

## IHS Markit Benchmark Administration Limited Consultation on LGIM Matching Plus and Core Indices Hedging Calculation – Updated

**LONDON, DECEMBER 7, 2022:** IHS Markit Benchmark Administration Limited (IMBA) is conducting a consultation with market participants on potential changes to the LGIM Matching Plus and Core indices.

### BACKGROUND

The LGIM Matching Core Index family is designed for pension schemes seeking simple access to a Liability-Driven Investment strategy (“LDI”) solution in order to reduce funding level volatility caused by changes in sterling interest rates and inflation rates. Each Matching Core index is constructed to hedge a Liability Cashflow profile. LDI is an investment strategy for a company or individual based on the cashflows needed to fund future liabilities and is designed for situations where future liabilities can be predicted with some degree of accuracy.

### PROPOSAL

IMBA is considering updating the methodology of the LGIM Matching Plus and Core indices with regards to the leverage check method; Upper/Lower/Optimal hedging multiple are all functions of relevant interest rate. The proposed changes are described in the tables below and on the following pages.

**Methodology****LGIM Matching Plus Hedging Calculation**

LGIM Matching Plus: Current

Calculation of Optimal Hedging Multiple:

- The optimal Hedging Multiples are calculated using the formulas below, where:

$$MD = \text{Modified Duration}$$

$$YrTM = \text{Number of years to maturity, assuming 365.25 days a year.}$$

- Leveraged Gilt:

$$\text{Optimal HM} = \text{Max}\{1.5, \text{Min}[4.5 - (MD - 10) * 0.05, 3.5 - (MD - 20) * 0.1]\}$$

$$\text{Upper} = 1.4 * \text{Optimal HM}$$

$$\text{Lower} = 0.75 * \text{Optimal HM}$$

- Leveraged Linker:

$$\text{Optimal HM} = \text{Max}\{1.5, \text{Min}[4.5 - (MD - 10) * 0.05, 3.5 - (MD - 20) * 0.1]\}$$

$$\text{Upper} = \begin{cases} 1.30 * \text{Optimal HM}, & YrTM \geq 30 \\ 1.40 * \text{Optimal HM}, & YrTM < 30 \end{cases}$$

$$\text{Lower} = \begin{cases} 0.86 * \text{Optimal HM}, & YrTM \geq 40 \\ 0.80 * \text{Optimal HM}, & 30 \leq YrTM < 40 \\ 0.75 * \text{Optimal HM}, & YrTM < 30 \end{cases}$$

- Leveraged Gilt+ and Leveraged Linker+:

$$\text{Optimal HM} = 2 + 1.25 * \text{Max}\{1.5, \text{Min}[4.5 - (MD - 10) * 0.05, 3.5 - (MD - 20) * 0.1]\}$$

$$\text{Upper} = 1.38 * \text{Optimal HM}$$

$$\text{Lower} = 0.83 * \text{Optimal HM}$$

- Fixed Swap, Inflation Swap and Real Swap:

$$\text{Optimal HM} = \text{Max}\{7 - YrTM * 0.2, 5.5 - YrTM * 0.1, 4.75 - YrTM * 0.075, 2.75 - YrTM * 0.025, 1\}$$

$$\text{Upper} = \text{Max}\{10 - YrTM * 0.3, 7.75 - YrTM * 0.15, 6.625 - YrTM * 0.1125, 3.625 - YrTM * 0.0375, 1\}$$

$$\text{Lower} = \text{Max}\{5 - YrTM * 0.13333, 4 - YrTM * 0.06667, 3.5 - YrTM * 0.05, 2.16667 - YrTM * 0.01667, 1\}$$

Methodology	LGIM Matching Plus Hedging Calculation		
LGIM Matching Plus: Proposed	<b>Hedging Multiples</b>		
	Index Family categorisation used in calculating Hedging Multiples		
	Index Family	Formula Categorisation	Effective Interest Rate Curve
	Leveraged Gilt, Leveraged Gilt+, Fixed Swap	Type A	OIS Curve, snapped at 0415 PMLDN
	Leveraged Linker, Leveraged Linker+, Real Swap	Type A	OIS Curve MINUS Inflation Swap Curve (real swap curve)
	Inflation Swap	Type B	Inflation Swap Curve, snapped at 0415 PMLDN
	Parameters used in calculating Hedging Multiples		
	Parameter	Value	
	d	Modified Duration of the underlying asset at Index Business day t	
	r	Interest rate from Effective Interest Rate Curve calculated at Index Business day t, effective at d at Index Business day t	
	ohr	Optimal headroom rate; 3.00%	
	llr	Lower limit rate; 0.50%	
	Parameter	Value	
	ulr	Upper limit rate; 0.50%	
ca	Collateral adjustment: <ul style="list-style-type: none"> <li>• 1.00% for the Fixed swap and Real swap funds</li> <li>• 0.50% for Inflation Swap funds</li> <li>• 0.00% for Leveraged Gilt and Leveraged Linker funds</li> </ul>		
<b>Hedging Multiple Upper Bound</b>			
The Hedging Multiple Upper Bounds are defined as below for various index families			
Categorisation	Upper Bound		
Type A	$MAX(1.2, MIN\left(1 - \left(\frac{1+r}{1+r+ohr+ca-ulr}\right)^d, 7.7\right))$		
Type B	$MAX(1.2, MIN\left(1 - \left(\frac{1+r-ohr-ca+ulr}{1+r}\right)^d, 7.7\right))$		
<b>Hedging Multiple Lower Bound</b>			
The Hedging Multiple Lower Bounds are defined as below for various index families			
Categorisation	Lower Bound		
Type A	$MAX(1.0, MIN\left(1 - \left(\frac{1+r}{1+r+ohr+ca+llr}\right)^d, 5.6\right))$		
Type B	$MAX(1.0, MIN\left(1 - \left(\frac{1+r-ohr-ca-llr}{1+r}\right)^d, 5.6\right))$		
<b>Optimal Hedging Multiple</b>			
The Optimal Hedging Multiple are defined as below for various index families			
Categorisation	Optimal Hedging Multiple		
Type A	$MAX(1.1, MIN\left(1 - \left(\frac{1+r}{1+r+ohr+ca}\right)^d, 6.5\right))$		
Type B	$MAX(1.1, MIN\left(1 - \left(\frac{1+r-ohr-ca}{1+r}\right)^d, 6.5\right))$		

Methodology		LGIM Matching Core Hedging Calculation	
LGIM Matching Core: Current	$Current\ HM = \frac{\sum_{i=1}^n BEV_i \times Position_i}{Index\ NAV_i}$ $Optimal\ HM = Max(1.5, Min(4.5 - \left(\frac{PV01}{10K} - 10\right) \times 0.05, 3.5 - \left(\frac{PV01}{10K} - 20\right) \times 0.1))$ $Upper\ HM = Optimal\ HM \times 1.40$ $Lower\ HM = Optimal\ HM \times 0.75$		
LGIM Matching Core: Proposed	<b>Index Leverage Rebalance Process</b> Index Family effective interest rate curves used in calculating Hedging Multiples		
	<b>Index Family</b>	<b>Effective Interest Rate Curve</b>	
	Short Fixed Long Fixed	OIS Curve, snapped at 0415 LDN	
	Short Real Long Real	OIS Curve - Inflation Swap Curve (snapped at 0415 LDN)	
	Parameters used in calculating Hedging Multiples		
	<b>Parameter</b>	<b>Value</b>	
	d	Modified Duration of the underlying instruments at Index Business day t	
	r	Interest rate from Effective Interest Rate Curve calculated at Index Business day t, effective at d at Index Business day t	
	ca	Collateral adjustment; 0.00%	
	ohr	Optimal headroom rate; 3.00%	
	llr	Lower limit rate; 0.50%	
	ulr	Upper limit rate; 0.50%	
	Hedging Multiples		
	<b>Term</b>	<b>Formula</b>	
	Optimal HM	$MAX(1.1, MIN\left[1 - \left(\frac{1+r}{1+r+ohr+ca}\right)^d, 6.5\right])$	
	Upper HM	$MAX(1.2, MIN\left[1 - \left(\frac{1+r}{1+r+ohr+ca-ulr}\right)^d, 7.7\right])$	
	Lower HM	$MAX(1.0, MIN\left[1 - \left(\frac{1+r}{1+r+ohr+ca+llr}\right)^d, 5.6\right])$	

## IMPACT ANALYSIS

IMBA analyzed the impact of the proposed changes for the time period between June 1, 2022 and November 18, 2022, for selected indices and found that:

- The proposed rules reduced the leverage of the index at the beginning and controlled the leverage at a low level over time
- The proposed rules attempt to address the risks to LDI strategy resilience from volatility in the long-dated gilt markets that put pressure on pension schemes.
- The proposed rules set the boundary between upper and lower hedging multiples much tighter

A detailed impact analysis using the proposed changes can be found [here](#).

## **IMPLEMENTATION TIMING**

IMBA is proposing to implement the previously described methodology changes, if adopted, on **Monday, December 19, 2022**.

## **QUESTIONS**

Please answer the following questions and provide IMBA with the reasoning behind your answers:

- 1. Do you agree with the proposal to update the methodology of the LGIM Matching Plus and Core indices?**
- 2. Should the proposed methodology changes be adopted, do you agree with the proposed implementation date?**
- 3. Do you have any other comments or feedback regarding the proposed changes outlined above?**

Your participation in this consultation is important as we gather information from various market participants in order to properly evaluate your views and preferences on the proposal herein and the suggested timetable for its implementation. Please respond to this survey by **December 15, 2022**. After this date, IMBA will no longer accept survey responses. Prior to the Index Committee's final review, IMBA may request clarifications from respondents as part of that review.

To participate in this consultation, please visit the online survey available [here](#).

IMBA may publish summaries of stakeholders' comments along with IMBA's responses to those comments unless the stakeholder in question expressly requests confidentiality.

*Please be advised that all comments will be reviewed and considered before a final decision is made; however, IMBA makes no guarantee and is under no obligation to comply with any of the responses. The consultation may result in no changes or outcome of any kind. If IMBA decides to change the index methodology, an announcement will be posted on our website. IMBA reserves the right to make a final decision on the proposal.*

Thank you for taking the time to complete this survey.

For further information about this consultation, please contact IMBA at [SPDJI\\_Index\\_Governance@spglobal.com](mailto:SPDJI_Index_Governance@spglobal.com).

FOR MORE INFORMATION: [indices@ihsmarkit.com](mailto:indices@ihsmarkit.com)