Bond trading, innovation and evolution: a Bank of England Perspective – speech by Dave Ramsden

Given at Glaziers Hall, AFME Bond Trading, Innovation and Evolution Forum

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Dave Ramsden discusses the Bank of England's evolving role in bond markets, focusing on the Bank's approach to normalising its balance sheet and how it is actively working with the market on the future of settlement infrastructure, including through enhancing the RTGS service.

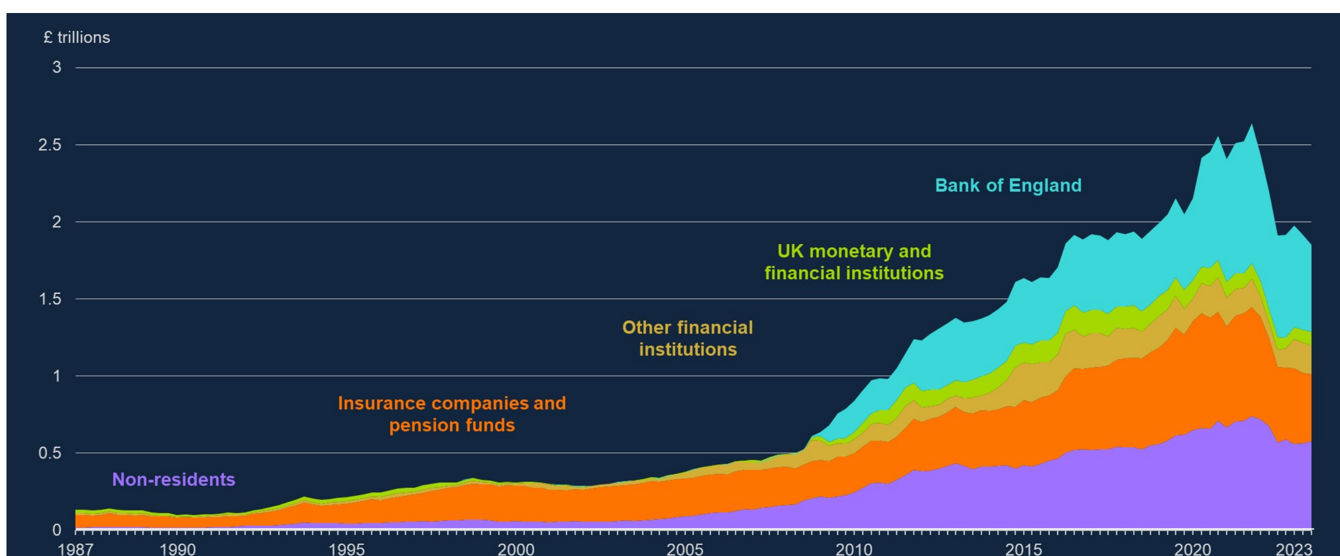
Speech

Introduction

Thank you to AFME for the invitation to speak at this first forum on bond trading, innovation, and evolution. Given my responsibilities at the Bank my remarks will focus on our perspective of the main themes of the forum in terms of our involvement in and engagement with these key sterling wholesale markets in the financial system. Today's conference is well timed to take stock of the evolution of the Bank's trading relationship with a core part of these markets, the market for gilts, through the MPC's quantitative tightening (QT) programme, a key element in the normalisation of our balance sheet.

The amount of gilts held in the Bank's Asset Purchase Facility (APF) on behalf of the MPC reached a peak of £875bn in early 2022 and has since fallen back to £735bn.[1] As a share of outstanding government debt, the share has fallen from 35% to 31%.

Chart 1: Holdings of gilts by sector(a)(b)(c)



Sources: UK Economic Accounts time series, UK Economic Accounts reference tables Quarter 3 (July to September) 2023 and Bank of England statistical reporting. Footnotes: (a) Outstanding

values represent contemporaneous market values, not face value of gilts at issue; (b) Monetary and Financial Institutions includes Bank of England Holdings until 1998 Q2 when the series are split; (c) UK households and private sector non-financial corporations are not visualised as their collective holdings cannot be discerned in this chart.

At the same time, understanding and supporting continuing innovation in the settlement infrastructure on which all financial markets rely, both as an enabler and an encourager, is a key element in delivering monetary and financial stability. And this now too is a good time to update on how the Bank's approach is evolving.

A brief history of the Bank's involvement in bond markets

To frame where we stand today, I'd like to start with some history. The Bank can track its connection to bond markets all the way back to its incorporation in 1694. The Bank came into being with the specific purpose of raising funds for England's war effort against France. To help raise funds, the government created a new joint-stock company, where investors were effectively purchasing government debt to become shareholders in the company. That company was the Bank of England and so began the 330 years, and counting, relationship between the Bank and bond markets.

The Bank's role in, and interaction with, markets has evolved over time. In July 1914, financial markets were shaken by the sudden outbreak of World War One, with a run taking place in both the London money market and the London stock exchange. The Bank stepped in, acting as a 'market maker of last resort' and buying substantial quantities of bills of exchange which resolved the immediate liquidity crisis.[2]

More generally for much of its history the Bank, as the Government's banker, leveraged its market connections to act as the key agent and adviser to the Government on debt management.[3] At the same time as being given operational independence for monetary policy in 1997 responsibility for debt management passed to the newly created Debt Management Office (DMO), though the Bank continued to be the Government's banker. As the earlier chart showed for the twelve years from 1997 to 2009 the Bank's direct involvement with the gilt market, while it continued to be important, was nevertheless limited to the kind of operations described by the Bank official quoted by David Kynaston in his one-volume history of the Bank, "although we have less of a role in gilts, we have quite a portfolio of gilts for our own customers, and we continue operating (for the Exchange Equalisation Account) in the foreign exchange market."[4]

The Bank as a significant holder of government debt

The Global Financial Crisis (GFC) of 2007-9 marked a watershed moment across all financial markets. Amongst other things, its aftermath led to the adoption of Quantitative Easing (QE) in some jurisdictions, which transformed the role of central banks in the bond market, from engaged

observers and occasional traders to the largest participants. Across different jurisdictions, bond purchases aimed to lower long-term interest rates, boost economic activity, and meet the inflation target in the medium term. The 15th anniversary of the MPC's decision to start QE in March 2009 is next week.

Since the GFC, the global economy including the UK has been subject to a sequence of very large and overlapping shocks. Four years ago, we were on the cusp of Covid lockdowns. Two years ago, the Russian invasion of Ukraine began. And around 18 months ago, the Bank of England intervened to protect financial stability, when forced selling by liability-driven investment (LDI) funds led to fire-sale dynamics at the long end of the gilt market.[5]

In response to these shocks, the Bank and MPC have been able to use the balance sheet to protect the economy in support of our mandate for monetary and financial stability. But as the impacts from these shocks dissipate, our balance sheet is changing in response.

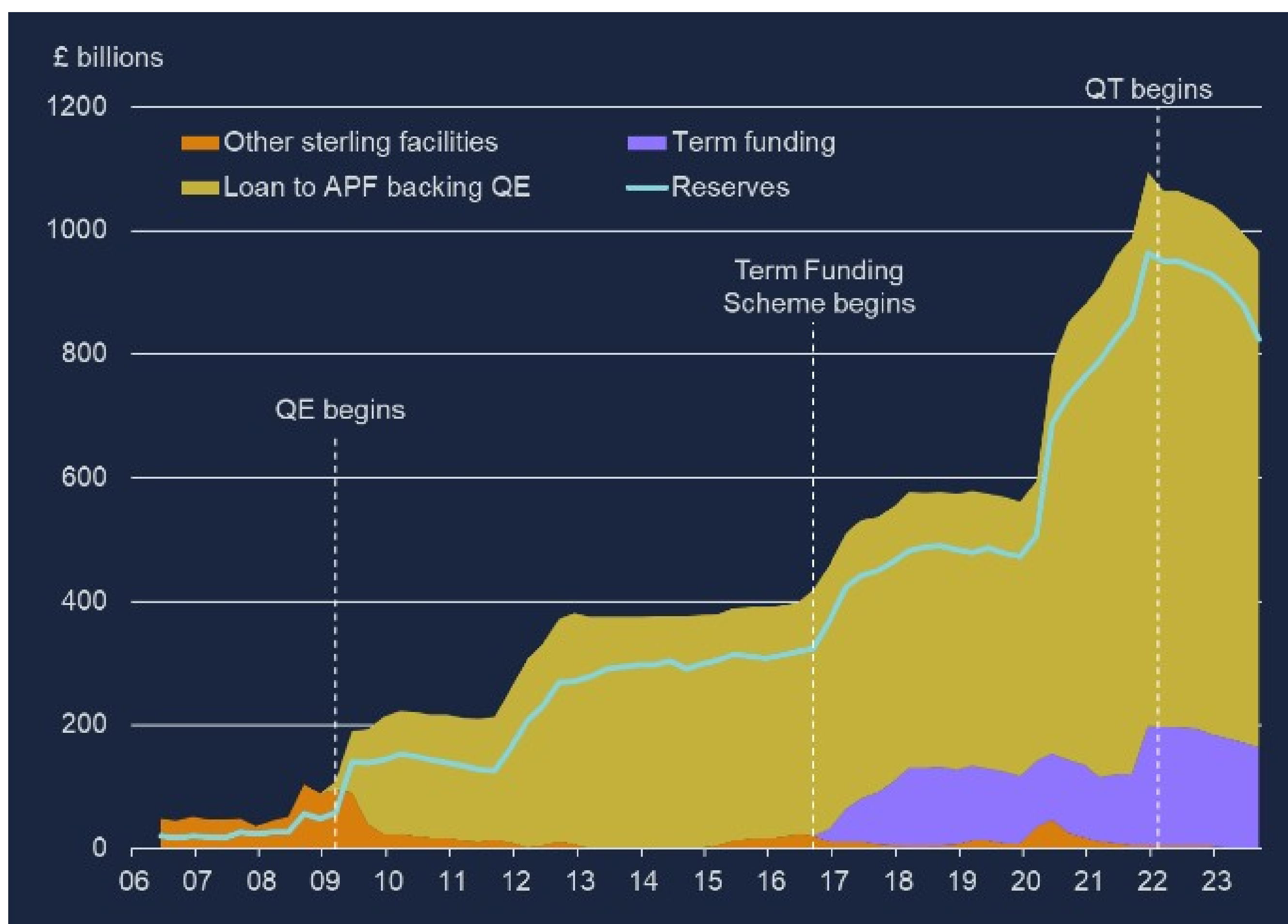
The future 'new normal' balance sheet

Turning to the present day the global and UK economies are moving on from the impacts of those profound external shocks. While many of the economic developments ahead will hopefully look and feel more familiar, in terms of low and stable inflation and growth in activity, the new normal for the Bank's balance sheet is likely to seem less familiar in terms of its size and composition.

Central banks globally are considering issues relating to their future balance sheet. The Bank's balance sheet peaked at over £1 trillion in 2022, as shown in chart 2. As Andrew Bailey noted in a **speech last April**, irrespective of QE, a larger central bank balance sheet would be needed to meet the financial system's demand for reserves and liquidity buffers, and the Bank will, therefore, not shrink its balance sheet to the level it was
pre-GFC. At the moment we do not know precisely where the new normal level of reserves will be, or what the composition of the assets backing those reserves will be.[6]

In the context of today's forum my focus is going to be on two particular features of the normalisation process; first, the MPC's process of quantitative tightening (QT); and second, the unwinding of our Term Funding Scheme with SME incentives (TFSME).

Chart 2: Bank of England reserves supply and backing assets



Source: Bank of England. Coloured areas summarise the Bank's main on-balance sheet sterling facilities. The gap between the sum of those facilities and reserves primarily reflects sterling banknotes. 'Term Funding' includes the Term Funding Scheme (TFS) and the Term Funding Scheme with additional incentives for SMEs but excludes the Special Liquidity Scheme and the Funding for Lending Scheme (which were funded off-balance sheet). To avoid double counting, 'loan to APF backing QE' excludes lending backing the TFS while it was in the APF (pre-2019); prior to 2013 Q3, the series shows the quantity of assets financed by the creation of central bank reserves on a settled basis. 'Other sterling facilities' includes Short-Term Open Market Operations, Long-Term Repos, the Contingent Term Repo Facility, and the Covid Corporate Financing Facility; it excludes the Sterling Bond Portfolio used to fund the Bank.

Quantitative Tightening

QT marks an important shift in our participation in bond markets, as we reduce our balance sheet and return assets, including almost all our portfolio of corporate bonds and an increasing percentage of our portfolio of gilts, to the private sector. The MPC has judged that reducing the size of the APF has the important benefit of reducing the risk of a ratchet upwards in the size of the central bank balance sheet over time, if successive policy cycles encounter the effective lower bound on interest rates. In other words, it's important to normalise our balance sheet when we can to ensure we have sufficient headroom to respond to future shocks.

The MPC has also been clear that QT should operate in the background, with Bank Rate as the active monetary policy tool, and that sales should be gradual, predictable and not disrupt financial markets.

In line with these principles, to assess market developments Bank staff look at a wide range of quantitative indicators, including some based on transaction-level data. The Bank combines this with market intelligence gathered from a broad set of market participants on both the buy and sell sides, to monitor gilt market functioning and liquidity for any sign of disruption. We also stay in close contact with the DMO. Based on our analysis to date, we have not found evidence that our operations are disrupting financial markets, but we remain vigilant.[7] Consistent with its commitment to transparency, the Bank publishes quarterly market notices setting out the schedule of APF auctions for the upcoming quarter. The Bank also, on a quarterly basis, **publishes** a range of scenarios for the unwind of the APF and, given the indemnity for the APF, the associated cash transfers between HM Treasury and the APF.

Our QT auctions are going well, attracting strong demand, as reflected in good cover and pricing for the Bank. As outlined in its **December Market Notice**, the Bank made a technical change to its approach to setting auction sizes across maturity buckets from the start of 2024, to align our approach with the terms in which the MPC thinks about the reduction of the APF. In practical terms, this means that our auction sizes for shorter maturity bonds are now larger than for medium and, in turn, long maturities. This purely operational change in our approach seems to have been received well by the market, as reflected in feedback from market participants, and good participation in the re-sized auctions.

Accountability is important and the MPC and the Bank engage actively with and contribute to the debate about our monetary policy decisions and their implementation. In particular, we welcome the Treasury Committee's recent report into QT and will consider its findings carefully.

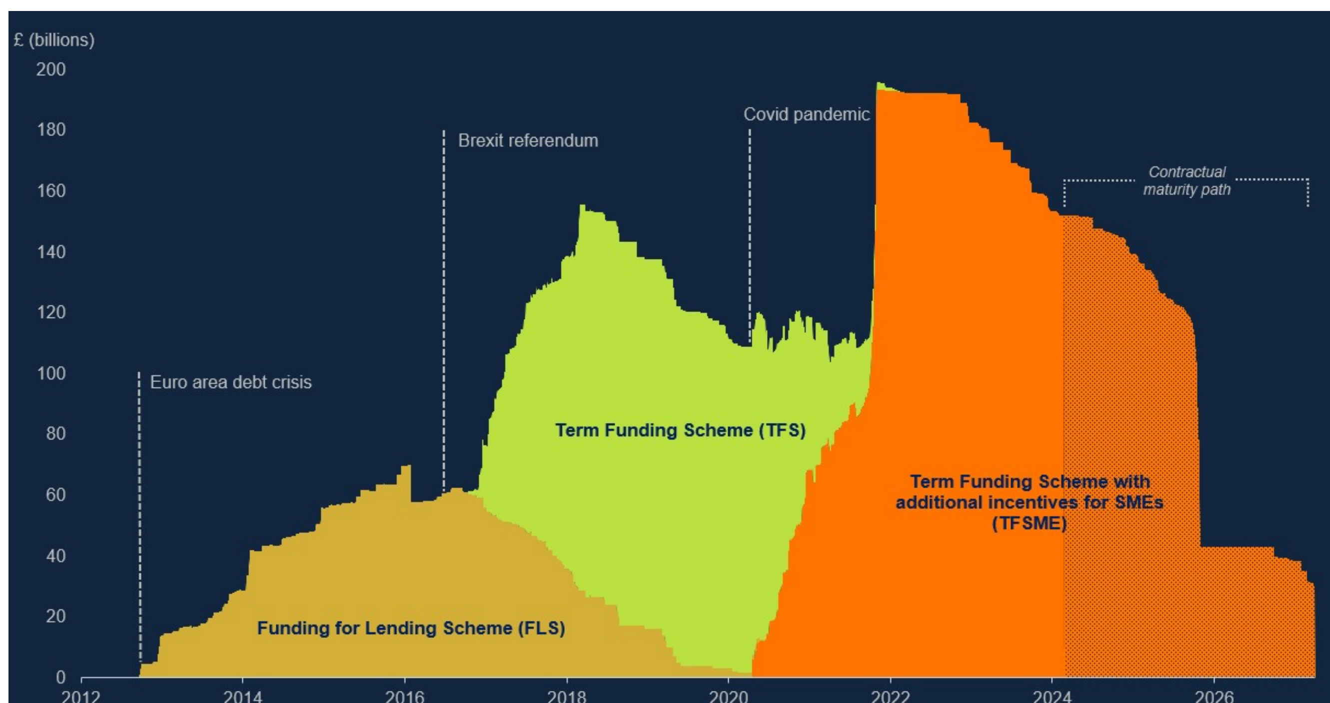
TFSME

Another key element in the normalisation of the Bank's balance sheet is the start of the unwinding of the TFSME. The scheme was launched in 2020 and was the latest iteration of a string of lending schemes which offered cheap term funding to the banking system against a range of collateral.[8] These schemes were launched in response to various shocks, starting from the original Funding for Lending scheme in 2012 around the Eurozone crisis, followed by the TFS in 2016 following the Brexit referendum, and then the TFSME in response to Covid. They each aimed to ensure the pass through of low interest rates and to sustain lending to the real economy, and were each tailored to the specific circumstances faced at the time.

The TFSME is the largest of the schemes; drawings peaked at £193bn in 2021, and most TFSME drawings will mature in 2025 under the contractual terms of the scheme, as shown in chart

3. We can already see that some firms are smoothing their repayment schedule and exit from the scheme by repaying TFSME drawings in advance, and/or pre-funding its refinancing. And we would encourage firms to continue to develop and maintain a stable repayment profile that takes into account how the actions of other firms will affect the cost of this refinancing. We expect that as part of these plans, banks will turn more to the wholesale funding markets than they have in recent years, as private sector markets replace some of the term funding that the schemes provided.

Chart 3: Bank of England term funding schemes



Source: Bank of England

Managing the balance sheet

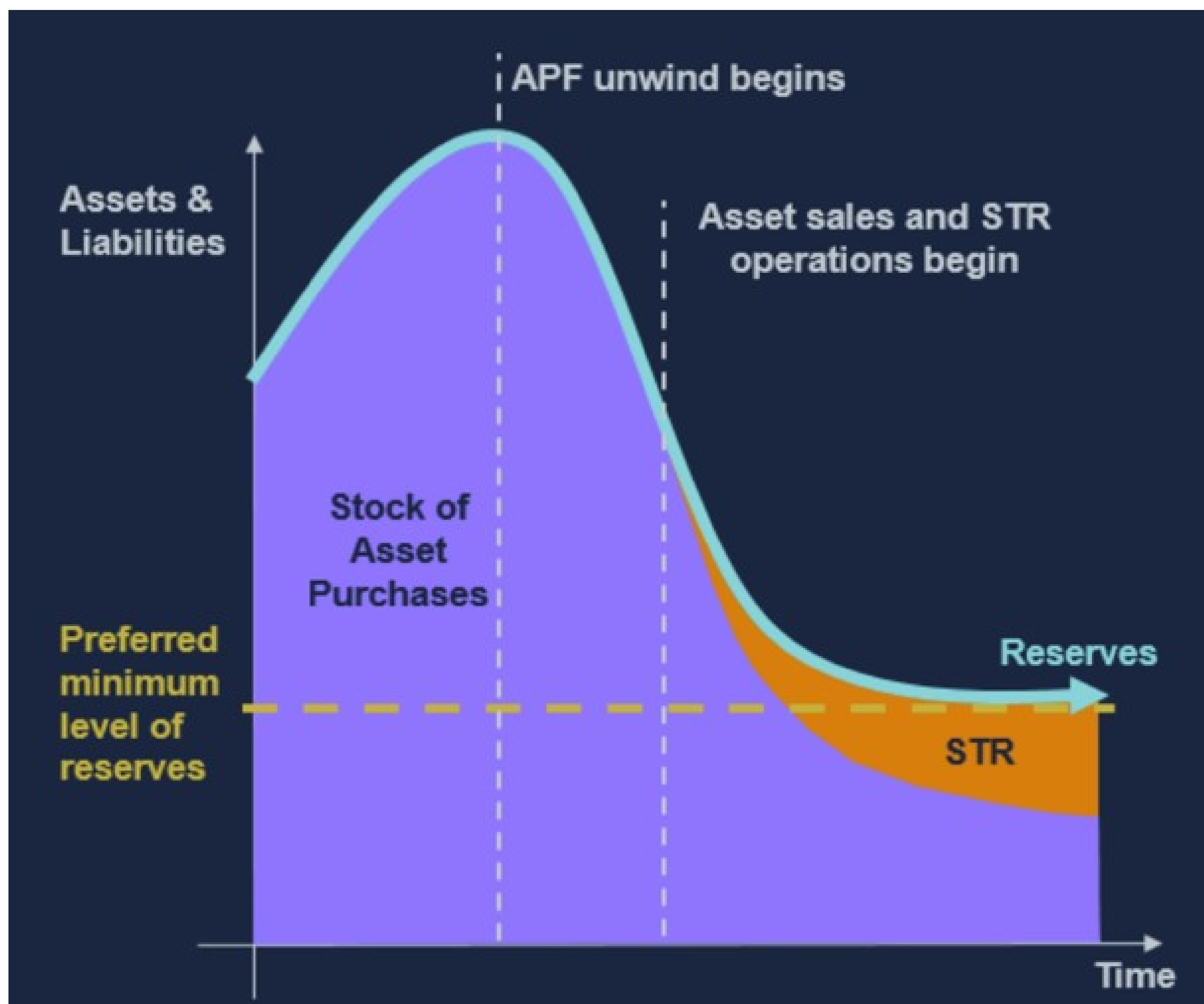
QT and the TFSME unwind mark an important shift in the size and composition of our future balance sheet. But they should not be seen as the Bank stepping away from its appropriate role in financial markets. We have a range of facilities in our Sterling Monetary Framework which allow firms to borrow liquidity in the form of reserves as needed. We encourage usage of these facilities as part of normal liquidity management, and while we would not expect firms to rely solely on our facilities (and we have priced those facilities accordingly), they are also not intended to be used as a last resort.[9] We are, and remain, ‘open for business’.[10]

As our balance sheet reduces to whatever level is the new normal, reserves will fall towards the minimum level of reserves that banks need and want, as shown in chart 4. This aggregate level of reserves demanded by banks for transactional and precautionary liquidity needs forms what we call the Preferred Minimum Range of Reserves (PMRR). At some point during the unwind, the stock of reserves will eventually approach the minimum level needed by banks. At that point,

banks are likely to respond by seeking to borrow reserves in money markets, increasing the rates they are willing to pay to do so, and thereby causing short-term interest rates to rise relative to Bank Rate. If no other actions are taken, this would impair the transmission of monetary policy to the wider economy. So, in 2022 we announced the launch of the Short Term Repo (STR) to supply reserves on demand at Bank Rate against gilt collateral on a weekly basis, to ensure that market interest rates remain aligned with Bank Rate. We expect usage of the full set of our liquidity facilities to rise as the level of reserves in the system falls as QT and TFSME unwind progress.[11]

As already set out, the level of the PMRR and the timing for when it will be reached are both uncertain, and indeed may change over time, as Andrew Bailey flagged in his **Loughborough lecture** earlier in February.

Chart 4: Stylised supply of reserves during APF unwind



One key issue is the appropriate mix of assets that will back these reserves. We will decide this in consultation with relevant stakeholders, including HMT. With that in mind, I want to draw an important distinction between the MPC's reduction of the bonds held in the APF, and the future of the Bank's balance sheet. Our approach to this issue differs from other central banks, notably the Federal Reserve, which aims to maintain its QE portfolio at a level that will back an 'ample' level of

reserves.

The MPC decides on the stock of assets held by the Bank for monetary policy purposes. In line with its policy objectives, it communicated its decision for the pace of QT over the following twelve months, most recently in September 2023. The Bank's facilities for supplying reserves, including STR, are designed to ensure that the MPC can remain focused on monetary policy when deciding on the pace of QT. At the point that reserves reach the minimum desired level, banks will be able to meet their demand for reserves at Bank Rate using the Bank's facilities, stabilising the quantity of reserves and allowing the MPC to decide to continue reducing the stock of assets held in the APF if it wanted to. The decision on the future size and composition of the balance sheet is a separate issue, which we are thinking about carefully. To illustrate the separation, the MPC could unwind the APF fully, if it judged necessary for policy reasons, and the level of the PMRR should not affect this judgement.

The Bank's work to normalise its balance sheet marks another point in our history of evolving with the needs of the economy and of financial markets. Depending on the context there may be step changes in use of our facilities or usage may be steadier over time. But the Bank is committed to providing sufficient reserves to meet its monetary policy and financial stability goals, and expects its facilities, both existing ones and those required by the circumstances of the time, to be used at scale to meet the demand for reserves.

The focus of my remarks has been on the normalisation of the Bank's balance sheet, in terms of the APF, operating in the background in the context of the implications for monetary policy. But I'm conscious that in terms of what has been driving market pricing much of the action, and the key driver for recent movements, has been on what is expected to happen in the foreground, in terms of expectations for Bank Rate.

Let me summarise my position as one of a majority of MPC members who judged that maintaining Bank Rate at 5.25% was warranted at the time of our last announcement on 1 February. The sharp fallback in headline inflation to 4.0% in January, from 10.1% a year ago is undoubtedly encouraging. The restrictive stance of monetary policy increasingly weighed on activity through 2023, and, notwithstanding the ongoing uncertainties with the official data, has led to a loosening in the labour market. I support the more balanced outlook on risks to inflation set out in the MPC's latest forecasts. Although services inflation and wages growth have fallen by somewhat more in recent months than we had expected last autumn, key indicators of inflation persistence remain elevated. In terms of my thinking about the future, I am looking for more evidence about how entrenched this persistence will be and therefore about how long the current level of Bank Rate will need to be maintained.

Innovations in Payments and Settlement

Now, I'd like to shift my focus from normalisation of our balance sheet to innovation. I started my

remarks today by highlighting how understanding and supporting innovation in the settlement infrastructure on which all financial markets rely is a key element in delivering monetary and financial stability.

Our focus needs to be on understanding the risks and opportunities that innovation poses, and what it means for how we meet our objectives. This is particularly important in these core markets, where bond issuance and trading volumes continue to be significant. Indeed, I can draw on **AFME's own government bond data report** to highlight that EU Member States and the UK issued EUR 850 bn in bonds and bills in Q3 2023 alone, with average daily trading volumes consistently hovering around EUR 100bn through the first three quarters of 2023.

Daily clearing and settlement in the City of London dates back to around 1770, when bank clerks would meet at the Five Bells pub to exchange cheques in one place and settle balances arising in cash. The first Banker's Clearing House was built in Lombard Street in 1833, and settlement in cash was replaced by settlement across accounts held at the Bank of England in 1854. The current institutional arrangement for securities settlement came into being in 1996, with the launch of the CREST settlement system. This is underpinned by the Real-Time Gross Settlement service (RTGS), which is also the means through which we operationalise the Bank's balance sheet. Reserves are held in reserve accounts under the Sterling Monetary Framework within RTGS.

In our recent history the provision of the essential services supporting settlement of UK securities has been in CREST, where the Bank continues to play a central role. **In 2023 we settled on average £342bn per day in CREST transactions**. This is facilitated by the Delivery versus Payment (DvP) link with RTGS first established in 2001, enabling transactions to settle in a series of cycles throughout the day. This model eliminates settlement risk as transactions are settled in central bank money, the ultimate risk-free asset, against segregated liquidity, with finality in real time.

So, the state of the world is currently steady, but just because something has been steady and constant doesn't mean we're not looking for ways to evolve. Indeed, I'd like to describe two different ways in which we're evolving in the payments and settlement space: first, we're working with the market, as an observer, encourager and enabler of innovation; and second, we're making specific enhancements to RTGS, to provide a platform for innovation.

Monitoring, encouraging, and enabling innovation

There is a wide range of new innovative trends and initiatives that have the potential to materially enhance the functioning of wholesale markets. This includes both specifically targeted work such as the Accelerated Settlement Taskforce (which is exploring the case for shorter, T+1, settlement cycles), as well as broader adoption of new technologies such as Distributed Ledger Technology (DLT), programmability and tokenisation, to name a few. There are myriad potential applications of these technologies but in broad terms benefits could include improved market liquidity, faster

settlement, reduced settlement risk, scope for greater automation and integration of payments into other processes.

A wide range of new solutions using these new technologies are emerging in the market at various stages of development from proof-of-concept to market deployment. In wholesale financial transactions, applications of these technologies could enable consolidation of trading, settlement and custody of assets, which could increase efficiency and reduce intermediaries, while making trading and settlement (near) instantaneous.

These technologies present a number of potential benefits and widespread adoption could have implications for the financial system. A particular focus of the Bank in 2024 is to think holistically about the potential impact of these changes for monetary and financial stability and how they might affect the Bank's provision of retail and wholesale central bank money, commercial banks' provision of deposits, and non-banks' issuance of stablecoins for payments.

Taking a step beyond our monitoring efforts, we are also actively finding ways of encouraging and enabling innovation. One such example is our work on the Digital Securities Sandbox.

The sandbox will enable the private sector to set up real-world trading venues and settlement systems using new technologies such as DLT – to explore ideas like collapsing trading and settlement into an instantaneous smart contract. The sandbox will amend regulations to remove the barriers to using these new technologies, with limits on activity to allow markets and regulators to gain practical insights into their potential benefits, while enabling that innovation to take place safely. The Bank and the FCA will shortly consult on the rules and procedures for the sandbox, and it will open for applications later this year.

Enhancements to RTGS

The most significant piece of work we're currently undertaking in this space is our work to enhance the RTGS service. **As recently highlighted by my colleague Victoria Cleland**, the Bank is making enhancements to RTGS to catalyse industry innovation in several key areas. Some of these benefits may apply principally to payments, settlement, or both as illustrated by three examples:

- In 2021 we introduced a new 'omnibus account' model in RTGS, which allows an operator of a payment system (PSO) to pool participant funds in RTGS to back transactions in their own system. This allows the PSO to offer innovative payment services (including those using DLT) while benefitting from the security of central bank money settlement. **Fnality has become the first omnibus account holder**, offering a new type of Financial Market Infrastructure underpinned by DLT.
- In June 2023 we successfully migrated CHAPS payments to ISO 20022. As an established international financial messaging standard, ISO 20022 has the potential to bring significant

benefits to the UK payments industry including greater resilience, interoperability, an improved user experience and enabling innovation through provision of enhanced data. The greatest benefits of ISO 20022 will, however, only be realised if industry embraces it and uses the richer and higher-quality data that it offers.

- Our next step is the transition to a new core settlement engine for RTGS, which will offer enhanced capacity, the ability to accept CHAPS payments up to 10 days in advance and enhanced liquidity-saving mechanisms. It will also be able to accommodate a substantially higher number of account holders, offer streamlined and simplified onboarding and support greater functionality through a new user interface for RTGS and Application Programming Interfaces (APIs).

Facilitating innovation and competition is a key priority for the RTGS Future Roadmap beyond 2024. To this end we are undertaking work to develop features to enable use of new technologies and business models. A key example in the context of the bond market is synchronisation, whereby external ledgers – including those for securities – could connect to RTGS to synchronise transactions. This would enable ‘atomic settlement’, whereby the transfer of two assets is linked in a way that one asset moves if and only if the other asset also moves. This could modernise for the digital world the DvP concept that was pioneered with the RTGS-CREST link, and extend it to a wide range of markets.

Underpinning all these enhancements is resilience, which is absolutely central to our provision of the RTGS service and will remain so. The new core RTGS settlement engine will already have even more enhanced resilience built in to ensure prompt and secure settlement in a world of new and emerging threats. As part of the future roadmap for RTGS, we are exploring how to enhance resilience further by introducing an additional channel to send and receive payments to RTGS, offering participants greater choice in how they connect to our settlement service. Additional channels to RTGS would also help to reduce market reliance on any single third party for payments messaging.

Overall, we believe that the package of enhancements that we are developing can provide the conditions for innovative new business models to emerge. But this vision can only become a reality if industry players join us on this journey, both through co-creation and effective co-ordination.

Co-creation with stakeholders will ensure that we benefit from industry steers on the development of the individual features, as well as the strategic shaping of the RTGS Future Roadmap. Industry input is essential as we continue to shape the future of RTGS to best meet the needs of the UK economy. Drawing on our ongoing co-creation work, I would like to highlight our recently published discussion papers **on access to RTGS accounts for settlement** and **exploring longer operating hours for RTGS**. While we have not made any decision on whether to move to longer operating hours, an extension could serve as a catalyst for further innovation, help to reduce

settlement and credit risk and enhance domestic and cross-border payments. I would encourage everyone with an interest to respond to both papers.

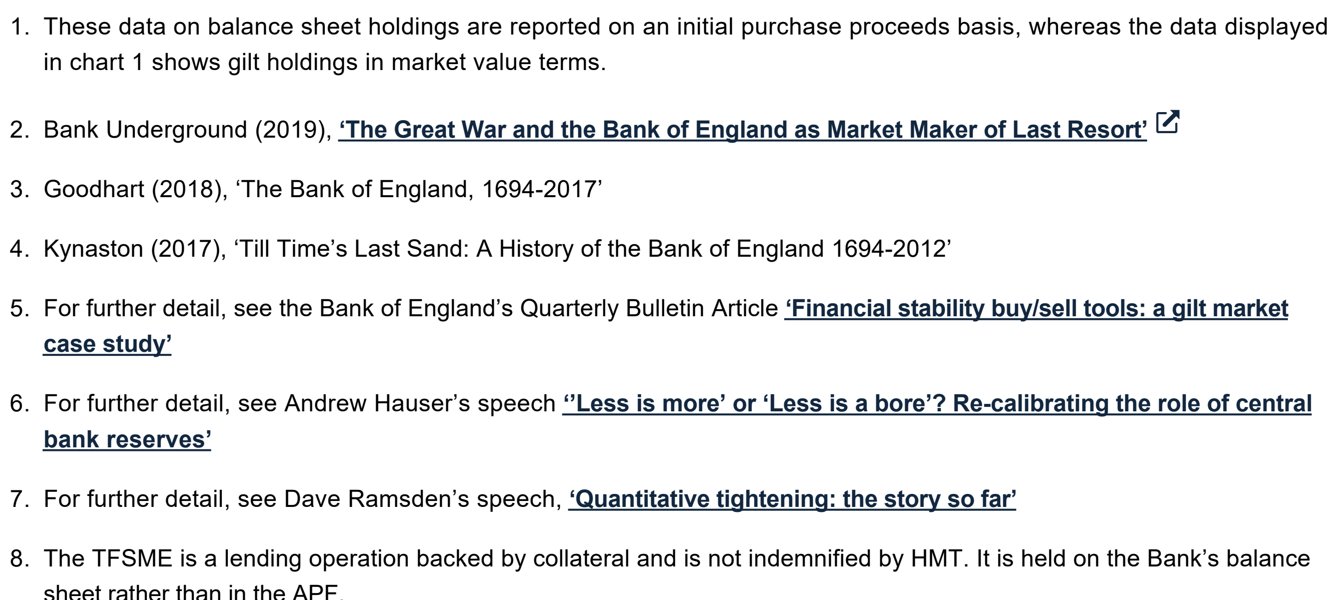
Finally, our achievements to date have only been possible thanks to industry co-ordination to adopt standards and to invest in necessary technological improvements. As we look ahead to opportunities to enhance and improve settlement practices in the bond market, a similar level of co-ordination and collaboration between industry and the Bank will be essential.

Conclusion

The purpose of today's forum is to discuss innovation and evolution in bond markets. I've hopefully given you a sense of how the Bank is developing its approach, much in the same way that it has been evolving to the needs of the markets it operates in for the last 330 years. On the one hand we're normalising our balance sheet, transitioning to a new normal that in terms of our participation will frame the environment for further innovation. And on the other, we're actively working with the market to utilise the significant technological developments we're seeing within the settlement infrastructure we operate.

We are mindful that the shocks in recent years have shown that we cannot take stability for granted, and so one core principle underpinning all our work to innovate and evolve, as well as in terms of our direct participation in markets, is the objective to maintain monetary and financial stability for the good of the people of the United Kingdom.

I would like to thank Johnny Elliot, Richard Lewis, Ed Kent and Rachita Syal for their help in drafting this speech, as well as many other Bank colleagues for their helpful comments and suggestions.



1. These data on balance sheet holdings are reported on an initial purchase proceeds basis, whereas the data displayed in chart 1 shows gilt holdings in market value terms.
2. Bank Underground (2019), **'The Great War and the Bank of England as Market Maker of Last Resort'**
3. Goodhart (2018), 'The Bank of England, 1694-2017'
4. Kynaston (2017), 'Till Time's Last Sand: A History of the Bank of England 1694-2012'
5. For further detail, see the Bank of England's Quarterly Bulletin Article **'Financial stability buy/sell tools: a gilt market case study'**
6. For further detail, see Andrew Hauser's speech **''Less is more' or 'Less is a bore'? Re-calibrating the role of central bank reserves'**
7. For further detail, see Dave Ramsden's speech, **'Quantitative tightening: the story so far'**
8. The TFSME is a lending operation backed by collateral and is not indemnified by HMT. It is held on the Bank's balance sheet rather than in the APF.

9. The Bank is also developing the liquidity tools it has for supporting financial stability. This includes building a new backstop facility capable of lending to non-bank financial institutions (NBFIs) against high quality assets, which will be used to address dysfunction in core UK financial markets that is severe enough to threaten financial stability. The development of this lending facility will reduce the need for the Bank to support financial stability in future by undertaking financial stability asset purchases, as it did during the 2022 LDI episode.

10. For more information on trends in bank funding and liquidity, see Box D of the **December 2023 Financial Stability Report**.

11. For more detail, see **'Explanatory Note: Managing the operational implications of APF unwind for asset sales, control of short-term market interest rates and the Bank of England's balance sheet'**

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