultimate provenance in Parliament.

The terms under which the Bank of England makes issues on behalf of Parliament pre-date the 1866 Act and have never been constrained by available cash balances.[13] Indeed, this feature is codified in legislation: 'Any sum charged by any Act, whenever passed, on the Consolidated Fund shall be charged also on the growing produce of the Fund' (Finance Act 1954, s 34(3)). Such phrasing serves to connect issues with "all the revenues to be received in the future" (Brittain 1959, 16), thereby framing expenditure as a form of credit advanced on the security of future tax revenues, and aligning with the Chartalist theory of money which asserts that fiat currency has value in exchange because of the sovereign's tax-raising power (Innes 1914; Keynes 1930; Ingham 2004; Knapp 1924).

We conclude, therefore, that it is the expenditure that causes a matching, future tax liability (shown in red in Table 1) and there is no 'intertemporal budget constraint', as is commonly proposed in the orthodox view (see e.g. Fischer and Easterly 1990), that imposes an *ex-ante* limit on the quantity of current or future spending.

3.4 Government revenue collection

The Exchequer and Audit Departments Act (1866, s 10) states: 'All public moneys payable to the Exchequer shall be paid into the Consolidated Fund', while the Commissioners for Revenue and Customs Act (2005, s 44) reaffirmed that principle: 'The Commissioners shall pay money received in the exercise of their functions into the Consolidated Fund'. As such, the Consolidated Fund represents the legally mandated, final destination for most of the Government's revenue. The chain of transitions which support this revenue collection process are depicted in Table 2.

Following the establishment of the Government Banking Service, and with the current commercial banking contracts in place, HMRC's revenue collection activities are processed initially by Barclays Bank PLC. HMRC's receipt accounts remain within the Government Banking Service with Barclays acting as processing agent for their sort codes. To pay taxes, taxpayers need to instruct their bank to send a payment to the specified sort code and account. This causes a deletion of the taxpayer's bank deposit at the commercial bank and a corresponding transfer of central bank reserves from the taxpayer's bank to Barclays. Barclays then credits HMRC's tax collection accounts within the Government Banking

[13] Throughout the early 19th century the UK Exchequer was organised around a quarterly accounting cycle within which Bank advances were made to support spending and reconciled with tax receipts only at each quarter-end (House of Commons, 1856). 'Deficiency Bills' were issued to the Bank as security for net advances carried over into subsequent quarters. In 1857, a report from the Parliamentary Select Committee on Public Monies recommended ending the practice of issuing Deficiency Bills to the Bank of England and the practice of simply recording deficiencies as 'book debts' was adopted from 1866 (Tye 2023). The quarterly accounting framework was abolished in 1954 (Finance Act 1954, s 34(3)).

Service with the appropriate amounts, allowing HMRC to account for the various types of taxes (step 1, Table 2).

Several times a day, HMRC transfers amounts from their accounts at the Government Banking Service to their general account at the Bank of England (HMRC 2021), ensuring that any funds in Barclays' reserve account, held on HMRC's behalf, are transferred to HMRC's account at the Bank (step 2, Table 2). Finally, these tax receipts are transferred to the Consolidated Fund account at the Bank at the end of each day as part of the daily consolidation 'sweep' process (step 3, Table 2).

This process shows that UK taxes are finally settled with HMRC using Bank of England money held by the commercial banks in their accounts at the Bank. This means that while the private sector can create commercial bank deposits at its own discretion, these deposits cannot be used to pay taxes. Rather, the private sector must also hold an adequate amount of government-issued money for this purpose, also in accordance with the Chartalist perspective which asserts that taxes are fundamentally connected to state money.

Table 2: Accounting transactions involved when tax is paid by a UK tax payer.

		1. Payment to Sort Code 08 32 00 (Indirect Taxes)	2. Transfer to HMRC General Account	3. HM Treasury sweep to Consolidated Fund	Balance
Consolidated Fund (CF)	**Assets**			-5 Balance	-5 Balance
	Liabilities			-5 BoE	-5 BoE
Government Banking Service (GBS)	**Assets**	+5 Barc	-5 Barc		
	Liabilities	+5 HMRC	-5 HMRC		
HM Revenue & Customs (HMRC)	**Assets**	+5 GBS	-5 GBS +5 BoE	-5 BoE	
	Liabilities	+5 Balance		-5 Balance	
Bank of England (BoE)	**Assets**			-5 CF	-5 CF
	Liabilities	-5 Comm +5 Barc	-5 Barc +5 HMRC	-5 HMRC	-5 Comm
Barclays (Barc)	**Assets**	+5 BoE	-5 BoE		
	Liabilities	+5 GBS	-5 GBS		
Commercial Bank (Comm)	**Assets**	-5 BoE			-5 BoE
	Liabilities	-5 TP			-5 TP
Taxpayer (TP)	**Assets**	-5 Comm			-5 Comm
	Liabilities	-5 Balance			-5 Balance

3.5 Consolidation of balances

The end-of-day consolidation of the public deposit accounts at the Bank of England is known as the 'Exchequer sweep' and results in all balances being consolidated into the Central Funds and ultimately into the National Loans Fund account at the Bank [14]. All the other public transaction accounts at the Bank are returned to a zero balance by the end of the day.

Table 3: Accounting transactions involved when when the Exchequer Pyramid is 'swept' at the conclusion of daily business to consolidate cash blances held at the Bank of England.

		1. Balance from Spending (Table 1)	2. Balance from Taxation (Table 2)	3. Transfer GBS Cash Balance to NLF	4. Transfer CF Cash Balance to NLF	Balance
Consolidated Fund (CF)	**Assets**	100 Balance	-5 Balance			95 Balance
	Liabilities	85 GBS			+10 NLF	85 GBS
		15 BoE	-5 BoE		-10 BoE	10 NLF
National Loans Fund (NLF)	**Assets**			+5 BoE	-5 BoE	
					+10 CF	10 CF
	Liabilities			+5 GBS		5 GBS
					+5 BoE	5 BoE
Government Banking Service (GBS)	**Assets**	85 CF		+5 NLF		85 CF
		5 BoE		-5 BoE		5 NLF
	Liabilities	90 Dept				90 Dept
Department (Dept)	**Assets**	90 GBS				90 GBS
	Liabilities	90 Balance				90 Balance
Bank of England (BoE)	**Assets**				+5 NLF	
		15 CF	-5 CF		-10 CF	5 NLF
	Liabilities	5 GBS		+5 NLF		
		10 Comm	-5 Comm	-5 GBS	-5 GBS	5 Comm
Commercial Bank (Comm)	**Assets**	10 BoE	-5 BoE			5 BoE
	Liabilities	10 Dep	-5 Dep			5 Dep
Depositors (Dep)	**Assets**	10 Comm	-5 Comm			5 Comm
	Liabilities	10 Balance	-5 Balance			5 Balance

[14] 'Government bank accounts at the Bank of England are linked together in a system known as the Exchequer Pyramid … At the end of each working day, any public funds in the Exchequer Pyramid at the Bank of England are swept up to the National Loans Fund, which itself is swept into the Debt Management Account.' (National Audit Office 2009, Appendix Four)

The sweep process is summarised in Table 3 and see also Figure A2 in the Appendix. HM Treasury collects the daily tax takings from HMRC's general account at the Bank of England and transfers them to the Consolidated Fund Account at the Bank (step 2, Table 3), combining them with the result of the day's cash drawdown to give a final net balance for the day. At the same time, any remaining cash balances held by the Government Banking Service at the Bank of England are transferred to the National Loans Fund Account at the Bank, representing an overnight loan between the Government Banking Service and the National Loans Fund (step 3, Table 3).

The Consolidated Fund is balanced according to the process laid down by law (National Loans Act 1968, s 18), which results in the balance of the Consolidated Fund Account at the Bank being transferred to the National Loans Fund Account at the Bank. This has the effect of zeroing the Consolidated Fund Account's balance that has accumulated from the day's spending and taxing activities (step 4, Table 3).

Spending and revenue are both anchored to the Consolidated Fund Account at the Bank of England but proceed during each day via separate accounts at the Bank - the Government Banking Service accounts in the case of payments, and HM Revenue and Custom's accounts in the case of tax revenues. These accounts are only reconciled at the end of each day (National Audit Office 2009, Appendix Four, 11; HMRC 2021) and the Consolidated Fund Account can therefore only ever achieve a positive balance, by receiving a net transfer over its initial zero starting position at the end of each day. It follows that any expenditure from the Consolidated Fund occurs when the Consolidated Fund has a nil or negative balance, and there is never a situation whereby a deposit of tax revenue furnishes a balance that is subsequently used for spending. In this sense, all spending arises as new money advanced as credit and not from taxation or 'borrowing'.

3.6 The Ways and Means Accounts

With all public deposit accounts zeroed, the resulting balance on the National Loans Fund account is the UK Government's net cash balance for that day, called the 'Net Exchequer Position'. For the case described in Table 3, where there is a deficit at the end of the day, the National Loans Fund has a permanent facility at the Bank of England known as the 'Ways & Means account' to formalise its debt to the Bank. This facility is often viewed as an overdraft and was the normal method of Cash Management throughout the 20th century.

HM Treasury also has access to another 'Ways and Means' account, known as 'Ways and Mean II' which serves as an overdraft facility with the banking system. This facility is a liability of the Debt Management Account and arose as part of the Cash Management system introduced after the Debt Management Office was established in 1998.

The original Ways and Means account, linked to the National Loans Fund, was frozen around the turn of the century due to it conflicting with the UK Government's desire to align with the European Union's Maastricht Treaty (Articles 104 and 109e(3), the UK Protocol (Paragraph 11) and Council Regulation 3603/93) which prohibits direct monetary

financing of governments by the central bank. But this would reduce the "discretion as to the timing of market borrowing by central government." (Debt Management Office 1998, §39, p15). The solution was to come up with a commercial overdraft linked to the Debt Management Account, but using a syndicate structure.

> "… there may then be very occasional instances when the Exchequer's credit balance is exhausted in the overnight 'sweep' of its accounts at the Bank. In order to be Maastricht compliant (if the UK were to join Stage 3), the Bank of England cannot lend overnight to make up the shortfall. As an alternative, a standby overdraft facility will be established in favour of the DMA with a syndicate of the core settlement banks. Any use of this facility by the DMO would be remunerated (at a rate to be agreed)." (ibid, §43, p16)

This syndicate structure, known as SEDTA (Special End of Day Transfer Arrangement), was abandoned in May 2006 following the introduction of the Bank of England's new monetary framework (Debt Management Office 2006, 50). It was quietly replaced by a second Ways and Means Account at the Bank.[15]

The net operational effect of using either of the Ways and Means accounts is identical: HM Treasury end up with an overdraft at the Bank of England charged at Bank rate. The difference is that the original Ways and Means Account is an asset of the Issue Department of the Bank and transfers to the National Loans Fund, whereas the Ways and Means II Account is an asset of the Banking Department and transfers to the Debt Management Account (Bank of England, 2023b).

HM Treasury's preferred policy approach is to clear the Net Exchequer Position using daily transfers between the Debt Management Account's account at the Bank of England[16] and the National Loans Fund account. Only when this leaves the Debt Management Account's account at the Bank overdrawn is a transfer from HM Treasury's Ways and Means II account at the Bank automatically made.[17] The original Ways and Means account is still available but tends to be used only during crises. The most recent example was in April 2020 during the Covid crisis when HM Treasury announced it may use the Ways and Means account.[18] This reminder, that sales of interest-bearing government securities are a discretionary policy choice rather than a funding requirement, caused money market rates to settle and the facility remained unused.

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[15] 'The DMA is held at the Bank of England and a positive end-of-day balance must be maintained at all times; it cannot be overdrawn. Automatic transfers from the government Ways and Means (II) account at the Bank of England would offset any negative end-of-day balances, though it is an objective to minimise such transfers. (Debt Management Office 2022, 32). A version of this wording first appeared in the annual review in 2008 (Debt Management Office 2008, 30-31)

[16] The Debt Management Account is a fund, and holds operational accounts at various institutions. Hence the tortuous terminology.

[17] The last time this happened was 13 December 2021 to the tune of £3.9million. (Debt Management Office 2022, 32)

[18] 'As well as temporarily smoothing government cash flows, the W&M facility supports market function by minimising the immediate impact of raising additional funding in gilt and sterling money markets.' (HM Treasury 2020a)

4. Debt management and the purpose of government debt issuance

4.1 The full funding rule, cash management and supporting monetary policy

Even though the institutional framework described in Section 3 makes it clear that spending is not linked to bond issuance, the annual UK Debt Management report (Debt Management Office 2023a, 10) states that:

> An overarching requirement of debt management policy is that the government fully finances its projected financing requirement each year through the sale of debt. This is known as the 'full funding rule'. The government therefore issues sufficient wholesale and retail debt instruments, through gilts, Treasury bills (for debt financing purposes) and NS&I products, to enable it to meet its projected financing requirement in full.

The rationale for the full funding rule is, first, that '…the government believes that the principles of transparency and predictability are best met by the full funding of its financing requirement'; and, second, that, 'to avoid the perception that financial transactions of the public sector could affect monetary conditions, consistent with the institutional separation between monetary policy and debt management policy.' Furthermore, the overall debt management objective is 'to minimise, over the long term, the costs of meeting the government's financing needs, taking into account risk, while ensuring that debt management policy is consistent with the aims of monetary policy' (ibid., 8).

The impact of spending and debt management on monetary policy merits further exploration. The daily accounting cycle described in Section 3.5 results in a net positive or negative monetary balance being held in the National Loans Fund account, known as the Net Exchequer Position . Under the current policy, the Debt Management Office conducts 'cash management' to eliminate this position, by trading in a 'range of selected instruments with cash management counterparties'[19] within the banking sector. The rationale is that, by accounting identity, the Net Exchequer Position also represents a measure of the impact of the government's financial flows *on the banking sector*. Specifically, an end of day *positive* balance on the National Loans Fund account indicates that money has been drawn *out of* the banking sector overall, whereas an end of day *negative* balance indicates that money has been *added to* the banking sector.

Under the 'corridor' reserve management system which was in operation when the Debt Management Office was established, the impact of the Net Exchequer Position on the banking sector would risk influencing the policy-targeted short-term interest rate in the inter-bank market and undermine the Bank's monetary policy objectives. Despite a change in the monetary policy regime, HM Treasury still aims to accumulate no cash balances or debt on its accounts at the Bank of England by the end of each day, as these would reflect an equal and opposite impact on the banking sector. The Debt Management Office's remit

[19] 'The DMO may transact in repo/reverse repo transactions in gilts, European government bonds and/or corporate bonds, Treasury bills, certificates of deposit, commercial paper and short-term debt with counterparties for maturities of up to 1 year, and enter into transactions in gilts (including strips) within 18 months of maturity.' (Debt Management Office 2021, 7)

remains, therefore, to drain any reserves which have been added to the banking system on days of net spending, or to return reserves which have been removed from the banking sector on days of net revenue. The Debt Management Office receives cash flow predictions throughout the day. These predictions guide its cash management trading activities with the banking sector as it looks to offset the predicted liquidity impact of the Net Exchequer Position and zero the National Loans Fund account.

The Cash Management process is summarised in Table 4 and Table 5 (and see also Figure A3 in the Appendix). Table 4 describes the more common deficit Net Exchequer Position, with Table 5 describing the surplus position. The first step in Table 4 describes the transactions required to furnish the Debt Management Account with the assets it needs to undertake its trading activity on behalf of the National Loans Fund. A large quantity of gilts is created for use within the Debt Management Account as short collateral.[20] The Debt Management Account starts each day with a positive balance in its account at the Bank of England and the Cash Management policy objective is to preserve that balance over a weekly period via the Debt Management Office's market activities. This target balance is adjusted from time to time in agreement with the Bank of England and any change is handled within the weekly turnover without explicit offsetting market activity by the Bank, given the current surplus liquidity environment within the banking system.[21]

[20] 'During the year, £63,309 million (nominal) gilts (2022: none) were created by the National Loans Fund and sold to the DMA for use as collateral in its cash management operations.' (Debt Management Office 2023b, 118). They are 'sold' only in the sense that the liability of the Debt Management Account to the National Loans Fund is increased.

[21] 'Under the monetary policy framework in place prior to Quantitative Easing (referred to as 'reserves averaging'), the Bank of England[…]took into account a number of external variables when determining the amount of liquidity offered in its weekly open market operations. This would have included the target set on the Debt Management Account[…] Similarly under reserves averaging, deviations from the target would also have been factored into the next calculation of liquidity to be offered to the market.' (Bank of England 2020)

Table 4: Accounting transactions involved with the 'cash management' of a net daily Exchequer deficit position.

		1. DMA Initial Position	2. Net Exchequer Deficit Position (Table 3)	3. DMO Offsetting Market Activities	4. Transfer DMA Cash to NLF	Balance
Consolidated Fund (CF)	**Assets**		95 Balance			95 Balance
	Liabilities		85 GBS 10 NLF			85 GBS 10 NLF
National Loans Fund (NLF)	**Assets**	105 DMA	10 CF		-5 DMA	100 DMA 10 CF
	Liabilities	5 BoE 100 DMA		-4 DMA		5 BoE 96 DMA
			5 GBS	+4 Comm		4 Comm
			5 BoE		-5 BoE	5 GBS
Debt Management Account (DMA)	**Assets**	100 NLF		-4 NLF +4 Comm		96 NLF 4 Comm
		5 BoE		+4 BoE	-5 BoE	4 BoE
	Liabilities			+4 Comm		4 Comm
		105 NLF			-5 NLF	100 NLF
Government Banking Service (GBS)	**Assets**		85 CF 5 NLF			85 CF 5 NLF
	Liabilities		90 Dept			90 Dept
Department (Dept)	**Assets**		90 GBS			90 GBS
	Liabilities		90 Balance			90 Balance
Bank of England (BoE)	**Assets**	5 NLF	5 NLF		-5 NLF	5 NLF
	Liabilities	5 DMA	5 Comm	+4 DMA -4 Comm	-5 DMA	4 DMA 1 Comm
Commercial Bank (Comm)	**Assets**			+4 NLF		4 NLF
				+4 DMA		4 DMA
			5 BoE	-4 BoE		1 BoE
	Liabilities			+4 DMA		4 DMA
			5 Dep			5 Dep
Depositors (Dep)	**Assets**		5 Comm			5 Comm
	Liabilities		5 Balance			5 Balance

To clear the deficit position in Table 4, the Debt Management Account sells a quantity of short collateral to a counterparty, along with a contract to purchase equivalent short collateral in the future, a repurchase agreement or 'repo' (step 3, Table 4). Recording these contracts in full shows that the counterparty borrows short collateral from the Debt Management Account at the same time as the Debt Management Account borrows sterling from the counterparty. Short collateral is transferred from the Debt Management Account to the counterparty and an amount is transferred from the reserve account of the counterparty at the Bank of England to the Debt Management Account's account at the Bank. At this point, the Debt Management Account's account at the Bank of England is above target. Once trading has concluded for the day, the Net Exchequer Position is cleared by a transfer of this excess amount from the Debt Management Account's account to the National Loans Fund account (step 4, Table 4).

Table 5 shows the corresponding surplus scenario and works similarly but with the cash and short collateral moving in the opposite directions. In many cases, this can represent the settlement of the 'repurchase' contract put in place by a previous 'repo'. The Debt Management Account opens with the repo from Table 4 still in effect, and with a surplus position to clear by settlement of the repurchase part of the contract. The counterparty returns equivalent short collateral to the Debt Management Account, and an amount is transferred from the Debt Management Account's account at the Bank of England to the reserve account of the counterparty (step 3, Table 5). This leaves the Debt Management Account's cash balance below target until trading for the day is complete. At that point the surplus balance in the National Loans Fund account at the Bank of England is transferred, clearing the Net Exchequer Position (step 4, Table 5).

It is important to note that trading takes place concurrently with spending and tax collection and any variation between the daily start and end balance of the Debt Management Account's account at the Bank of England is largely rectified over its target weekly balancing period.[22] This process clearly shows that gilts are not sold before spending; instead short repo contracts are issued daily by the Debt Management Office to offset the liquidity impact of fiscal activities on the money market.[23] These contracts represent bi-directional borrowing of two different types of money, or a 'swap' as it is more commonly known. They are supplied from a pre-positioned pool of short collateral that the Debt Management Office can expand or contract on demand.

[22] 'The DMO will conduct market operations with a view to achieving, within a very small range, the weekly cumulative target balance for the DMA at the Bank of England.' (Debt Management Office 2022, 32)
[23] The 'debt management' process, the auctioning of gilts, then becomes, functionally, a short to long refinancing procedure.

Table 5: Accounting transactions involved with the 'cash management' of a net daily Exchequer surplus position.

		1. DMA Initial Position	2. Net Exchequer Surplus Position	3. DMO Offsetting Market Activities	4. Transfer NLF Cash to DMA	Balance
Consolidated Fund (CF)	**Assets**		91 Balance			91 Balance
	Liabilities		85 GBS 6 NLF			85 GBS 6 NLF
National Loans Fund (NLF)	**Assets**	100 DMA	4 BoE 6 CF		-4 BoE +4 DMA	104 DMA 6 CF
	Liabilities	4 BoE 96 DMA	1 BoE 4 Comm 5 GBS	+4 DMA -4 Comm		5 BoE 100 DMA 5 GBS
Debt Management Account (DMA)	**Assets**	96 NLF 4 Comm 4 BoE		+4 NLF -4 Comm -4 BoE	+4 BoE	100 NLF 4 BoE
	Liabilities	4 Comm 100 NLF		-4 Comm	+4 NLF	104 NLF
Government Banking Service (GBS)	**Assets**		85 CF 5 NLF			85 CF 5 NLF
	Liabilities		90 Dept			90 Dept
Department (Dept)	**Assets**		90 GBS			90 GBS
	Liabilities		90 Balance			90 Balance
Bank of England (BoE)	**Assets**	4 NLF	1 NLF 3 Comm	-3 Comm		5 NLF
	Liabilities	4 DMA	4 NLF	+1 Comm -4 DMA	-4 NLF +4 DMA	1 Comm 4 DMA
Commercial Bank (Comm)	**Assets**	4 DMA	4 NLF	+1 BoE -4 DMA -4 NLF		1 BoE
	Liabilities	4 DMA	3 BoE 1 Dep	-3 BoE -4 DMA		1 Dep
Depositors (Dep)	**Assets**		1 Comm			1 Comm
	Liabilities		1 Balance			1 Balance

The notion that security issuance is ultimately motivated by monetary policy, rather than funding expenditure, is consistent with official procedures prior to the establishment of the Debt Management Office, as indicated by a Parliamentary Select Committee report which explained that, 'Although Treasury bills are a government debt instrument, the Bank's monetary considerations determine the level of the weekly tender' (House of Commons, 2000, paragraph 38). It also aligns with studies of the described in Section 2, which emphasise the role of public debt issuance in offsetting the increase in reserves created by government (money-creating) expenditure to support the central bank in achieving its targeted interest rate (Bell 2000; Tymoigne 2014).

However, this motivation is no longer applicable in the UK case because in 2009 the Bank of England switched its monetary policy regime from a corridor system to a supply-dominated 'floor' system following the Monetary Policy Committee's decision to purchase assets through the creation of reserves, commonly known as Quantitative Easing (QE) (Clews and Salmon 2010). In such a 'floor' system, there are excess reserves in the interbank market, which pushes the inter-bank lending rate down to the level paid by the Bank of England on the commercial banks' holdings of reserves. This policy rate functions as a floor for the market rate, since it would be unprofitable to lend reserves at a lower rate. The price floor renders the actual quantity of reserves in the inter-bank market largely irrelevant to the achievement of the short-term interest rate target and, as such, any necessary operational link between quantities of debt issued and the net balance of HM Treasury's spending and taxation flows is broken.

4.2 The safe store of value and collateral function of public debt

Given the provisions in legislation that anchor the other Central Funds and the Debt Management Account to the Consolidated Fund, all UK government debt instruments are claims on the Consolidated Fund. Such debt instruments are held and circulate within the economy, exhibiting the money-like properties of a safe store of value based on the supreme creditworthiness that is inherent in financial claims on the State.

Some claims on the Central Funds are non-negotiable and are therefore specifically useful as a secure store of value. For example, National Savings & Investments is an Executive Agency of HM Treasury which offers personal savings facilities to households and offers a highly secure way for individual savers to deposit money with the National Loans Fund (including a currently over-subscribed index-linked product). Furthermore, HM Treasury holds an 'unquantifiable' contingent liability to the Financial Services Compensation Scheme for the provision of commercial bank deposit insurance (HM Treasury 2021, 379). This associates bank deposits up to a value of £85,000 per person with a claim on the National Loans Fund.

Gilts and Treasury bills are negotiable, fixed-term financial instruments. They comprise different maturities and are used extensively as collateral in the Sterling Monetary Framework to short-term gain access to central bank money. In the UK and beyond, negotiable, fixed-term government securities are at the heart of 'repo' markets, which have

grown increasingly important in financial systems over the past few decades. These securities serve as high-quality collateral for various types of non-bank financial intermediaries as part of the general trend towards 'market-based' or 'shadow-bank' finance. (Gabor 2016; Gabor and Ban 2016; Dutta 2020).

However, recent bank failures in the USA have demonstrated that negotiable, fixed-term government securities are subject to interest rate risk. Central banks' decision to rapidly increase short-term rates and put upward pressure on longer term rates by selling their stock of securities, known as 'Quantitative Tightening' (QT), in attempt to bring down high inflation, resulted in capital losses on negotiable securities held by financial institutions. In the case of some mid-sized banks in the USA this lead to runs on their deposits, many of which were uninsured.

In the UK, sudden changes in interest rate expectations among financial market participants in response to the Liz Truss government's 'mini-budget' in 2022 led to rising gilt yields. The Bank of England had to step in to provide emergency liquidity to support certain pension funds exposed to these market shifts. If the Bank of England had not intervened, a 'self reinforcing spiral' of falling gilt values would have severely jeopardised financial stability (Cunliffe, 2022).

These events have been presented as evidence that there are solvency risks relating to UK Government budget deficits. However, we would argue that it merely reveals that there is interest rate risk for holders of negotiable fixed-term government securities, not solvency risk for the Government. Furthermore, it is likely the crisis could have been avoided had HM Treasury and the Bank coordinated more effectively. The 'gilt crisis' can be attributed more to regulatory issues than the Truss government's budget, as it resulted from certain pension funds using risky hedging instruments that could strain liquidity when interest rate volatility rises (House of Commons, 2023). The Bank has now taken steps to provide a 'lender of last resort' function to non-banks to ensure this type of event does not happen again.[24]

These episodes demonstrate the financial stability risks associated with the issuance of negotiable, fixed-term securities and suggest a need for improved fiscal-monetary policy coordination (see section 5.2) and potentially a general reconsideration of macroeconomic stabilisation policy. However, while there are sound reasons for considering changing the *composition* of the UK Government's aggregate liabilities away from negotiable, fixed-term instruments, there seems less of a case for adopting policies aiming to reduce the level of public debt *per se*. The reduction or elimination of aggregate government liabilities would have detrimental implications for private sector exchange and financial stability, though these consequences are rarely referenced by proponents of public debt reduction.

[24] 'Our end destination is clear – to build a new central bank backstop tool capable of lending directly to NBFIs against high quality assets to help tackle future episodes of severe dysfunction in core markets that threaten UK financial stability'. (Bank of England, 2023c)

5. Discussion

5.1 Constraints on government spending

Given the analyses presented in Sections 3 and 4, what conclusions can be drawn concerning the constraints commonly portrayed as limiting the UK Government's (and other governments') financial activities? These include liquidity risk and market risk (or bond market discipline). Firstly, in regard to the sequencing of public financing and liquidity risk, the analysis in Section 3 shows there is no requirement for the provisioning of money balances through taxation and external 'borrowing' activities to occur *before* government spending can be undertaken. As such, there are no circumstances whereby the UK Government has 'insufficient money' for expenditure requirements or is at risk of 'running out of money'. Indeed, one of HM Treasury's fundamental organising principles is for the accumulation of cash balances to be minimised. Instead, all spending arises via the creation of new monetary assets and this process is *independent* of tax and securities dealing activities. The conclusion, which HM Treasury acknowledges, is that there is no aspect of the UK Government's banking arrangements which can prevent government expenditure from being realised once it has been authorised by Parliament.[25]

Another commonly perceived constraint is default risk. HM Treasury is required by law to make payment of principal and interest on any 'borrowing' it undertakes. Such payments are permanently authorised by Parliament as standing services by the National Loans Act 1968.[26] Thus, default on national debt repayments, for example those associated with maturing gilts and Treasury bills, or National Savings withdrawals, can only occur with an express or implied repeal by Parliament of the relevant legislation. Neither HM Treasury nor the Bank of England has any discretion in this matter. From this perspective, government securities already function somewhat analogously to time-deposits, representing an interest-earning, secure alternative to other forms of money for a fixed or discretionary duration before reverting seamlessly to sterling (Mosler 2010, 108).

Equally, sales of negotiable, fixed-term securities, required to meet end of day 'offsetting' objectives, pose little challenge to HM Treasury. It is often claimed that the Government is beholden to a hostile an investor market, 'bond market vigilantes', which may refuse to purchase the government's securities or otherwise demand punitive terms. However, the Bank of England (1964) explained half a century ago that the banking sector will reflexively purchase, by the end of each day, any securities that need to be sold to satisfy policy requirements. That is, because banks are *already* holding excess central bank reserves that have been injected into the banking system during the day by virtue of HM Treasury's net spending. The quantity of the balances added during the day exactly matches the Debt management Office's offsetting remit, by definition, and the banks will reflexively switch these excess balances for something of the same creditworthiness but which receives a higher rate of return. In the current floor system, commercial banks are collectively

[25] 'The Government's banking arrangements … ensure that all expenditure authorised by Parliament can be settled' (HM Treasury 2020b)
[26] 'The principal of and interest on any money borrowed under this section … shall be charged on and paid out of the National Loans Fund with recourse to the Consolidated Fund.' (National Loans Act 1968, s 12(4))

compelled to hold excess reserves, which further establishes a 'seller's market' for gilts and Treasury bills.

The Debt Management Office is not, therefore, faced with a market holding scarce funds that seeks to bid up the prices charged to HM Treasury. Instead, as the monopoly issuer of sterling safe assets, the Debt Management Office need only to offer terms that are, at worst, infinitesimally better than that earned on the excess central bank reserves that the banks already hold (Fullwiler 2020, 20). As such, short-term rates on government securities converge to the Bank of England's policy rate, rather than being determined by market forces in the hypothetical market for loanable funds, which underpins neoclassical economic theory (Akram and Li 2020; Storm 2020). Given the role of government securities in the functioning of monetary policy (including QE), interest payments on government debt can be conceived simply as an expression of the policy interest rate targeted by the Bank of England Monetary Policy Committee. Sales of government securities are not at the discretion of markets, because the demand for gilts by primary dealers in auctions is generated as a routine feature of the functioning of HM Treasury, Government Banking Service and the Sterling Monetary Framework.

In summary, the institutional structures described in this paper demonstrate that the UK Government is not exposed to the alleged risks of 'running out of money', defaulting on debt obligations, the sentiments of bond markets or a need to reduce levels of government debt below those demanded by the economy. Instead, the functioning of the Central Funds, in particular the daily accounting cycle and trading activities, was developed with the maintenance of monetary policy in mind. Under the current 'floor regime', where there is excess liquidity in the market, the issuance of government debt instead serves mainly to support secure store-of-value and source-of-collateral functions for the private sector.

5.2 Central bank independence and fiscal-monetary coordination

As noted in Section 2, there is currently lively debate about the relative independence of modern central banks vis-à-vis fiscal policy, a debate made more prescient in the light of the enormous fiscal expansions that accompanied the COVID-19 pandemic (Bartsch et al. 2020; Blanchard et al. 2020) and the high inflation that followed. In the UK, an official House of Lords Economic Affairs Select Committee investigation into Quantitative Easing examined accusations that the Bank of England had engaged in deficit financing (House of Lords 2021: 25-27). The report concluded that, 'We are concerned that scepticism of the bank's stated reasons for QE grew significantly during the COVID-19 pandemic, when many market participants said that they believed the Bank of England had used QE primarily to finance the Government's deficit spending' (ibid, p59; see also Stubbington and Giles 2021). In contrast, some post-Keynesian scholars argue against the neo-Chartalist 'consolidated public sector balance sheet' hypothesis for allegedly neglecting the role of independent central banks in limiting spending (Lavoie 2013; Palley 2015).

Our analysis finds, however, that when applied to the UK case, these discussions lack grounding as they overlook, intentionally or otherwise, the institutional reality of the

primacy of the Consolidated Fund and government debt securities in the monetary system. The Bank of England is never independent in the sense that it can refuse to facilitate public expenditure.[27] First, and most straightforwardly, HM Treasury requires the Bank of England to advance public deposits by virtue of the 1866 Act. Under its provisions the Bank of England has no discretion over whether to extend credit (and accept the intra-governmental, non-negotiable counterpart debt asset, see Table 1). It is thus not in a position to limit government spending, and it is notable that this status was not changed by the Bank of England Act 1998, which granted operational authority for monetary policy to the Bank (Bank of England Act 1998, s10).

Although the intra-government accounting underpinning the spending process is complicated, it is not a complex system. The core insight of our analysis is that the UK Government spends by issuing sterling reserves, which are internally financed by claims on the Consolidated Fund by the Bank of England, and issues negotiable, fixed-term debt instruments subsequently. Before 2009 the main rationale behind debt issuance was to support monetary policy implementation under the corridor system and, afterwards, due solely (as far as the available evidence suggests) to convention. We therefore do not consider the 'full funding rule' to impose any constraints on public spending that need to be 'finessed', as suggested by Pantelopoulos and Watts (2021), since the spending is financed automatically by a Bank of England claim on the Consolidated Fund.

Our findings thus support the argument that public financing operations can be significantly simplified in countries that require pre-funding of government spending accounts, without changing the economic impact. By removing non-binding constraints such as the full funding rule, public finance transparency reform would make clear that public financing derives from the State's authority to define and issue money. Speculating as to why such a reform has not happened is beyond the scope of this paper. However, we suspect the political impact of transparent government self-financing would be significant.

Second, Parliament is the only entity within the UK economy which can compel the payment of taxes. This privilege gives HM Government, uniquely, a guaranteed claim over domestic economic resources, making it the most creditworthy agent in the economy. This pre-emmient creditworthiness can be discerned from the systems and practices the UK Government employs to underpin the functionality of the monetary system. The Bank of England's implementation of monetary policy, for example, relies on the supreme creditworthiness of Parliament. Almost the entirety of the Bank of England's assets are represented by government securities or by private loans collateralised by these securities, and therefore the banknotes and central bank reserves, collectively known as 'base money', are underpinned by liabilities of the HM Treasury. Moreover, there are provisions in law to ensure that HM Treasury reflexively provides such securities to back the banknote issue (National Loans Act 1968, Section 9(3))[28] and additional injections of capital or granting of

[27] Even the landmark monetary policy initiative of Quantitative Easing was initiated on instructions from HM Treasury (HM Treasury 2009, Darling 2009)

[28] 'If … the value of the assets then held in the [Issue] Department falls short of the total amount of the Bank of England notes then outstanding, the Treasury shall assume a liability to the said Department of an amount equal to the difference. … Any liability assumed … shall be charged on the National Loans Fund with recourse to the Consolidated Fund.' (National Loans Act 1968, s 9(3-4))

indemnities to support the bank's business more generally are also provided by HM Treasury (HM Treasury 2018, 2020, 2022).

Equally, HM Treasury stands ready to provide financial assistance to ensure economic stability in the event of commercial bank failure. Stabilisation powers include the transfer of banking entities into public ownership and the provision of deposit insurance, both of which featured in the response to the Global Financial Crisis from 2008 (Financial Services and Markets Act 2000, part XV; Banking Act 2009). As the only entity within the economy which is in a position to extend such support, it is clear that the financial capacity of the UK Government surpasses that of the banking system, which creates the bank deposits that firms and households typically consider to be money. From this perspective it is no mystery why the banking sector would be satisfied to receive claims on the Government, even without explicit compulsion. By requiring taxes to be settled in Bank of England liabilities, the government additionally creates demand reserves and notes, ensuring they function as sterling monetary assets.

Taxes thus *do* allow the UK Government to spend, but they do not mechanically enable it in the way that is usually implied by political discourse. Instead, the guaranteed claim over national resources which the imposition of taxes provides generates the creditworthiness that enables the UK Government to leverage the monetary system for its own purposes, if it wishes to do so. This notion is enshrined in law with the provision that expenditure from the Consolidated Fund is charged 'on the Exchequer account at the Bank of England (or on its growing balance)'[29], thereby explicitly linking *current* spending to *future* tax revenue. This does not imply a mechanical 1:1 dependency between spending and taxation over a given period of time[30], but rather that taxation bestows unsurpassed creditworthiness on the UK Government's liabilities, making them valuable for the private sector to hold and net-save.

Taxes also play an important role in freeing up labour resources in the economy, and the physical capital or natural resources they would otherwise be using, which can subsequently support non-inflationary public spending. Thus, raising taxation on carbon-intensive forms of employment, for example, could free up capacity to support investment in renewable energy projects where similar skill sets and know-how may be needed to support the transition to a net-zero carbon economy.

Overall, these insights support the neo-Chartalist description and understanding of modern public financing. HM Treasury spends via money creation and not from pre-existing funds, and it does so autonomously at the Bank of England, which is legally obliged to support expenditures sanctioned by Parliament. But while the existing neo-Chartalist position often emphasises the need for central bank accommodation of government spending via actions in the money market that circumvent self-imposed constraints in the financing process (Tymoigne 2014; Pantelopoulos and Watts 2021), in the UK case there is a well-functioning

[29] This wording is used in the Exchequer and Audit Departments Act 1866 in both s 13(2) and s 15(2).
[30] The orthodox view that there is a government fiscal constraint is a misinterpretation of an accounting identity as an ex-ante system constraint rather than an ex-post balance sheet position. (Mitchell, Wray, and Watts 2019, §21.2, 333-5).

system wherein the Government directly finances its own expenditures without any need for accommodatory activity or finessing of self-imposed rules.

6. Conclusion

It is commonly claimed that the UK Government has no agency to create money and must instead obtain funding from taxpayers or lenders; expressed in the currently favoured political parlance: 'There is no magic money tree.'[31] In this paper we have shown that this theory does not accord with the institutional reality in the UK. In fact, the UK's fiscal agent, HM Treasury, is fundamental to the sterling monetary system, including the creation and issuance of monetary instruments and guarantees that underpin the entire public-private monetary framework.

At the heart of the UK financial system is the Consolidated Fund. This fund provides the UK Government with sovereign credit that HM Treasury, with parliamentary authority, draws on, backed solely by the ability to raise taxes in the future. When spending occurs, Exchequer credits are allocated by the Government Banking Service to government departments and exchange, on demand, at a fixed exchange rate onto the Bank of England's balance sheet as sterling public deposits. This, in turn, allows government departments to spend into the private sector, creating additional sterling-denominated deposits in the commercial bank accounts of recipients. The process is legally mandated and cannot be challenged by the Bank of England, any other government department or any private entity.

The primary economic function of government debt issuance, in the context of the 'floor' reserve management system that the Bank of England currently employs, is to support the desire of the bank and non-bank financial sector to hold a secure store value and source of collateral. However, the Bank of England's purchases of gilts withdraws the bonds back on to a public sector balance sheet and thus partly neutralises this function. This inconsistency among the Debt Management Office and the Bank of England in terms of government debt dynamics suggests that the UK monetary system could be simplified. The current arrangements raise questions about the economic efficiency of these operations given the involvement of financial intermediaries (the primary dealers, mainly commercial and investment banks), which profit from handling issuance transactions and market-making for the wider financial sector.

Whatever reforms do or do not take place, it should be made clear that the UK Government spends by issuing new money, destroys money when it taxes, and issues debt securities to provide a safe store of value and to affect interest rates in financial markets. Enhancing transparency in this way is necessary to improve public discourse and understanding of public finances. This could restore political accountability and strengthen the democratic scrutiny of macroeconomic policy .

[31] The term has been used by successive Conservative governments since David Cameron's speech in 2013 featured in the opening quotation of the article; most recently by the then Prime Minister and Chancellor in an article for the *Sunday Times* (Johnson and Sunak 2022)

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Appendix: Supplementary balance sheet representations of spending, taxation and borrowing processes

Figure A1: Government spending in a graphical balance sheet representation. Note: In order to make all balances balance assets and liabilities, one could add a negative net worth for the CF and a positive net worth for governmental departments (Dept.). These are left out for graphical clarity.

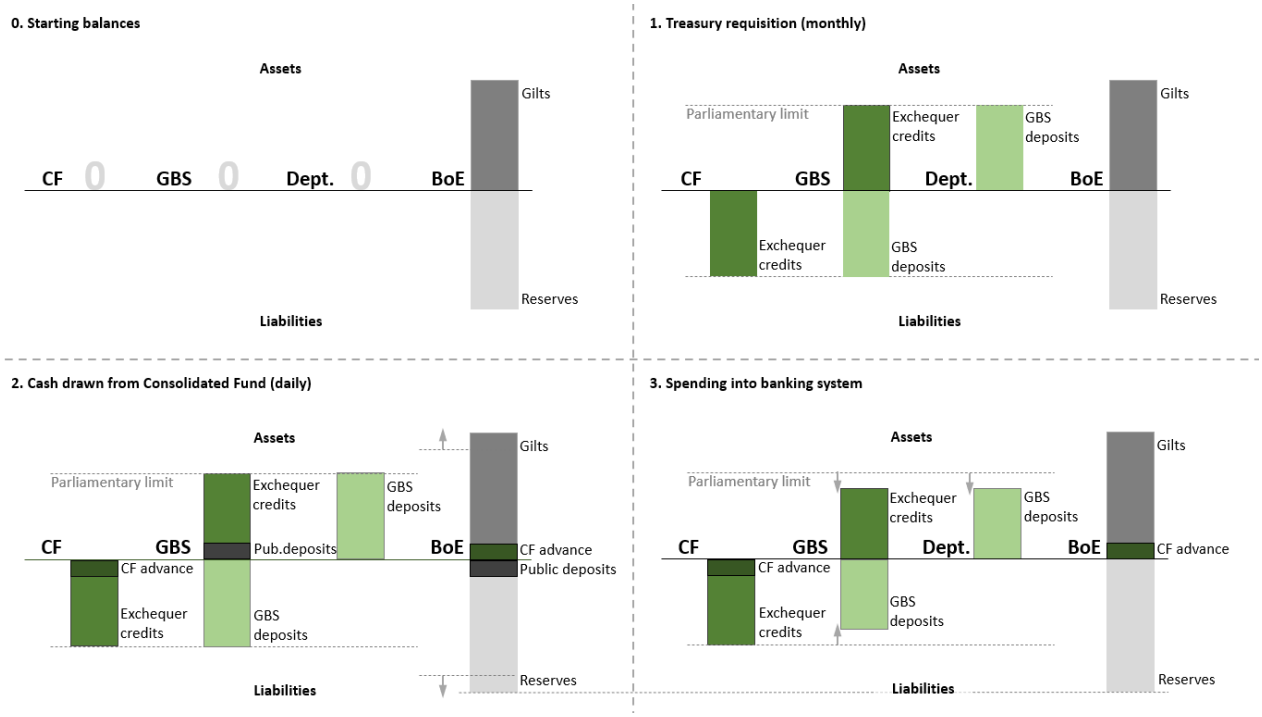

Figure A2: The Exchequer sweep. Note: All balances reflect each entity's position vis-à-vis the Bank of England. GBS: Government Banking Service. HMRC: Her Majesty's Revenue & Customs. CF: Consolidated Fund. NLF: National Loans Fund

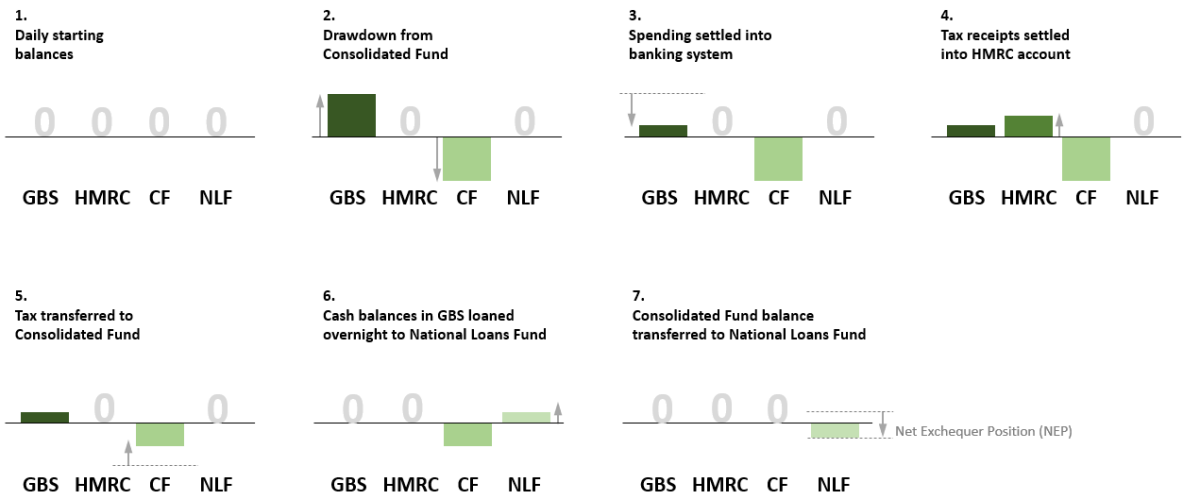

Figure A3: Cash management with daily fiscal deficit and surplus. Note: All balances reflect each entity's position vis-à-vis the Bank of England. CF: Consolidated Fund. NLF: National Loans Fund. DMA: Debt Management Account controlled by the Debt Management Office (DMO).