Commission de Surveillance
du Secteur Financier

Macroprudential measures for GBP Liability Driven Investment Funds

CSSF policy framework for GBP LDI funds managed by Luxembourg AIFMs

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Macroprudential measures for GBP Liability Driven Investment Funds

Executive Summary

The 2022 gilt market crisis highlighted vulnerabilities amongst GBP liability driven investment ("LDI") strategies that pose a risk to financial stability. The scale, but especially the pace, of the increase in yields following the "mini budget announcement" forced GBP LDI funds to sell gilts at a moment of market illiquidity, driving yields higher. To stop this self-reinforcing dynamic, the Bank of England undertook a temporary and targeted intervention in the gilt market.

Against this backdrop, the Commission de Surveillance du Secteur Financier ("CSSF") outlined in November 2022, via an industry letter[1], its supervisory expectations for GBP denominated LDI funds ("GBP LDI funds") in order to maintain an improved level of resilience. This letter was issued following coordination with the Central Bank of Ireland ("CBoI", Ireland's National Competent Authority ("NCA")), after interaction with the European Securities and Markets Authority ("ESMA"). The industry letter outlined that GBP LDI funds were expected generally to maintain the enhanced level of resilience observed at the time, which was resilience to a 300-400 basis point increase in yields (referred to as a "yield buffer").

The CSSF published on 23 November 2023 a consultation paper[2] (the "Consultation") outlining a proposal, following coordination with the CBoI, to codify the existing yield buffer measure via the use of Article 25 of the Alternative Investment Fund Managers' Directive ("AIFMD") on the use of information by competent authorities, supervisory cooperation and limits to leverage, as implemented into Luxembourg legislation by Article 23 of the Law of 12 July 2013 on alternative investment fund managers ("AIFM Law").

Building on the November 2022 industry letter and on the feedback received under the Consultation, the CSSF sets forth a set of macroprudential measures to ensure the continuing resilience of GBP LDI funds managed by Luxembourg Alternative Investment Funds Managers ("LU AIFMs").

The existing funds in scope of the measures will have three months to be compliant with the yield buffer requirement and to prepare the reporting to the CSSF according to the new data return template. New funds are expected to be compliant from inception. Following the end of the three-month implementation period on 29 July 2024, the CSSF industry letter of November 2022 will no longer be applicable.

[1] https://www.cssf.lu/en/2022/11/communication-from-the-cssf-on-liability-driven-investment-funds/
[2] https://www.cssf.lu/en/2023/11/cssf-communication-on-gbp-liability-driven-investment-funds-consultation/

Table 1 – Summary Table of Measures

Item	Description
Buffer level	GBP LDI funds must maintain resilience to a minimum of 300 bps increase in UK yields before their NAV turns negative.
Scope of buffer	The yield buffer applies to all GBP LDI funds managed by a Luxembourg AIFM.
Definition of GBP LDI funds	The population of GBP LDI funds that the codification applies to is identified from their investment strategy. The definition is as follows : *"Any fund whose investment strategy seeks to match the sensitivity of their assets to UK interest rates or inflation to that of their investors' pre-defined liabilities."*
Buffer composition	Only assets on the fund's balance sheet are included in the calculation of the buffer. Assets owned by LDI funds' investors that the LDI fund is authorised to use will not form part of the yield buffer. All assets on the fund's balance sheet are to be considered in calculating the buffer subject to the buffer composition and liquidity criteria set out below. Where assets are not sensitive to UK rates, a fund should appropriately consider and manage these assets if they are to be included in the yield buffer. This requires regular assessments of the fund's resilience to simultaneous shocks to UK rate sensitive and non-UK rate sensitive segments of its portfolio. Furthermore, it is expected that non-UK rate sensitive assets should only form a limited part of the buffer.
Buffer Liquidity	Funds should ensure that the buffer consists of assets which are eligible to meet margin or collateral calls that result from adverse market circumstances, or assets which can be transformed into such eligible assets with requisite speed under normal and stressed market conditions. For an asset to be considered transformable with requisite speed, the period of time it takes to transform it into eligible collateral should align with the settlement period of a fund's leverage. Such assets should only account for a limited part of the total buffer and fund managers should exercise a prudent approach to the inclusion of such assets in the buffer.
Reporting	Monthly averages of daily yield buffer are to be reported at month-end to the CSSF. The average yield buffer in each reporting observation should be greater than or equal to 300 bps.
Buffer usability	The average yield buffer in each reporting observation should be greater than or equal to 300 bps. In order to provide limited flexibility, one of the last four monthly reporting observations can be below 300 bps in exceptional circumstances.
Buffer dis-application	The CSSF may temporarily dis-apply the yield buffer requirement should there be a significant, market-wide shock to financial stability. This would ultimately be a judgement, based on market intelligence, firm engagement and external indicators.
Notification to the CSSF	If funds in scope of the measures anticipate substantive and/or prolonged deviations below 300 bps, they must notify the CSSF by email to opc_prud_risk@cssf.lu. Availing of the buffer usability feature does not constitute a prolonged deviation, therefore it does not require notification to the CSSF.

1. Introduction

The 2022 gilt market crisis, triggered by the UK government's "mini budget", highlighted vulnerabilities amongst GBP LDI strategies. LDI strategies are used by UK pension funds for hedging purposes to provide their future pensioners with a pre-defined return, whereby some pension funds rely on LDI funds to hedge their liabilities against duration and inflation risks. A significant cohort of LDI funds are domiciled in the EU, mostly in Ireland and to a lesser extent in Luxembourg.

The stresses that those GBP LDI funds faced resulted from their use of leverage and larger than usual margin/collateral calls. LDI funds typically hold long maturity interest rate swaps ("IRS") to match their investors' (i.e. UK pension funds) duration and repo transactions to leverage their sovereign bonds exposure. Where funds had insufficient assets (e.g. cash, MMF shares or unpledged gilts) to meet IRS margin or repo collateral calls following the strong and swift move in yields, and investor recapitalisations were not forthcoming, GBP LDI funds were forced to deleverage by selling gilts to avoid their NAV turning negative. At this point, a fund would no longer have been able to receive subscriptions and would have had to wind down.

The large volume of gilts sold reinforced the downward price pressure both on gilts and the GBP LDI funds' assets value and ultimately led the Bank of England to engage in a temporary and targeted intervention to stabilise the gilt market. The 2022 gilt market crisis highlighted vulnerabilities amongst GBP LDI funds that pose a risk to financial stability. The scale, but especially the pace, of the increase in yields following the "mini budget announcement" forced GBP LDI funds to sell gilts at a moment of market illiquidity, driving yields higher. To stop this self-reinforcing dynamic, the Bank of England undertook a temporary and targeted intervention in the gilt market.

Against this backdrop, the CSSF outlined in November 2022, via an industry letter[3], its supervisory expectations for GBP LDI funds in order to maintain an improved level of resilience. This letter was issued following coordination with the CBoI, and after interaction with the ESMA. This industry letter outlined that GBP LDI funds were expected generally to maintain the enhanced level of resilience observed at the time, which was resilience to a 300-400 basis point increase in yields (referred to as a "yield buffer").

Subsequently, UK regulatory authorities have outlined their own recommendations and guidance on enhancing the resilience of various entities in the LDI sector. On 29 March 2023, the Bank of England staff paper stated recommendations for NCAs to improve the resilience of LDI funds[4], including a yield buffer recommendation. The Pensions Regulator ("TPR") largely adopted these recommendations into its guidance for pension fund trustees, including a minimum market stress yield buffer of 250 bps plus an additional operational buffer[5].

[3] https://www.cssf.lu/en/2022/11/communication-from-the-cssf-on-liability-driven-investment-funds/
[4] https://www.bankofengland.co.uk/financial-policy-summary-and-record/2023/bank-staff-paper-ldi-minimum-resilience
[5] https://www.thepensionsregulator.gov.uk/en/document-library/scheme-management-detailed-guidance/funding-and-investment-detailed-guidance/liability-driven-investment

Building on the industry letter and the feedback received on the Consultation[6], the CSSF is codifying the existing yield buffer measure for Luxembourg AIFMs under Article 23 of the AIFM Law. This codification aims at maintaining the resilience of GBP LDI funds and, on that basis, reducing the probability that such funds contribute to future crises primarily in the UK government bond (gilt) market, thereby mitigating also potential spill-over risks to the European financial system.

2. Rationale and objectives

The CSSF considers that the 2022 episode evidenced that the cohort of EU GBP LDI funds' use of leverage may contribute to the build-up of systemic risk. For instance, GBP LDI funds with an insufficient buffer to meet IRS margin or repo collateral calls have to deleverage if investor (typically UK defined benefit pension funds) recapitalisations are not forthcoming, which exposes their investors to market risk as the LDI hedging function relating to their duration and inflation risk is no longer fully fulfilled.

Furthermore, LDI investors may need to sell assets in order to meet the recapitalisation requests from the LDI fund they are invested in, or else be exposed to market risk because they are no longer hedged in the context of their LDI strategy. Stress can therefore be transmitted to other financial institutions via the requirement of investors to recapitalise the GBP LDI funds. For instance, over the period of September-October 2022, capital flows recorded in GBP LDI funds domiciled or managed from Luxembourg during crisis peak evidenced higher than usual recapitalisation processes causing the investors to subscribe in those GBP LDI funds[7].

GBP LDI funds can also be a source of counterparty risk should they not be in a position to meet the margin/collateral call demands resulting from their usage of interest rate derivatives and recourse to repo transactions to leverage their sovereign bonds exposure. For example, in September 2022, some managers of GBP LDI funds in Luxembourg were forced to use short term credit facilities in order to cover larger than usual margin/collateral calls they were facing, leading to counterparty risk for their depository bank. Any default on those margin/collateral calls would have impacted the financial counterparty of the repo/derivative transaction and triggered a forced deleveraging by selling gilts which could have then further reinforced the gilt downward price pressure at this time.

Few funds also reported an abnormal level of settlement failures with various counterparties, notably resulting from a larger volume of sales of securities within a short timeframe (to cover collateral calls).

[6] https://www.cssf.lu/en/2023/11/cssf-communication-on-gbp-liability-driven-investment-funds-consultation/
[7] *For further details, please refer to section 1 of the CSSF consultation on macroprudential measures for GBP LDI funds*

GBP LDI funds' fire sales of gilts generated downward spirals for gilt prices in September-October 2022. LDI funds employ leverage through derivatives (such as interest rate swaps) and repos. Both can create demand for additional liquidity as interest rates increase, which may result in funds selling gilts or other assets. Gilts purchased via the cash received under the repo act as collateral for the repo transaction. If the value of gilts falls, LDI funds must supply additional collateral to maintain the repo transaction. During the crisis, GBP LDI funds, likely concerned about their ability to continue maintaining their repo, decided instead to sell gilts and wind down their repo positions. This led to a further fall in gilt prices, creating further demands for additional collateral for other funds who still had open repo positions (i.e. a downward spiral).

Rising gilt yields also result in a decline in the mark-to-market value of (short) interest rate swaps, as interest rates for these swaps move in tandem with gilt yields. This trigger increased variation margin payments that are usually met with cash. LDI funds holding insufficient cash and cash-equivalents to meet those margin calls and not receiving sufficient new capital immediately may be forced to sell gilts.

A significant cohort of LDI funds are domiciled in EU, mostly in Ireland and to a lesser extent in Luxembourg. In its EU Non-bank Financial Intermediation Risk Monitor 2023[8], the European Systemic Risk Board ("ESRB") identified, on the basis of the AIFMD data, around 500 LDI AIFs domiciled in the EU, amounting to an estimated total NAV of € 250 billion at the end of 2021; the vast majority being denominated in GBP (approximately €230 billion according to the ESRB).

GBP LDI funds, either managed by a Luxembourg AIFM or domiciled in Luxembourg, accounted for a total NAV of €20,3 billion as at the end of 2022 and a total NAV of €27,4 billion as at the end of 2021. This would approximately represent around 12% of the total GBP LDI funds, as at the end of 2021. During the gilt market crisis, GBP LDI funds, either managed by a LU AIFM or domiciled in Luxembourg, reported £ 3,7 billion of net gilt sales, with most of those sales being made between 26 September 2022 and 14 October 2022. This represented approximately 10,3% of the estimated total of net gilt sales made by GBP LDI funds and their investors[9]. Additionally, according to the CBoI[10], Irish-authorised funds represent approximately 60% of the total pooled GBP denominated LDI fund assets and accounted for 30% of net gilt sales by LDI funds and their investors. This demonstrates that the cohort of GBP LDI funds taken at EU level has the capacity to transmit and amplify stress to the gilt market if they were allowed to return to their resilience level of the pre-gilt market crisis.

[8] *https://www.esrb.europa.eu/pub/pdf/reports/nbfi_monitor/esrb.nbfi202306~58b19c8627.en.pdf*
[9] *In its working paper "An anatomy of the 2022 gilt market crisis", the Bank of England estimated that, between the 23 September 2022 and the 14 October 2022, the total net sales of gilts by the LDI funds and their investors (i.e. pension funds or insurances) amounted to over £36 billion.*
[10] *CP157 - Macroprudential measures for GBP liability driven investment funds (centralbank.ie)*

The objective of the framework outlined in section 3, which was elaborated in coordination with the CBoI, is to ensure the continuing resilience of GBP LDI funds in order to prevent an amplification of stress to gilt markets such as during the 2022 episode. The CSSF is of the opinion that this framework, building on a minimum yield buffer, can address LDI funds' vulnerabilities as it is directly determined by funds' portfolio duration and leverage. The yield buffer is defined as the level of increase in yields that a fund can withstand before its NAV turns negative. It will be codified as an 'other restriction' under Article 23 of the AIFM Law to address systemic risk posed by leverage. Unlike the November 2022 industry letter, this measure will therefore only cover the GBP LDI funds managed by LU AIFMs, and not Luxembourg-domiciled GBP LDI funds managed by an EU AIFM.

3. Framework design

3.1 The level of the buffer and its calculation

The yield buffer is defined as the level of increase in UK yields that a fund can withstand before its net asset value (NAV) turns negative. This will require the calculation of portfolio duration and convexity (as weighted averages) to determine the impact a 300 bps increase in yields would have on the value of a fund's portfolio[11]. This calculation should consider all exposures that a fund's portfolio contains, subject to the buffer composition criteria in section 3.3 below.

GBP LDI funds managed by an LU AIFM must maintain resilience to a minimum of a 300 bps increase in UK yields. This calibration is guided by a combination of analytical evidence and judgement[12] and is consistent with the range of 300-400 bps as set out in the November 2022 industry letter by the CSSF. For GBP LDI funds which target real rate exposure, inflation expectations should be held constant so that the real interest rate is stressed appropriately. Inflation focused LDI funds should maintain resilience to a 300 bps increase in nominal interest rates.

[11] Managers may employ alternative methods of estimating interest rate sensitivity should they judge them to be more precise, or more conservative (which may include duration only, duration and other non-linearities).
[12] The Bank of England staff paper "LDI minimum resilience – recommendation and explainer" for instance recommended a 250 bps buffer and an additional undefined buffer.

The 300 bps yield buffer level should be viewed as a minimum, rather than a target. The CSSF anticipates that to avoid the yield buffer deviating below the minimum, GBP LDI funds should consider maintaining their yield buffer above 300 bps in order to manage idiosyncratic variations in the value of their portfolio. The CSSF considers that maintaining a yield buffer above the minimum requirement would be prudent, particularly where operational challenges may prevent investors from being able to meet capital calls quickly (e.g. if a fund needs to co-ordinate amongst a large number of investors and believes it may be operationally challenging for some investors to meet capital calls in a stress situation, or if a fund has a recapitalisation process longer than a week). Furthermore, funds should ensure that their investors are aware that they will need to meet capital calls in both normal and stressed market conditions.

The yield buffer should not serve as a source of liquidity for any non-GBP LDI leveraged exposures. For example, consider a GBP LDI fund with a derivative whose underlying relates to global equities. If the fund were to face a margin call for this derivative due to unfavourable movements in global equities, it should hold sufficient assets to meet any margin calls related to this derivative in addition to the assets constituting the 300 bps yield buffer.

3.2 Scope of Measures

The yield buffer applies equally to all GBP LDI funds managed by a Luxembourg AIFM. The CSSF is of the view that these funds, as part of the cohort of EU domiciled GBP LDI funds, can pose a systemic risk given their leverage and concentrated ownership position in the gilt market.

The population of GBP LDI funds that the codification applies to is identified from their investment strategy. A definition of LDI funds based on portfolio composition would likely be imprecise - other fund cohorts also combine sovereign bond holdings, repo and interest rate swaps, while not posing the same risk to financial markets. What differentiates LDI funds is how these instruments serve the funds' investment strategy - they are used to hedge their investors' liabilities. Therefore, the definition of GBP LDI funds is:

> *"Any fund whose investment strategy seeks to match the sensitivity of their assets to UK interest rates or inflation to that of their investors' pre-defined liabilities."*

GBP LDI funds typically gain exposure to UK interest rates and inflation through gilts and/or interest rate or inflation derivatives. What distinguishes them from other funds that combine such instruments is that they use them to provide an investment that hedges their investors' (typically, although not exclusively, defined benefit pension funds) liabilities.

In assessing whether a fund's investment strategy is within the definition outlined above, funds should consider a broad range of information. For example, the investment objectives of a fund may be interpreted as not placing a fund within the definition. However, the basis on which the fund is marketed, the managers' understanding of their investors' investment objectives, and other regulatory reporting may all make clear that the fund is in fact a GBP LDI fund.

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It is the responsibility of fund managers to determine whether GBP LDI funds they manage are in scope of the measures. If a fund manager is in doubt as to whether its fund is in scope, the CSSF recommends taking a prudent approach. Funds which combine GBP LDI strategies and other strategies should be considered in scope.

New GBP LDI funds managed by a Luxembourg AIFM seeking to be launched, in line with the definition above, are required to notify the CSSF that they are in scope of the measures. It is the expectation that LU AIFMs managing GBP LDI funds will notify the CSSF that they are in scope of the measures when they are seeking to launch new funds. This notification should be sent by email to gfi@cssf.lu. The CSSF may conduct thematic analysis on the in-scope population of funds, so managers will need to ensure that this is up to date for the funds they manage.

3.3 Buffer Composition

Only assets on the fund's balance sheet are included in the calculation of the buffer. Assets owned by LDI funds' investors that the LDI fund is authorised to use will not form part of the yield buffer.

3.3.1 Liquidity Guidance

GBP LDI funds should ensure that assets in the buffer are sufficiently liquid. Funds should ensure that the buffer consists of assets which are eligible to meet margin or collateral calls that result from adverse market circumstances, or assets which can be transformed into such eligible assets with requisite speed under normal and stressed market conditions. For an asset to be considered transformable with requisite speed, the period of time it takes to transform it into eligible collateral should align with the settlement period of a fund's leverage. Such assets should account for a limited part of the total buffer, and managers should exercise a prudent approach to the inclusion of such assets in the buffer.

3.3.2 Treatment of non-UK rate sensitive assets

Where assets are not sensitive to UK rates, the CSSF judges that funds should appropriately consider and manage these assets if they are to be included in the buffer. This requires regular assessments of the fund's resilience to simultaneous shocks to UK rate sensitive and non-UK rate sensitive segments of its portfolio, notwithstanding the fact that the minimum yield buffer of 300 bps refers only to an increase in UK yields. Furthermore, non-UK rate sensitive assets should only form a limited part of the buffer.

3.4 Buffer Usability

A key objective in the design of the yield buffer is that it should be usable and should not lead to procyclical dynamics. It would be counterproductive if funds sell gilts in times of stress in order to meet the yield buffer. If such procyclicality occurred, the replenishment of the yield buffer could replicate the forced sale dynamics observed in the gilt market crisis during a future stress, amplifying any initial shock.

To promote usability of the buffer, and as set out in the consultation paper, the CSSF is adjusting how the yield buffer is applied when compared to the November 2022 industry letter. GBP LDI funds managed by LU AIFMs are required to calculate the monthly average of the yield buffer, based on the yield buffer at the end of each business day of the month, at the end of each calendar month. The monthly average yield buffer would then need to be reported as a single observation to the CSSF following each month-end and should be greater than or equal to 300 bps. However, in order to provide limited flexibility to facilitate buffer usability, on a rolling basis over the last four reporting observations, one of the reporting observations may be below 300 bps in exceptional circumstances. The use of this flexibility will be monitored, with the expectation that it is not used on a regular basis.

Additionally, the CSSF may temporarily dis-apply the yield buffer requirement should there be a significant, market-wide shock to financial stability. Dis-application of the yield buffer would be considered in the case of a severe market wide shock or event, where it is anticipated that it may take a substantial period of time for funds to return to the required levels of resilience, and that forcing them to expedite this process would further amplify the shock. This would ultimately be a judgement, based on the review of a range of data and external indicators, coupled with ongoing market intelligence and firm engagement.

The following example describes how the CSSF envisions these elements combining. Consider a five-month period. A GBP LDI fund has been maintaining a monthly average yield buffer of 300 bps in each of months one to three. In month four, a shock occurs such that the fund expects that there will be a prolonged and/or substantial deviation of the buffer below 300 bps. At this point, the fund should notify the CSSF that such a deviation in the yield buffer has occurred. The fund may be able to recapitalise by month-end such that the monthly average equates to at least 300 bps. However, if this is not feasible, then the proposed measures provide some limited flexibility that does not require the fund to deleverage procyclically to return to a 300 bps monthly average. In month four, their monthly average buffer can remain below 300 bps. In month five, it is expected that by the end of this month the monthly average yield buffer should have returned above 300 bps, unless the CSSF temporarily authorised the dis-application of the yield buffer limit for a longer period of time.

3.5 Reporting

In the context of the codification of the yield buffer, LU AIFMs in scope are required to fill in an updated LDI data template for the GBP LDI funds they manage. Following the gilt market crisis, a data template was jointly introduced by the CSSF, the CBoI and the Financial Conduct Authority (FCA) to monitor GBP LDI funds on a weekly basis. This template is updated in light of the codification of the yield buffer measure. It will also move to monthly reporting, and LDI funds will also have to report the monthly average of the yield buffer and the monthly minimum value. This will form part of the ongoing monitoring process by the CSSF and will be used for ongoing supervisory engagement with relevant AIFMs.

Consistent with other regulatory requirements, the yield buffer will be subject to regular monitoring by the CSSF. The monitoring of the limit will be assessed based on the data template mentioned above. It will be the responsibility of AIFMs to ensure that all reporting is accurate and that reported data are up to date ahead of the assessment deadline each month. AIFMs may be asked to re-submit data in the event that the CSSF identifies errors in the reported values.

Fund managers will only have to notify the CSSF that their yield buffer has fallen below 300 bps in real time if they expect the deviation to be prolonged and/or substantial. Minor deviations of the yield buffer below the minimum 300 bps do not need to be reported in real time, thus providing LDI funds with the incentive to re-build their buffers appropriately and without resorting to fire sales of gilts to immediately replenish their yield buffers.

Likewise, availing of the buffer usability does not constitute a prolonged deviation - rather it is making use of the rule as intended, and will be monitored in the monthly reporting template. Notifications from AIFMs of prolonged and/or substantial deviations and breaches of the measure should be reported to the CSSF by email to opc_prud_risk@cssf.lu.

3.6 Implementation period

Existing GBP LDI funds have three months to implement the measures. For the most part, these macroprudential measures are a codification of a supervisory expectation that industry is already complying with. However, in certain cases there are augmentations to the supervisory expectations outlined in the November 2022 industry letter, which may require time to implement. Balancing these two considerations, the CSSF provides a three-month implementation period. AIFMs should ensure that funds are compliant by 29 July 2024.

3.7 Repeal of the CSSF industry letter on LDI funds dated 30 November 2022

The macroprudential measures replace the requirements set out in the CSSF industry letter on LDI funds dated 30 November 2022. This letter is therefore repealed with effect from 29 July 2024.

4. Legal basis

The yield buffer will be codified under Article 23 of the AIFM Law transposing Article 25 of the AIFMD**.** Article 23 of the AIFM Law provides the CSSF with the power to impose restrictions on the leverage that AIFMs are entitled to employ with respect to the AIFs they manage, where leverage is judged to contribute to systemic risk or disorderly markets.

Article 23 of the AIFM Law notes: "*The CSSF shall assess the risks that the use of leverage by an AIFM with respect to the AIFs it manages could entail. If the CSSF deems such action necessary in order to ensure the stability and integrity of the financial system, it shall, after having notified ESMA, the ESRB and, if applicable, the competent authorities of the relevant AIF, impose limits to the level of leverage that an AIFM is entitled to employ or other restrictions on the management of the AIF with respect to the AIFs under its management to limit the extent to which the use of leverage contributes to the build-up of systemic risk in the financial system or risks of disorderly markets. The CSSF shall duly inform ESMA, the ESRB and, if applicable, the competent authorities of the AIF, of actions taken in this respect, through the procedures set out in Article 50 of Directive 2011/61/EU.*"

The yield buffer is codified as an 'other restriction' under Article 23 of the AIFM Law, rather than as a standard leverage limit. The yield buffer will limit each fund's leverage based on the duration and convexity of its portfolio. The codification of the yield buffer requires the CSSF to use its power to impose other restrictions under Article 23 of the AIFM Law.

5. Conclusion

A significant cohort of LDI funds are domiciled in the EU, mostly in Ireland and to a lesser extent in Luxembourg. The cohort of EU GBP LDI funds played a significant role in the gilt market crisis in 2022. It accounted for approximately 40% of total net gilt sales by all LDI firms over the crisis period. Sales were concentrated amongst funds who had a yield buffer below 300 bps.

After the initial supervisory expectations set in response to the crisis, the CSSF is now codifying the yield buffer expectation under Article 23 of the AIFM Law. Building on the November 2022 industry letter, this codification and augmentation aims at ensuring the continuing resilience of GBP LDI funds and at reducing the probability that they contribute to future crises in the UK government bond (gilt) market.

The CSSF will closely monitor the adoption of the new framework, its impact and will conduct regular monitoring of it. The CSSF will conduct regular monitoring of the yield buffer measure to ensure that it is achieving its macroprudential aims and that it is not imposing undue burden on market participants or the broader economy.

Finally, euro-denominated LDI funds managed by a Luxembourg AIFM are out of scope. They do not pose the same risk to the European sovereign debt market as they hold a much smaller share of the overall market. Monitoring of euro-denominated LDI funds will form part of the CSSF's regular risk assessments, and if their systemic importance were to change, the CSSF would review the application of the rules accordingly.

APPENDIX - Feedback Statement

1. Introduction

The consultation outlined the CSSF's proposal to introduce macroprudential measures to ensure the continuing resilience of GBP LDI funds managed by LU AIFMs. Stakeholders were invited to provide feedback on the proposal. Six responses were received from stakeholders, including alternative investment fund managers (AIFMs) active in Luxembourg but also outside of Luxembourg, as well as a consultant, during the Consultation period from 23 November 2023 to 18 January 2024.

The CSSF expresses its gratitude to all stakeholders who dedicated their time to submit feedback. The valuable insights received from this feedback have been considered by the CSSF in the decision on the final measures retained under Article 23 of the AIFM Law.

Feedback received related to different topics, namely the proposed calibration of the minimum yield buffer, the targeted liquidity guidance on assets constituting the yield buffer, the definition of LDI funds, the inclusion of third-party assets in the buffer calculation, the buffer usability and the potential unintended consequences or other impacts (including costs) of the proposed measures.

This Feedback Statement provides a concise summary of the responses received and of the adjustments made by the CSSF to the Consultation text. Where relevant, it also makes reference to feedback received by the CBoI, as the CSSF and the CBoI coordinate their policy response in introducing macroprudential measures for GBP LDI funds. The CBoI has shared feedback with the CSSF where the feedback has prompted changes to the measures outlined in the Consultation or provided more details on similar feedback received from respondents. Therefore, it is recommended that this Feedback Statement is read in conjunction with the feedback published by the CBoI.

The statement further aims at enhancing comprehension of the policy development process within the CSSF. However, it does not directly pertain to assessing compliance with regulatory requirements. For more comprehensive information on the final package of macroprudential policy measures, as well as the key principles and elements of the framework, please refer to the previous sections.

2. Feedback on proposed measures

a. Calibration and minimum level of the yield buffer

QUESTION: Do you consider that the proposed calibration of the minimum yield buffer is appropriate and the calculation of the actual yield buffer sufficiently clear?

All respondents globally agreed that the calibration of the minimum yield buffer at 300 bps is clear and appropriate. However, two actors highlighted that while the calibration seems appropriate if the relevant LDI funds can recapitalise in a five-day period, the level of 300 bps seems overly cautious for LDI funds with a quicker recapitalisation speed and inappropriate for funds with a recapitalisation speed exceeding five days. There was a consensus that the calibration of the yield buffer should consider all the exposures in a fund's portfolio.

Some respondents highlighted some ambiguous references that should be excluded from the yield buffer definition to avoid potential inconsistencies. More specifically, respondents pointed out that the reference in section 3.1 of the consultation paper: "*The yield buffer is approximately equivalent to the assets of a fund not committed to maintain their leverage (i.e. collateral/margin for repo/gilts)*" should be removed, as this creates ambiguity as to whether initial margin or haircuts on repo are included in the definition. These references add, according to these respondents, complexity to the calculation and could lead to less cost-effective solutions for investors (managers may choose to trade repo only with banks that do not apply a haircut, which may not be the most cost-effective solution for investors and therefore impact investor returns) and counterproductive trading practices (encourage managers to trade swaps bilaterally rather than through clearing, to avoid the need to post initial margin).

Some respondents deemed appropriate to define haircuts on assets considered in the yield buffer calculation, while others found it too prescriptive and highlighted a risk of herding.

In addition, one respondent noted that the sentence: "*This will require funds to develop a weighted average of the interest rate sensitivity of all their exposures to calculate their portfolio duration (and convexity)*" with the related footnote "*Where exposures = assets (excl. m-t-m derivative positions) + net notional of derivative positions*" could lead to meaningfully different yield buffer calculations for a shock of 300bp, potentially overstating the resilience of a fund. Asking the sensitivity measure to cover both duration and convexity was seen as too prescriptive and it was suggested to stick to a more principle-based approach relying on the definition of the yield buffer ("*the level of increase in UK yields that a fund can withstand before its net asset value (NAV) turns negative*").

Finally, questions were also raised by respondents to the CBoI consultation as to whether LDI funds with certain characteristics should or would be in scope. One respondent queried whether inflation-focused LDI funds should be in scope. They argued that as inflation expectations are less volatile than interest rates, and as inflation-focused funds' primary exposure is to inflation, these funds should be excluded from the scope of the measures. Another query was raised as to whether funds with GBP share classes, but non-GBP assets, would be considered within the scope of the LDI measures.

CSSF response:
As the feedback regarding the minimum buffer level was largely positive, the CSSF has not modified the minimum buffer level proposed in its final measures. For funds with a recapitalisation speed exceeding one week, the CSSF added a clarification that it would be prudent to hold a yield buffer above the minimum requirement in order to manage idiosyncratic variations in the value of their portfolio and avoid going below the 300 bps yield buffer.

The CSSF has considered the request for additional clarity on the yield buffer concept and has reworded accordingly the above-mentioned conflicting references. Following the feedback from the CBoI consultation, the CSSF has also specified in the yield buffer definition that the shock to be applied in the context of the calibration is linked only to the UK rates. The CSSF and the CBoI also agree that inflation-focused funds are not excluded from the scope of the measures. While these funds' primary exposure is to inflation, their portfolios are still sensitive to interest rates. Gilt holdings have also been reported by inflation-focused funds. The buffer for inflation-focused funds is the same as for all other funds - it covers a 300 bps movement in rates – not inflation expectations. Accordingly, the CSSF has added some clarifications on the yield buffer calculation for GBP LDI funds targeting real rate exposures and well as for inflation focused LDI funds.

b. Liquidity guidance

QUESTION: Would you see merit in setting a minimum speed for the transformation into eligible assets (in days)? What would you consider the right minimum number of days, considering the settlement period for posting collateral to maintain leverage (repurchase agreements and/or derivatives)?

All respondents agreed on the importance of setting a minimum speed for the transformation into eligible assets. They all acknowledged that the speed of collateral transformation is a crucial factor in determining the overall resilience of the funds.

Several respondents suggested that the regulation should specify the speed at which funds' assets can be converted into eligible collateral. They specified that such a minimum speed should account for the full settlement cycle and align with the collateral settlement. There was no consensus on the minimum timeframe as the propositions received varied between T+2 and T+4, whereas in the CBoI consultation the suggested minimum speed ranged from T+3 to T+10 days.

One respondent underlined that the five-day guidance appearing in the UK's Financial Policy Committee's LDI buffer guidance would be too long for most counterparties during stress market conditions and that there is no sufficient evidence to decide on a minimum number of days for the transformation into eligible assets.

CSSF response:
The CSSF has decided not to specify a minimum number of days for the "requisite speed" as no clear consensus could be evidenced from the answers provided and as settlement periods may change over time and depend on individual repo and derivative contracts. The CSSF agrees that the "requisite speed" should

account for the full settlement cycle of the collateral, which should align with the liquidity of the assets for their transformation into eligible assets.

Given the diversity of the market participants' set ups, the relative complexity in defining a fixed maximum timeframe and the possible unintended consequences attached to it, the CSSF has therefore decided to retain a principle-based approach. This decision is reflected in the updated liquidity guidance above. Consequently, funds will be obliged to match the liquidity of the transformable assets with the settlement period of their leveraged positions (including repos and derivatives).

In relation to a comment received in the context of external assets pertaining to contagion risk, the CSSF considers that this contagion risk applies more generally to any assets that have to be converted into eligible assets, including assets on the balance sheet of the GBP LDI funds as this conversion may lead to forced sales. For instance, for GBP LDI funds, MMFs are typically not eligible for collateral/margin calls and their conversion to eligible assets may lead to redemption pressure if many LDI funds needed to convert MMFs to cash in a short timeframe to meet collateral/margin calls. In order to mitigate this contagion risk, the CSSF clarified in the final liquidity guidance that assets that have to be converted can only form a limited part of the buffer.

c. Scope of the measures and definition of LDI funds

QUESTION: Do you agree with the proposed definition of LDI funds? In particular, do you consider that the definition is sufficiently clear and specific (i.e. only covering LDI funds)?

All respondents overall agreed with the proposed definition of LDI funds, which captures any funds whose investment strategy seeks to match the interest rate or inflation sensitivity of their assets with that of their investors' liabilities. However, a few respondents suggested to further narrow down the proposed definition by adding a reference to the use of leverage and derivatives. One respondent also mentioned that the definition should specify that such LDI funds seek to match investors' liabilities that are pre-defined.

Some respondents also recommended amending the definition to make it clearer that the proposed rules are intended to apply only to GBP LDI Funds.

CSSF response:
Considering the positive feedback received, the CSSF has decided to maintain the definition and the scope proposed in the Consultation. Nonetheless, as suggested by some respondents, the CSSF has made two minor adjustments to make it explicit that the investment strategy pursued by the GBP LDI funds aims at matching the sensitivity of their assets to UK interest rates and inflation with the one related to liabilities that are pre-defined at the level of their investors.

The addition of a reference to the "pre-defined" liabilities of GBP LDI investors was deemed necessary to better reflect the objective of LDI funds to support the hedging of the specific liability risks of their investors arising from pre-established commitments, and thereby to avoid the risk of an unintended inclusion of other funds not in the scope of the measures. Typical investors in LDI funds are defined benefit pension funds providing a pre-established benefit to their pension plan participants, using LDI strategies to hedge their pre-defined liabilities against interest rate and inflation risks.

d. Buffer composition

QUESTION: Do you agree that LDI funds should not be allowed to consider for the yield buffer calculation any assets that are not their balance sheet? If not, please elaborate. In this case, what safeguards should in your view be considered?

Most respondents acknowledged that only assets on the fund's balance sheet should be included in the yield buffer. The arguments raised for excluding external assets (i.e. assets owned by the fund investor and available to the manager as an extra resilience buffer, but not held on the fund's balance sheet) are mostly related to timing issues (i.e. assets outside the LDI fund's balance sheet are not readily available as they need to be first transferred to the fund), operational risk as the transfer of such external assets into the LDI fund involves additional operational steps, liquidity uncertainty as LDI managers may fail to properly assess their liquidity, implied leverage and volatility of these assets due to a possible lack of information and finally, given that such external assets may not be under the unique discretionary control of the LDI manager, the risk that those assets would not be available to support the LDI fund in stressed market conditions. One respondent also indicated that third-party assets should be seen as a source of interconnectedness that could pose a risk of contagion and consequently, such assets should not be considered in the buffer calculation.

Other respondents (which are related entities) argued instead that external assets should be eligible for the minimum buffer calculation, to the extent that (i) they are under the direct control of the LDI fund manager thanks to an exclusive discretionary mandate, (ii) are subject to a settlement cycle supporting the timely transformation of the external assets (such as MMFs subject to a T+1 settlement cycle) to eligible collateral that the LDI fund can use within its collateral settlement cycles and (iii) are subject to an independent operational oversight and control framework, which can be facilitated if the external assets are composed of funds managed by the LDI fund manager and have the same depositary bank and transfer agent as the LDI fund. They also argued that they have such a framework in place, which was successfully stress tested during the September 2022 UK gilt crisis: for example, the related GBP LDI funds were not forced sellers of gilt holdings, unlike some other GBP LDI funds, and they were not forced to make a temporary or permanent reduction in their hedging exposure or to suspend price releases.

CSSF response:
The CSSF acknowledges the responses received from most respondents when it comes to the consideration of external assets as a component to the yield buffer.

Following a close consultation with ESMA and the CBoI and to support regulatory convergence across jurisdictions, the CSSF has decided to only consider in the buffer composition the assets held on the GBP LDI fund's balance sheet.

e. Buffer usability

QUESTION: Do you consider that the mechanism driving the buffer usability is appropriate and sufficiently clear?

Most respondents agreed with the reporting mechanism proposed and considered it to be sufficiently clear.

One respondent requested a clarification on how breaches of the measures (i.e. deviations of the yield buffer below 300 bps) should be reported to the CSSF (e.g. which format/template and under which timeframe) and who will be required to make the notifications to the CSSF. Some respondents also called for a more accurate definition of what should be considered a prolonged/substantial deviation.

One respondent suggested that the proposed approach regarding the CSSF notification when the yield buffer falls below 300 bps raises concerns about the unpredictability of substantial or sustained deviations due to market conditions as managers might either fail to pre-empt the deviation or notify all deviations to the CSSF to avoid this risk. It suggested that the monthly calculation should be removed, and that daily monitoring should be the default model.

CSSF response:
As the feedback received was in general positive, the CSSF has globally retained the proposed approach in terms of buffer usability. The request for clarification on how to report breaches of the 300 bps minimum buffer has been considered. At this juncture, the CSSF does not deem necessary to define a specific template for these notifications.

On this subject, the CSSF would like to highlight that the current data template (the "Common Template"), which was introduced in August 2023 by the CSSF, the CBoI and the Financial Conduct Authority (FCA) to monitor GBP LDI funds on a weekly basis, will be updated to add the monthly average of the yield buffer and the monthly minimum value. Regarding the timeline, as indicated in the consultation, GBP LDI managers are expected to transmit this template to the CSSF on a monthly basis in accordance with the Common Template delivery requirements. For this purpose, the frequency of the reporting will be adjusted to monthly by the end of the implementation period.

CSSF would like to point out that, to ensure workability of the proposed reporting mechanism, minor deviations of the yield buffer below the minimum 300 bps are not to be reported in real time as long as they remain in line with the limited usability requirements set forth in the final rules, as this will be reported in the monthly reporting template. LU AIFMs should only proactively notify the CSSF when they anticipate a prolonged or substantial deviation of the yield buffer.

The CSSF has decided not to provide explicit definitions of the terms "substantial" or "prolonged" in order to prevent cliff-edge effects and to ensure buffer usability.

f. Unintended consequences

QUESTION: What potential unintended consequences do you see from the proposed measures, and how could these be mitigated?

Respondents pointed out potential unintended consequences. They notably recognised that, although the proposed measures aim to avoid procyclical gilt sales, this cannot always be guaranteed. Under strained market circumstances, LDI funds that aim at preventing violations of the yield buffer requirement might reduce their leverage in an unconventional manner (such as selling assets), possibly leading to the introduction of procyclical trends.

In addition, respondents argued that some unintended consequences could extend beyond the LDI strategies. For example, the proposed measures could affect the demand for short-term gilts and impair the overall gilts liquidity or lead to an increase in UK pension plans' corporate contributions to compensate lowered returns as a result of the yield buffer increase.

Survey participants also emphasised that the proposed actions could potentially heighten the likelihood of funds relocating to more favorable jurisdictions. They also indicated that yield buffer calculations are sensitive to methodology and model assumptions, implying that uniformity across all LDI managers might be difficult to achieve.

One respondent also referred to the ongoing efforts by the Financial Stability Board ("FSB"), the International Organization of Securities Commissions ("IOSCO") and the Committee for Payments and Market Infrastructures ("CPMI") to mitigate the systemic impact of non-bank financial institutions ("NBFI") and open-ended funds and suggested to explicitly mention that the proposed LDI buffer regulation should be re-evaluated when other related policies are in place.

CSSF response:
The CSSF is codifying an existing yield buffer supervisory framework applicable to GBP LDI funds (except for the external buffers which were originally allowed). Therefore, the CSSF is of the view that the initial costs of its codification have already been largely absorbed. As funds have already adjusted their yield buffer level, they will not need, in general, to sell additional gilts to deleverage, nor will investors need to provide additional capital to the fund.

The CSSF recognises that it may not be feasible to guarantee the complete absence of fire sales. Nevertheless, it has concluded that the measures, due to the adaptability offered by the buffer usability approach, would decrease the probability of procyclical sales. This approach is designed to offer managers flexibility without initiating fire sales. Moreover, the CSSF retains the option to temporarily dis-apply the minimum yield buffer if it deems that reverting to an average of 300 basis points across the industry would intensify financial market stress. In addition, the CSSF specifies in the final rules that only a limited part of the buffer should be composed of assets that need to be converted in order to meet collateral/margin calls, which is meant to further mitigate the risk of fire sales.

Concerning possible regulatory arbitrage, the CSSF points out that the proposed measures have been designed in close collaboration with the CBoI to keep the yield buffer requirements consistent across the two main European financial centers where GBP LDI funds are based. In addition, the codification of the yield buffer remains broadly in line with the guidance of the UK Pensions Regulator ("TPR") for pension funds using LDI strategies, including a minimum yield buffer of 250 bps plus an additional (undefined) operational buffer. The CSSF has engaged with other authorities for coordination purposes, as the largest share of GBP LDI funds domiciled in Luxembourg are managed on a cross-border basis by an EU AIFM.

Finally, the CSSF appreciates the recommendations and insights on how these measures align with a wider policy framework. These suggestions will be considered during the implementation of the measures and in future periodic reviews.

g. Additional feedback

QUESTION: Do you have any other comment on the proposal?

One respondent highlighted that the LDI crisis was largely due to the high concentration of providers in the LDI market, with most strategies managed by just three participants. It suggested that diversifying LDI managers could limit herding and prevent market participants from anticipating market dynamics. A maximum holding concentration per asset manager per strategy could be imposed according to that respondent. Asset managers posing a systemic risk could have additional responsibilities and a larger risk buffer, similar to systemically important banks.

CSSF response:
LU AIFMs manage only a small part of EU GBP LDI funds and the three largest GBP LDI fund managers are not based in Luxembourg. The CSSF further acknowledges that it is not possible to guarantee that no fire sales will occur. Nonetheless, the CSSF remains confident that the proposed measures, including the limited buffer usability coupled with the possibility for the CSSF to temporarily dis-apply the liquidity buffer, making herding behavior in stressed market conditions less likely, adequately mitigate the risks posed by GBP LDI funds, including but not limited to the funds of the largest actors.

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