

Bank of England

Rt Hon Mel Stride MP
Chair of the Treasury Committee
House of Commons
London
SW1A 0AA

Sir Jon Cunliffe
Deputy Governor, Financial Stability
Bank of England

5 October 2022

Dear Mel,

I am responding on behalf of the Bank in relation to your request on 3 October for further information on the operation launched on Wednesday 28 September, designed to address dysfunction in the gilt market. As you note, this was the first time the Bank had intervened in the gilt market in pursuit of its statutory financial stability objective. The Bank is conscious of the importance of its accountability to Parliament and welcomes the opportunity to answer your questions on this subject.

I trust that you and the Committee will find the information in this letter of assistance in addressing your questions. We stand ready to answer any further queries you may have in relation to this operation, including providing a further update in due course.

The Bank has also received a letter from the House of Lords Economic Affairs Committee and Industry and Regulatory Committee dated 3 October, which also asked questions about the Bank's operation. The Governor will share this letter with them.

The Bank's gilt market operation

Against the backdrop of an unprecedented repricing in UK assets, the Bank announced a temporary and targeted intervention on Wednesday 28 September to restore market functioning in long-dated government bonds and reduce risks from contagion to credit conditions for UK households and businesses. The announcement was for temporary purchases of long-dated UK government bonds, starting that day. The announcement

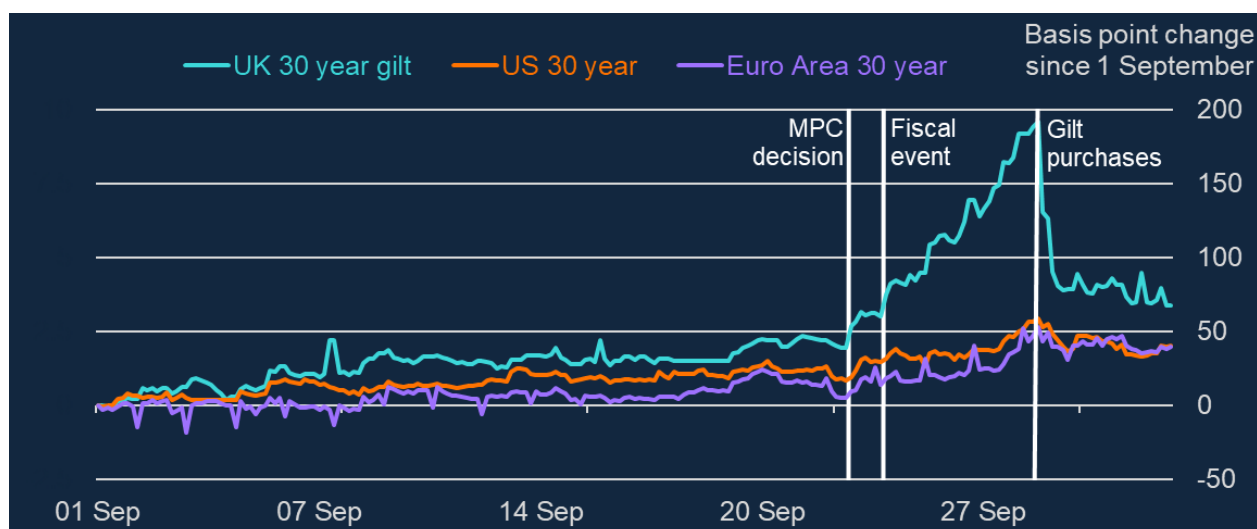


was clear that purchases were strictly time-limited, and were announced with the intention of mitigating a specific risk in the long-dated government bond (gilt) market, which I will set out in further detail in this letter. The Market Notice on 28 September set out that auctions would be conducted each weekday from that date until 14 October.

Background to the Bank's intervention

Bank staff closely monitor developments in core financial markets. The FPC noted in its July Financial Stability Report that the worsening global economic outlook had caused markets to be volatile in recent months. Since July, global inflationary pressures have intensified further. Global financial conditions have also tightened further, in part as central banks in major advanced economies have continued to tighten monetary policy and, reflecting these developments, financial and energy markets have remained volatile.

Figure 1: Cumulative change in long-term government bond yields since 1 September



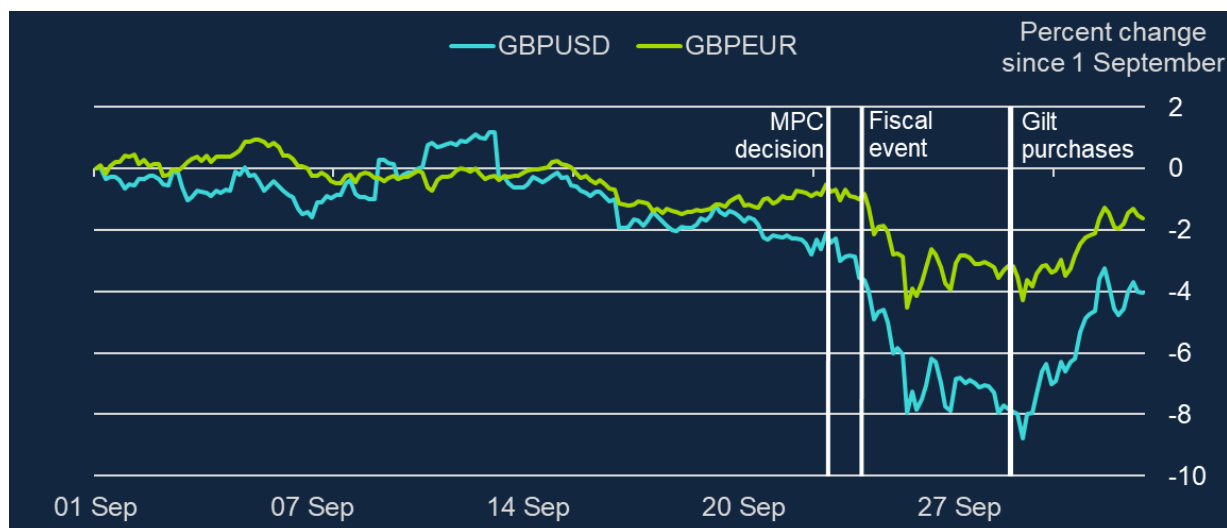
Source: Bloomberg, Bank calculations

On Thursday 22 September, the Monetary Policy Committee (MPC) announced its September monetary policy decision. Sterling was broadly stable and long-term gilt yields rose by around 20 basis points that day.

On Friday 23 September, the Chancellor announced the Government's growth plan. Bank staff undertook regular reporting on pricing and liquidity in core financial markets. Sterling fell by around 4% in US dollar terms and around 2% in Euro terms. Long-term gilt yields rose by 30 basis points over the course of the day. Liquidity conditions were very poor, and market intelligence calls identified the first concerns from liability-driven investment (LDI) fund managers about the implications of market developments, should they persist.

Over the following weekend, regular reporting continued and the Bank's Executive discussed the continuing market reaction. On the evening of Sunday 25 September, when Asian markets opened, it became apparent that sterling was falling further and there was a risk that gilt yields might also continue to rise on Monday morning.

Figure 2: Cumulative change in exchange rates since 1 September



Source: Bloomberg, Bank calculations

On Monday 26 September, as highlighted in a published statement from the Governor, the Bank continued to monitor developments very closely in light of the significant repricing. Long-term gilt yields continued their sharp move upwards. The move was particularly pronounced for 30 year gilt yields, which rose by around 50 basis points, leaving them more than 80 basis points higher than at the start of the day on Friday 23 September. Liquidity remained very poor. Through the day and into the evening, the Bank received market intelligence of increasing severity from a range of market participants, and in particular from LDI fund managers, reporting that conditions in core markets, should they continue to worsen, would force them to sell large quantities of long-term gilts in an increasingly illiquid market. Taken at face value, this market intelligence would have implied additional long-term gilt sales of at least £50 billion in a short space of time, as compared to recent average market trading volumes of just £12 billion per day in these maturity sectors.

On the morning of Tuesday 27 September there was a 20 basis points fall in 30 year gilt yields. The Bank received reports that the level of yields that was prevailing that morning, if sustained, might allow for a somewhat more orderly liquidation of long-term gilts by LDI fund managers than had been reported the evening before. The Bank Executive convened a meeting to brief the Financial Policy Committee (FPC) that afternoon, with a view to the material risks to UK financial stability. The improved conditions of the morning reversed as the day progressed and by that evening 30 year gilt yields had risen by 67

basis points compared to that morning, worsening the situation materially. The Bank was informed by a number of LDI fund managers that, at the prevailing yields, multiple LDI funds were likely to fall into negative net asset value. As a result, it was likely that these funds would have to begin the process of winding up the following morning. In that eventuality, a large quantity of gilts, held as collateral by banks that had lent to these LDI funds, was likely to be sold on the market, driving a potentially self-reinforcing spiral and threatening severe disruption of core funding markets and consequent widespread financial instability.

Bank staff worked overnight on Tuesday 27 September to design an intervention to address the problem, in close communication with HM Treasury staff on the options available. The FPC and MPC were engaged the next morning (see section below on Bank governance in relation to the operation). HM Treasury informed the Bank that it would indemnify the operation. The Bank's intervention was announced late morning on Wednesday 28 September. This led to a more than 100 basis point fall in 30 year gilt yields that day.

Liability-driven investment (LDI)

LDI is an investment approach used by defined benefit (DB) pension funds to help ensure that the value of their assets (i.e. their investments) moves more in line with the value of their liabilities (i.e. the DB pensions they have promised to pay in the future). The approach is intended to achieve a smoother, more certain path to fully funded status. The closest match for the risks around the value of the liabilities is long-term gilts, particularly those linked to inflation.

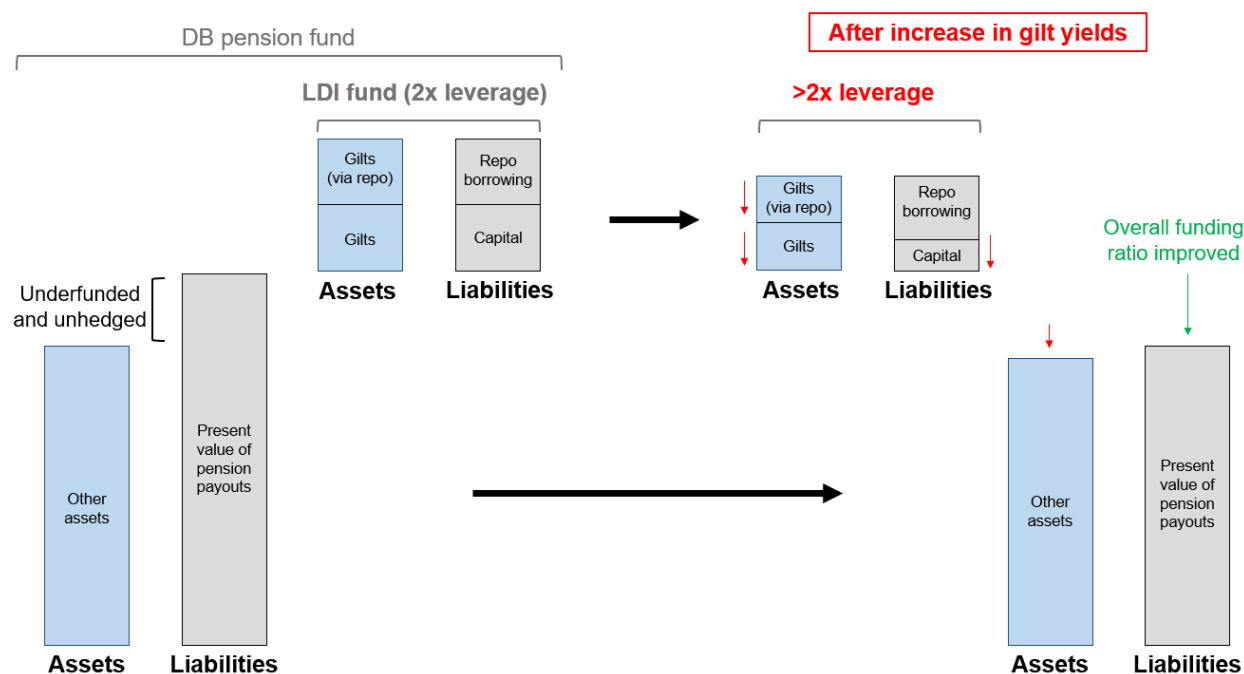
LDI strategies have been employed for many years, and there is currently over £1 trillion invested in them in the UK. Large pension funds run these strategies themselves or have their own segregated accounts with an asset manager. Small pension funds invest alongside other pension funds in 'pooled' LDI funds run by asset managers. Many pooled LDI funds have large numbers of DB pension fund investors.

LDI strategies enable DB pension funds to use leverage (i.e. to borrow) to increase their exposure to long-term gilts, while also holding riskier and higher-yielding assets such as equities in order to boost their returns. The LDI funds maintain a cushion between the value of their assets and liabilities, intended to absorb any losses on the gilts. If losses exceed this cushion, the DB pension fund investor is asked to provide additional funds to increase it, a process known as rebalancing. This can be a more difficult process for pooled LDI funds, in part because they manage investment from a large number of small and medium sized DB pension funds.

Diagram 1 gives a stylised example of how the gilt market dynamics last week could have affected a DB pension fund that was investing in an LDI fund. In this illustrative and

simplified example, the left hand side of the diagram shows that the scheme is underfunded (in deficit) before any change in gilt yields, with the value of its assets lower than the value of its liabilities. More than 20% of UK DB pension funds were in deficit in August 2022 and more than 40% were a year earlier. In this example, the fund is holding growth assets to boost returns and has also invested in an LDI fund to increase holdings of long-term gilts, funded by repo borrowing at 2 times leverage (i.e. half of the holding of gilts in the LDI fund is funded by borrowing). The cushion (labelled ‘capital’) is half the size of the gilt holdings.

Diagram 1: Illustrative change in assets and liabilities for a DB pension fund using LDI to hedge its liabilities, with impact of an increase in long-term gilt yields



Source: Bank of England

The right hand side of the diagram shows what would happen should gilt yields rise (and gilt prices fall). The value of the gilts that are held in the LDI fund falls, in this example by around 30%. This severely erodes the cushion in the LDI fund. If gilt prices fell further, it would risk eroding the entire cushion, leaving the LDI fund with zero net asset value and leading to default on the repo borrowing. This would mean the bank counterparty would take ownership of the gilts. It should be noted that in this example, the DB pension fund might be better off overall as a result of the increase in gilt yields. This is because the market value of its equity and shorter-term bond holdings (‘other assets’) would not fall by as much as the present value of its pension liabilities, as the latter are more sensitive to long-term market interest rates. The erosion of the cushion of the LDI fund would lead

the LDI fund either to sell gilts to reduce its leverage or to ask the DB pension fund investors to provide additional funds.

In practice, the move in gilt yields last week threatened to exceed the size of the cushion for many LDI funds, requiring them to either sell gilts into a falling market or to ask DB pension plan trustees to raise funds to provide more capital.

The financial stability motivation for intervening

Financial markets globally have been volatile over recent months, with notable rises in government bond yields, large moves in exchange rates, and falls in risky asset prices. Overall, the adjustment in market prices has been consistent with tighter monetary policy globally and the deterioration in the economic outlook. While the repricing has been largely orderly so far, pressures have been observed in parts of the financial system, including challenging liquidity conditions across some energy and fixed income markets, but without a widespread crystallisation of financial stability risks.

As set out above, in the period immediately prior to Wednesday 28 September, the speed and scale of the moves in gilt yields was unprecedented. That period saw two daily increases in 30 year gilt yields of more than 35 basis points. The biggest daily increase before last week in the data that goes back to 2000 was 29 basis points. Measured over a four day period, the increase in 30 year gilt yields was more than twice as large as the largest move since 2000, which occurred during the ‘dash for cash’ in 2020. It was more than three times larger than any other historical move. Gilt market functioning was severely stretched, particularly at the long end of the curve (20 year maturities and above). These moves in gilt yields placed particular pressure on LDI funds.

The rise in yields caused the net asset value of LDI funds to fall significantly and their leverage to increase significantly, as explained above. The fall in net asset value was reflected in margin calls, which the LDI funds had to meet.¹ In these circumstances the LDI funds had urgently to rebalance, either by selling gilts into an illiquid market or by asking their DB pension fund investors to provide more capital. In some LDI funds, the speed and scale of the moves in yield and consequent decline in net asset value far outpaced the ability of the DB pension fund investors to provide new capital in the time available. This was a particular problem for pooled LDI funds, given the large number of smaller investors.

Where capital was not incoming quickly enough, pooled LDI funds would have been forced to deleverage by selling gilts at levels far exceeding the normal daily level of gilt trading into an illiquid market. (Some funds had already tried to sell gilts and failed to do so.) With the gilt market unable to absorb further large sales, had large sales been

¹ Margin requirements are a vital part of the financial system to manage counterparty credit risk.

attempted yields would have been pushed even higher, forcing further gilt sales in an attempt to maintain solvency. This would have led to a self-reinforcing spiral of price falls and further pressure to sell gilts.

Had the Bank not intervened on Wednesday 28 September, a large number of pooled LDI funds would have been left with negative net asset value and would have faced shortfalls in the collateral posted to banking counterparties. DB pension fund investments in those pooled LDI funds would be worth zero. If the LDI funds defaulted, the large quantity of gilts held as collateral by the banks that had lent to these funds would then potentially be sold on the market. This would amplify the stresses on the financial system and further impair the gilt market, which would in turn have forced other institutions to sell assets to raise liquidity and add to self-reinforcing falls in asset prices. This would have resulted in even more severely disrupted core gilt market functioning, which in turn may have led to an excessive and sudden tightening of financing conditions for the real economy.

The Bank acted to restore core market functioning and reduce the material risks to financial stability and contagion to credit conditions for UK households and businesses. The Bank's action is in line with its statutory financial stability objective to protect and enhance UK financial stability. The Bank's operation is intended to give the affected LDI funds time to put their positions on a sustainable footing, increasing their resilience to future stresses.

What is the Bank doing now?

In line with the Bank's statutory financial stability objective, the purpose of this operation is to act as a backstop to restore orderly market conditions and reduce any risks from contagion to credit conditions for UK households and businesses while the appropriate adjustment takes place. The operation is fully indemnified by HM Treasury.

The Market Notice on 28 September set out that auctions would be conducted each weekday from that date until 14 October. The duration of the operation is intended to give LDI funds time to build the necessary resilience, as noted earlier. As explained above, the LDI funds either need to inject capital from their DB pension fund investors or sell assets to reduce their leverage.

The Bank's announcement on Wednesday 28 September stated that purchases would be carried out at whatever scale is needed to restore market functioning. Given prevailing turnover, it was judged that £5 billion a day was likely to be more than sufficient, providing a credible backstop capacity. The Bank keeps the parameters of the auctions under review in light of prevailing market conditions and the calibration of the tool as a backstop. In the event, partly reflecting the credibility of the backstop, actual purchases have been well within the £5 billion limit. In the six operations

conducted so far, the Bank has purchased a total of £3.7 billion out of £10.4 billion offered. The Bank is studying market conditions and patterns of demand and will continue to use reserve pricing in order to ensure the backstop objective of the tool is delivered.

Once the purchase programme is complete, the operation will be unwound in a smooth and orderly fashion once risks to market functioning are judged by the Bank to have subsided. The approach to unwind will depend, among other things, on the scale of actual purchases, the market conditions during those purchases and the market conditions when the purchases end.

Previous work identifying and monitoring risks from non-bank leverage

The FPC has previously identified underlying vulnerabilities in the system of market-based finance, a number of which were exposed in the ‘dash for cash’ episode in March 2020². The Bank and the FPC strongly support and engage with the important programme of domestic and international work to understand and, where necessary, address those vulnerabilities.

The FPC conducted an assessment of the risks from leverage in the non-bank financial system in 2018, and highlighted the need to monitor risks associated with the use of leverage by LDI funds.³ Whilst the PRA regulates bank counterparties of LDI funds, the Bank does not directly regulate pension schemes, LDI managers or LDI funds. Pension schemes and LDI managers are regulated by The Pensions Regulator (TPR) and the Financial Conduct Authority (FCA). LDI funds themselves are typically based outside the UK. In this context, given our financial stability mandate, and as stated in the FPC’s November 2018 Financial Stability Report, the Bank has worked with other domestic regulators – including TPR and the FCA – on enhancing monitoring of the risks. That included working with TPR on a survey of DB pension schemes in 2019, and prompting work to improve DB pension liquidity risk management. Given that LDI funds are largely not based in the UK, this also underlines the importance of work on this topic being pursued internationally.

It is important that we ensure that non-banks, particularly those that use leverage, are resilient to shocks. However, it should also be recognised that the scale and speed of repricing leading up to Wednesday 28 September far exceeded historical moves, and therefore exceeded price moves that are likely to have been part of risk management practices or regulatory stress tests.

² See [The role of non-bank financial intermediaries in the ‘dash for cash’ in sterling markets](#)

³ See [November 2018 Financial Stability Report](#)

The 30 year nominal gilt yield rose by 160 basis points in just a few days, having only had a yield of around 1.2% at the start of the year. On Wednesday 28 September the intraday range of the yield on 30 year gilts of 127 basis points was higher than the annual range for 30 year gilts in all but 4 of the last 27 years. In the 2018 assessment noted above, the FPC assessed the capacity of the biggest derivatives users among UK pension schemes to cover the posting of variation margin calls on OTC interest rate derivatives from up to a 100 basis point instantaneous increases in rates across all maturities and in all currencies. Other tests and risk management practices have similarly assumed a maximum of a 100 basis point move in such a short time period. As mentioned earlier, the biggest daily increase in long yields in recorded history before last week was 29 basis points (and the biggest daily fall was 30 basis points).

There has been significant progress, both domestically and internationally, on the regulation and monitoring of the non-bank sector in recent years. Much of this has been led by the Financial Stability Board, which set out its analysis of risks relating to non-banks and a program of work last year and is due to report on next steps in November.⁴ Through the work of the FPC and the Bank more widely, as well as that of the FCA, the UK has been actively engaging with this programme. This episode underlines the necessity of this work leading to effective policy outcomes.

Bank governance in relation to the operation

Although the operation was launched on an urgent and expedited basis, the Bank sought to follow its usual governance arrangements to the fullest extent possible.

As one would expect for an operation of this kind, and in line with the Bank's governance, the Bank's Executive took the necessary decisions on the planning, design and implementation of the operation, which was taken in pursuit of the Bank's statutory financial stability objective to protect and enhance the UK financial system.⁵

The FPC was engaged ahead of its launch, recognising the risks to UK financial stability from dysfunction in the gilt market. The FPC recommended that the Bank take action, and welcomed the Bank's plans for temporary and targeted purchases in the gilt market on financial stability grounds at an urgent pace.

⁴ Latest progress was set out in the following Financial Stability Board report in November 2021:

<https://www.fsb.org/wp-content/uploads/P011121.pdf>

⁵ Section 2A of the Bank of England Act 1998.

The MPC was also informed of the issues in the gilt market and briefed in advance of the operation, including its financial stability rationale and the temporary and targeted nature of the purchases.⁶

As the operation was fully indemnified by HM Treasury, there was also coordination with the Chancellor and senior Treasury officials to ensure that this was in place ahead of the announcement of the operation.⁷

Implications for monetary policy

The Bank's announcement on Wednesday 28 September was made in pursuit of its statutory financial stability objective.⁸ The resulting operations in the gilt market are designed to be temporary and targeted. As a result, these operations are not intended to create central bank money on a lasting basis, nor are they designed to cap or control long-term interest rates. Their intention is instead to ensure that those yields are not distorted by severe liquidity strains in financial markets. As such, they should not shift the underlying monetary trends in the economy, which ultimately pin down developments in inflation, and so they are not monetary policy operations.

Within the Bank's announcement on Wednesday 28 September, the Bank's Executive also announced that, in light of market conditions, it had postponed the beginning of gilt sales that were due to commence in the week beginning 3 October under the MPC's programme to reduce holdings of gilts in the Asset Purchase Facility. The first gilt sales were rescheduled to begin on 31 October and proceed thereafter in line with the MPC's previous decision.

The MPC will make a full assessment of recent macroeconomic developments at its next scheduled monetary policy meeting on 3 November.

Monitoring impact and resilience

The Bank is monitoring the impact of the operations on market functioning. That monitoring is informed by the Bank's Market Intelligence function, which provides detailed, real-time information on market functioning. Long-dated real and nominal gilt

⁶ In line with the Concordat governing the MPC's engagement with the Bank's Executive regarding balance sheet operations, available here: [The MPC and the Bank's Sterling Monetary Framework \(bankofengland.co.uk\)](https://www.bankofengland.co.uk/monetary-policy/sterling-monetary-framework)

⁷ As notified by the Chancellor to the Chairs of the Treasury Committee and Public Accounts Committee in his letters of 28 September, available here:

<https://committees.parliament.uk/publications/30129/documents/174330/default/>

⁸ See [Bank of England Act](#).

yields fell materially following Bank's the announcement consistent with a removal of a liquidity premium caused by the risk of run dynamics in the gilt market.

The Bank, TPR and the FCA are closely monitoring the progress of LDI funds as they take action to put their positions on a sustainable footing for whatever level of asset prices prevails at the end of the operation and to ensure LDI funds are better prepared for future stresses given the current volatility in the market. While it might not be reasonable to expect market participants to insure against all extreme market outcomes, it is important that lessons are learned and appropriate levels of resilience ensured.

Given broader vulnerabilities in market-based finance, the Bank and the FPC also continue to monitor market conditions and channels through which vulnerabilities could amplify future market stresses. The FPC will publish its next Financial Policy Statement and Record on 12 October.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'J. Cunliffe', written in a cursive style.

Sir Jon Cunliffe
Deputy Governor, Financial Stability