STOXX

DEUTSCHE BÖRSE GROUP

iSTOXX® RiskFirst LDI Indices

Independent UK LDI bond indices address the challenges of a £1 trillion market

April 2018

Content

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iSTOXX RiskFirst LDI Indices Overview

iSTOXX RiskFirst LDI Indices

Key facts

- **iSTOXX RiskFirst LDI Indices represent the first independent suite of liability-driven indices for UK DB pension schemes**
- **The aim is to serve as independent benchmarks and investable building blocks for UK pension scheme LDI portfolios**
- **iSTOXX RiskFirst LDI Indices track the performance of government or corporate bonds denominated in GBP**

Key features

- A broad range of indices (gilts and non-gilts) are based on 12 liability cash-flow profiles
- This is the first index offering that provides an investable proposition based on target liability profiles
- The indices benefit from a combination of STOXX' real-time calculation capabilities and a unique set of data provided by RiskFirst

Methodology

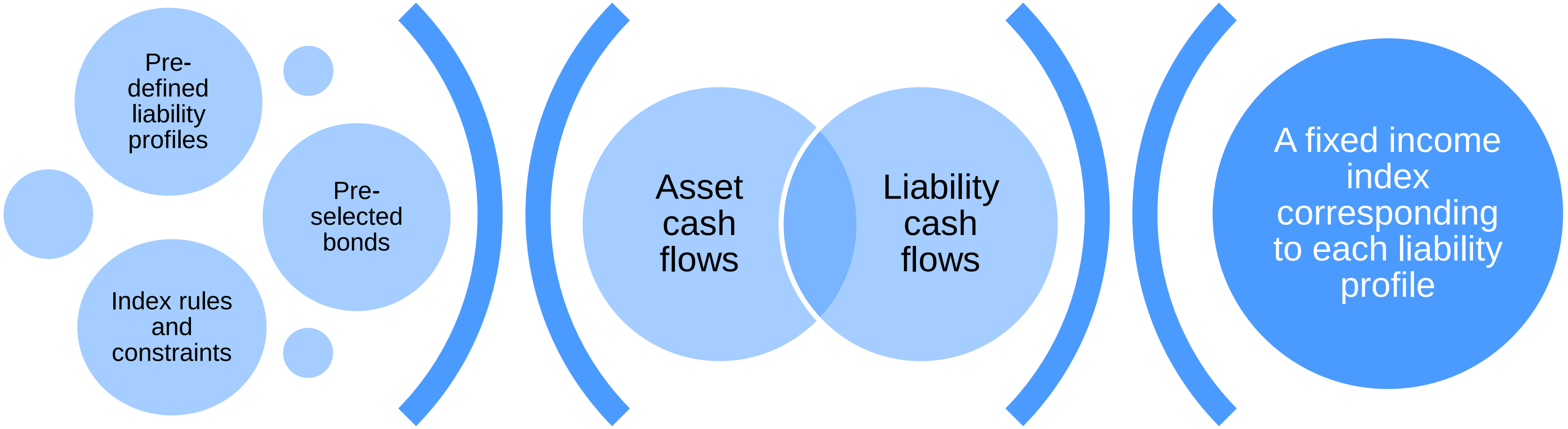
- The indices are constructed using a proprietary cash-flow matching optimization model
- The optimizer matches eligible bonds to 12 profiles that were selected to provide the building blocks required to construct appropriate LDI benchmarks for UK pension plans
- Data from over 4,000 UK pension scheme liability tranches is used in the process
- The indices have been developed as a result of a research- and data-driven collaboration between STOXX Ltd. and RiskFirst Group Limited

Benefits and use cases at a glance

- Independent point of reference for the UK DB pension industry
- Manager monitoring and portfolio analysis
- Help to provide a closer match between assets and liabilities
- Building block for LDI mandates and pooled funds

STOXX and RiskFirst come together to bring a new LDI solution to the UK market

Big data, sophisticated technology and innovative indexing



Pre-selection

- Pre-selection process focuses on investability of selected bonds
- Liability profiles selected using data from over 4,000 UK pension plan benefit profiles

Cash flow matching model

- For each liability cash-flow profile, bonds are selected in order to match the annual liability cash flows
- Real and nominal cash flows are considered separately

iSTOXX RiskFirst LDI Indices

- Four different sets of indices will be calculated: nominal gilt indices, inflation-linked gilt indices, blended indices and non-gilt indices

STOXX as your partner for LDI

Key strengths and track record

- Leading regional and global benchmark indices, e.g. EURO STOXX 50, STOXX Europe 600 and DAX®
- STOXX and DAX indices licensed to more than 600 companies around the world as underlyings for exchange-traded funds (ETFs), futures and options, structured products and passively managed investment funds
- Three of the top ETFs in Europe and approximately 25% of all assets under management are based on STOXX indices
- Holds Europe’s number one and the world’s number two position in the derivatives segment
- First bond indices launched in 1991
- For more information please visit www.stoxx.com

STOXX currently calculates more than 2,500 bond indices in real-time.

RiskFirst as your partner for LDI

Key strengths and track record

- RiskFirst is a UK-based financial technology business providing intuitive, user-friendly and powerful analytical tools to the pensions and investment market
- RiskFirst's solution PFaroe, launched in 2009, is now the market leader in the UK with a growing foothold in the US
- RiskFirst technology is used by more than 1,800 pension plans, with in excess of $750 billion of liabilities
- Universe of over 4,000 UK pension scheme benefit tranches used to select representative set of liability profiles
- The technology is unique in its asset owner focus and brings together asset owners, consultants and asset managers
- For more information please visit www.riskfirst.com

RiskFirst

RiskFirst analytical tools are a market leader – reaching more than half the UK defined benefit market.

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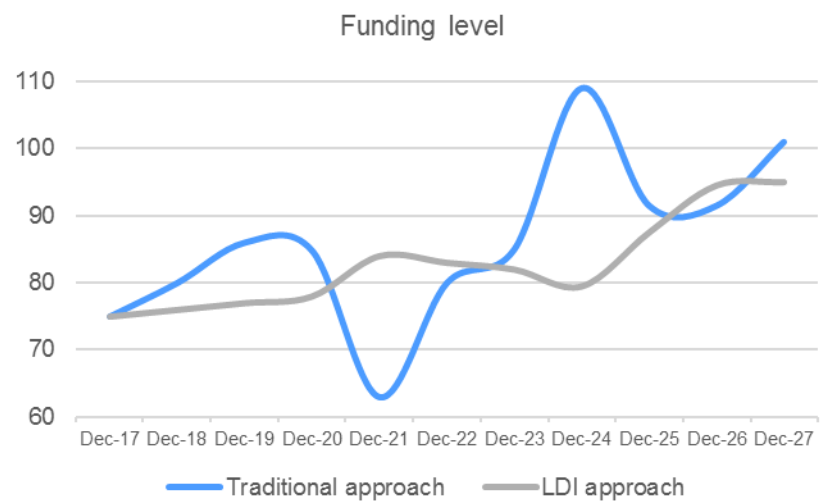
Liability-driven investing in the UK

LDI is about investing in the context of liabilities

Interest rate risk and inflation are key risks

- LDI approaches investment from the perspective of the liabilities
- Pension liabilities typically stretch over many decades, and their present value is directly linked to inflation, interest rates and the longevity of the scheme's members
- Changes to interest rates and inflation represent two of the largest risks to scheme funding levels
- LDI portfolios are constructed to exhibit the same interest rate and inflation sensitivity as the liabilities – immunizing pension schemes from such risks
- By managing cross balance sheet risk, LDI helps pension schemes meet their ultimate objectives with lower levels of funding level volatility

Creating a smoother path to the funding objective



Source: RiskFirst

Trends in the UK LDI market

Source: KPMG Liability Driven Investment (LDI) survey 2017

“Our survey finds that there appears to be no end to growth for LDI, a strategy that is all about efficiently controlling risks in pension schemes.” KPMG

- Despite index-linked gilt yields falling to their lowest point this century, more and more pension schemes are using LDI as a risk management too

- 1,808 pension schemes now use LDI as a part of their investment strategy – growth of 27% over the year

- There was £908 billion of exposure to LDI from UK pension schemes as at 31 December 2016, up from £739 billion in December 2015

- Almost all participants identified regulation as the most important issue facing the industry this year

Challenges in the UK LDI market

Three key areas

Governance

- **Absence of an independent benchmark of reference**

  Schemes and asset managers have to rely on benchmarks developed by the asset manager – no independent oversight

- **Comparison between different LDI providers**

  There is no transparent and objective way for trustees to determine how their LDI managers are performing for the scheme and relative to competitors

- **Reporting lagging behind other asset classes**

  LDI is managed very differently to all other asset classes, with performance reporting that is unfamiliar and inconsistent with market best practice – significant barrier to adoption for stakeholders unfamiliar with UK LDI market

Methodology

- **Information leakage**

  The current approaches oversimplify the liability characteristics and end up losing a lot of vital information about the liability profile – LDI implementations are sub-optimal

- **Liabilities and LDI portfolios diverge over time**

  Even for the most customized LDI mandates, due to the infrequency of reviewing the liabilities relative to the LDI portfolio, the drift between assets and liabilities becomes significant over time

Portfolio construction

- **Approach to inefficient portfolio construction**

  LDI strategies are custom-designed (typically by investment managers) for all LDI mandates, for schemes of all sizes and objectives. This is costly and time-consuming and doesn’t leverage commonality across pension plans

- **Lack of clarity on roles and responsibilities**

  Unclear as to which party has the legal responsibility/liability for different aspects of the LDI process

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iSTOXX RiskFirst LDI Indices provide a solution for LDI investing

iSTOXX RiskFirst LDI Indices provide solutions

The LDI indices offer a market standard benchmark

Governance

Solution:

Independent benchmarks for better governance and manager monitoring

- Due to their independence and sophisticated methodology, our LDI indices aim to become a reference for LDI portfolios
- The LDI indices allow schemes to monitor and compare LDI managers more effectively leading to significant improvement in governance – including assessing performance fees
- Currently, LDI portfolios have not received the same level of scrutiny as other parts of the portfolio

Methodology

Solution:

Best-in-class approach to LDI helps provide a closer hedge to liabilities

- Use of a best-in-class cash-flow matching approach provides a closer match between assets and liabilities
- The split between real/nominal exposure is rebalanced quarterly and embedded within the index, significantly reducing basis risk between the liability and asset profiles
- Less information leakage due to a range of pre- and post-retirement indexation options and aging profiles minimizes rebalancing

Portfolio construction

Solution:

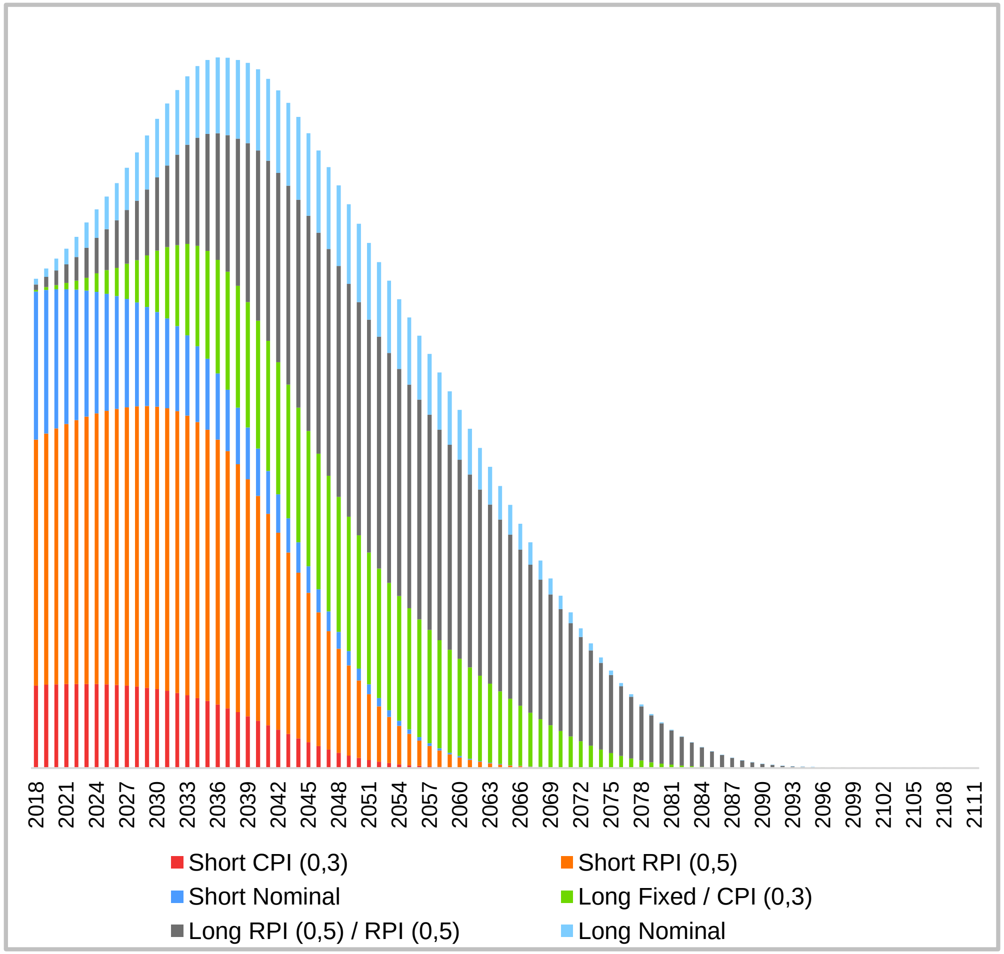
LDI indices serve as building blocks for construction of tailored LDI solutions

- A tailored combination of the various LDI indices, based on the nature, duration and shape of the liabilities, can become the investable benchmark for LDI allocation
- Managers can manage passively or actively relative to the benchmark
- Clarity of roles and responsibilities between consultants (set strategy), index provider (provide investable benchmark) and asset managers (implement)
- Similar to existing profile funds but importantly delivers a common set of building blocks across the market

Illustration for an "average" pension scheme (1/2)

Developing an investable benchmark by using LDI indices

Underlying liability profiles combine to replicate an "average" pension scheme..



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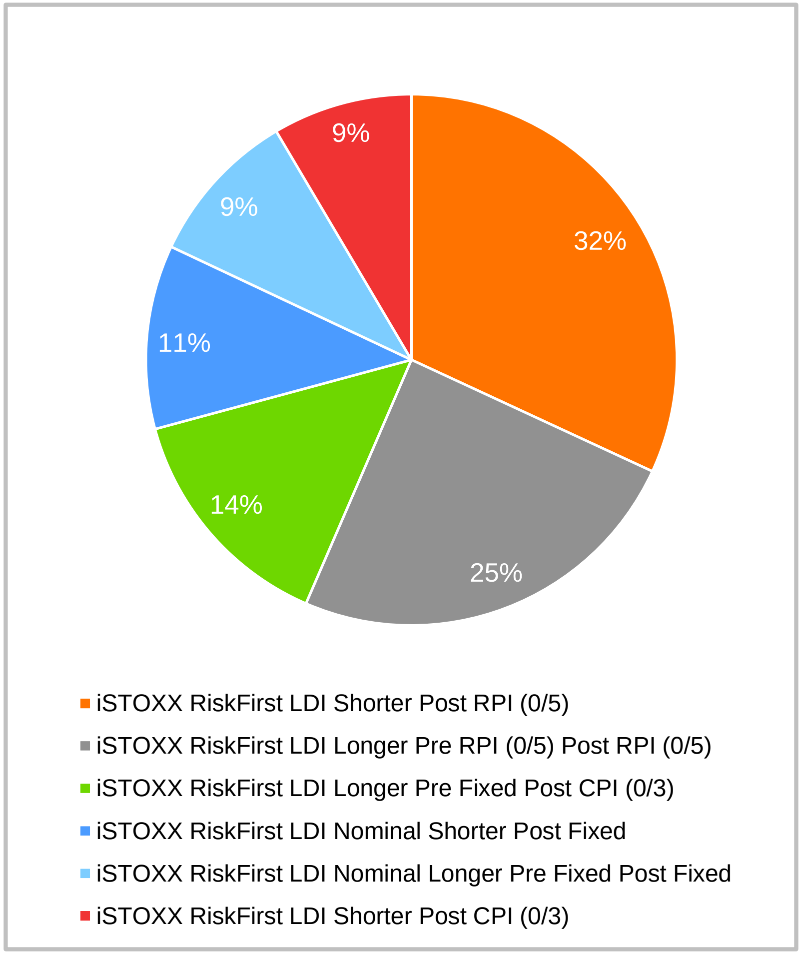
.. with the indices offering an independent investable benchmark



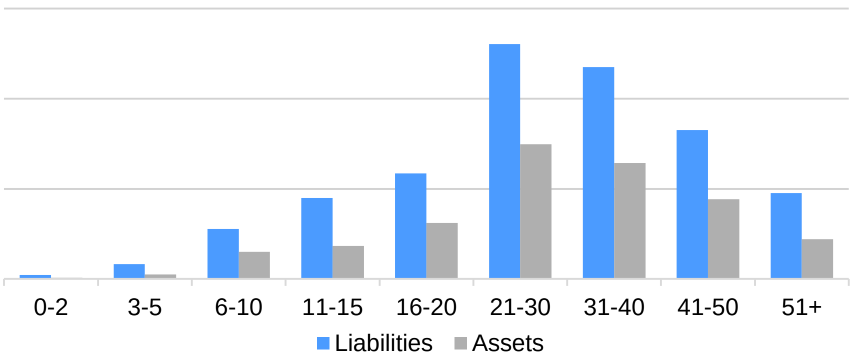
Source: RiskFirst

Illustration for an “average” pension scheme (2/2)

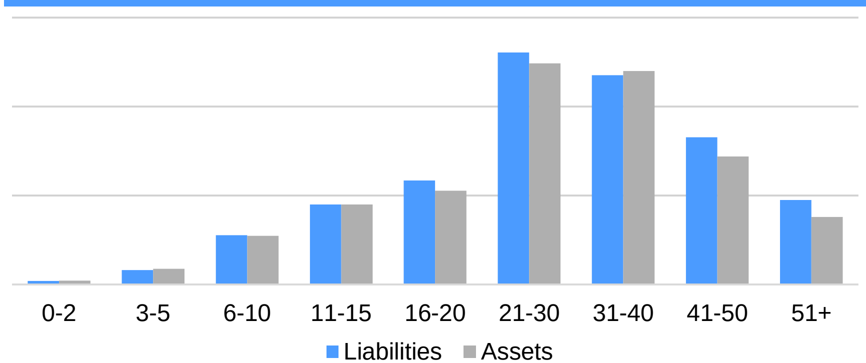
A closer match for interest rate and inflation sensitivities

Interest rate sensitivity

Before LDI

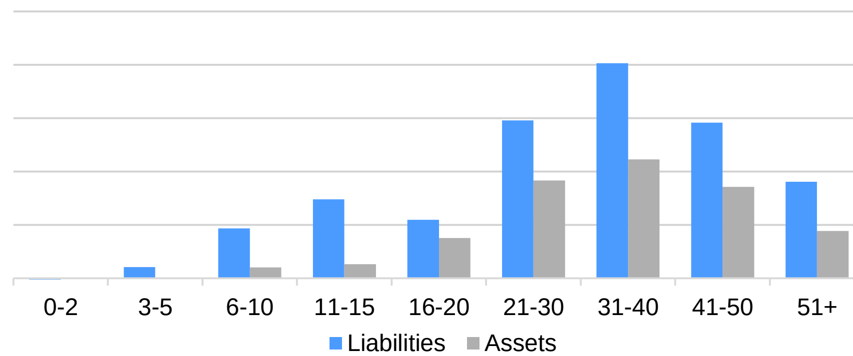


After LDI

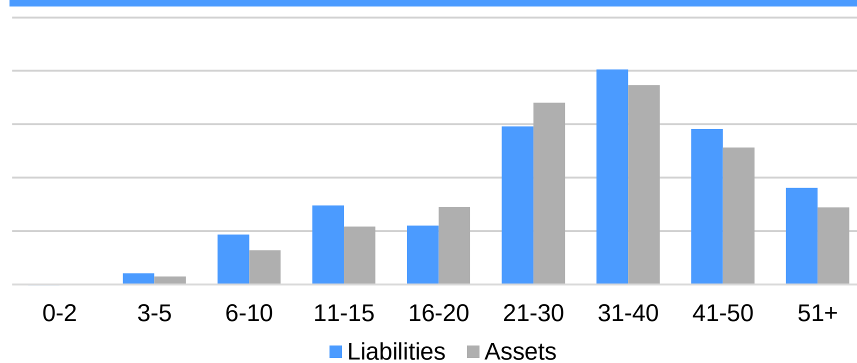


Inflation sensitivity

Before LDI



After LDI



Source: RiskFirst

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Index family overview and methodology

Liability profiles representing UK DB pension landscape

Data for over 4,000 benefit tranches used for analysis

Profile name	Member type	Pre-retirement indexation	Post-retirement indexation
Long RPI	Deferred	RPI	RPI
Short RPI	Pensioner	n/a	RPI
Tax Free Cash	Deferred	RPI (0,5%)	n/a
Long Nominal*	Deferred	Fixed	Fixed
Long Nominal Non-Gilts*	Deferred	Fixed	Fixed
Short Nominal**	Pensioner	n/a	Fixed
Short Nominal Non-Gilts**	Pensioner	n/a	Fixed
Long Fixed / CPI (0,3)	Deferred	Fixed	CPI (0,3%)
Long RPI (0,5) / RPI (0,2.5)	Deferred	RPI (0,5%)	RPI (0,2.5%)
Long RPI (0,5) / Fixed	Deferred	RPI (0,5%)	Fixed
Long RPI (0,5) / RPI (0,5)	Deferred	RPI (0,5%)	RPI (0,5%)
Short RPI (0,2.5)	Pensioner	n/a	RPI (0,2.5%)
Short RPI (0,5)	Pensioner	n/a	RPI (0,5%)
Short CPI (0,3)	Pensioner	n/a	CPI (0,3%)

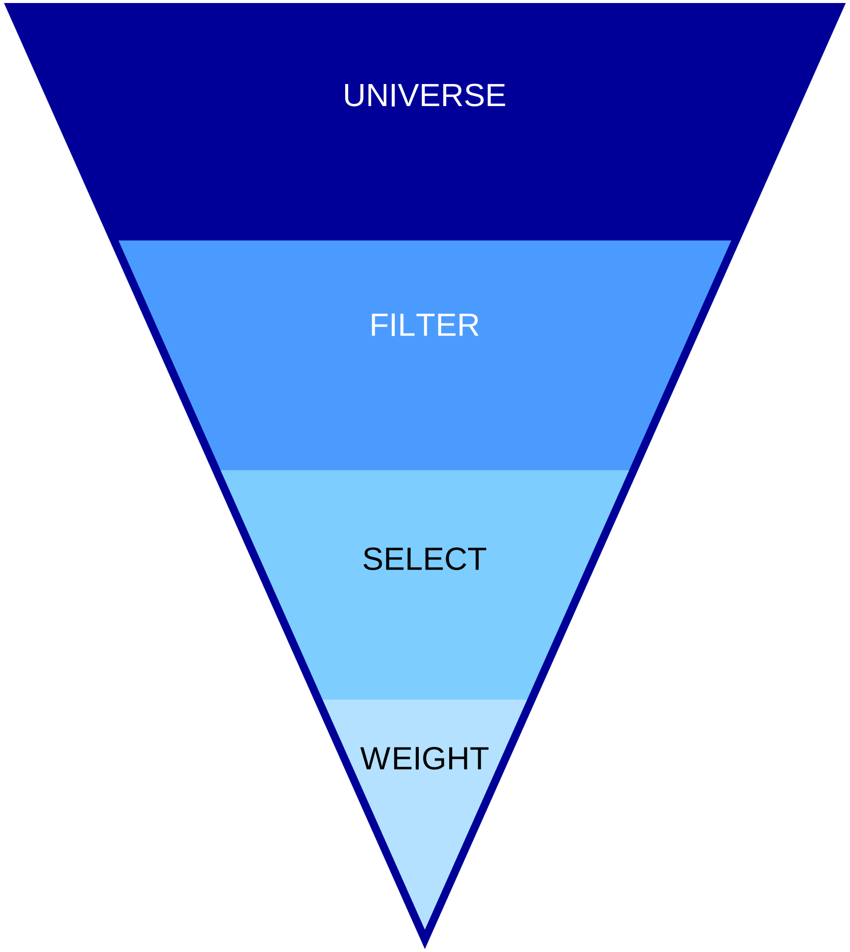
Extensive suite of liability cash-flow profiles offers granular building blocks for schemes

- A set of representative liability cash-flow profiles are selected such that the duration, inflation sensitivity and tax free cash component of a typical UK pension scheme can be captured
- A wide range of profiles that account for variations in pre- and post-retirement indexation serve to represent majority of the UK DB pension liabilities

* Long Nominal and Long Nominal Non-Gilts are based on the same same liability profile. ** Short Nominal and Short Nominal Non-Gilts are based on the same liability profile.

Overview of the index methodology

Selection criteria based on bond type, currency, country, credit rating, time to maturity and nominal amount outstanding



Universe

- Corporate and government bonds (only GBP denominated)
- Bond type: fixed and zero-coupon bonds for nominal indices, inflation-linked gilts for index-linked indices, corporates and other non-gilt government bonds for non-gilt indices only
- Rating: investment grade (consolidated rating BBB or higher) – only applicable to the non-gilt indices
- Time to maturity: at least 15 months measured from the respective re-balancing date
- Amount outstanding: minimum GBP 500 million

Filter and select

- Optimization algorithm is used to define which bonds from the selection list are chosen as final index constituents

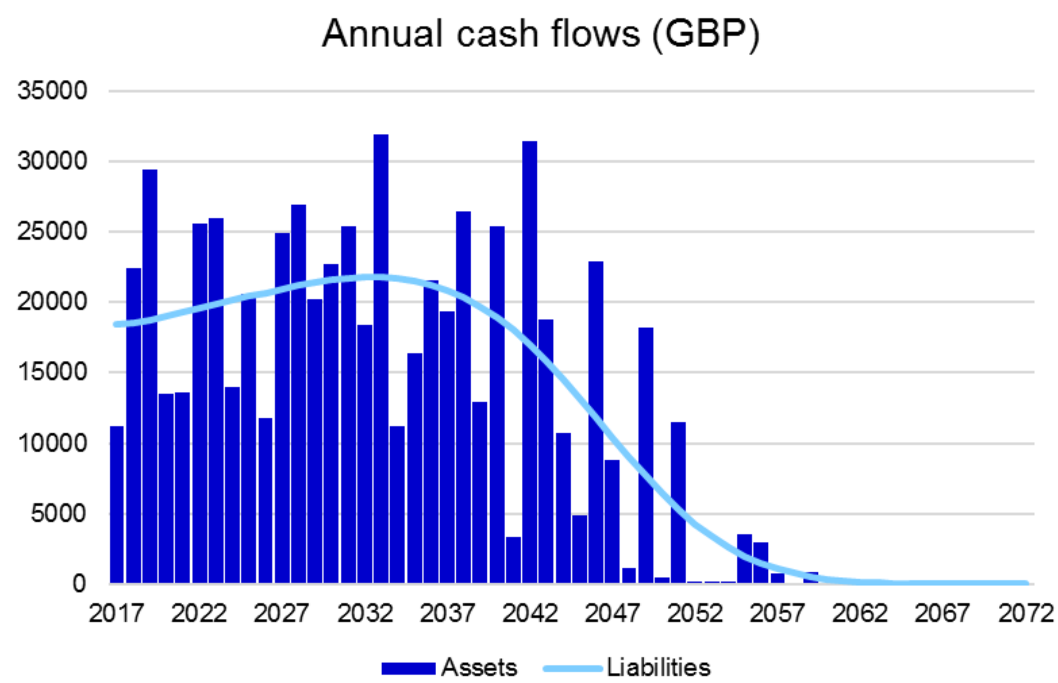
Weight

- Weights of the index constituents determined by optimization model – targeting a cash-flow match to the liability cash-flow profile
- For gilt-based indices, 30% bond capping and a minimum number of six bonds is applied
- For non-gilt-based indices, 20% issuer capping is applied

iSTOXX RiskFirst LDI cash-flow matching model

Incorporates best-in-class features of LDI portfolio construction

- Universe of over 4,000 UK pension scheme benefit tranches used to select representative set of liability profiles
- Profiles selected such that the duration, inflation sensitivity and tax free cash component of a typical scheme can be captured
- Optimal set of bonds backing each profile determined using proprietary cash-flow matching optimization model
- Cash flows grouped into the calendar years where bonds are maturing
- Tail of liability profile hedged with longest-dated bond
- Real/nominal cash-flow splits recalculated quarterly to reduce asset-liability profile drift
- Real and nominal cash flows considered separately for cash-flow matching purposes



Source: RiskFirst

Overview of the iSTOXX RiskFirst LDI Indices

14 main indices developed using the iSTOXX RiskFirst LDI cash-flow matching model

Indices	Duration	Bonds*	Pre-retirement indexation	Post-retirement indexation
iSTOXX RiskFirst LDI Real Longer Pre RPI Post RPI	Long	ILG	RPI	RPI
iSTOXX RiskFirst LDI Real Shorter Post RPI	Short	ILG	n/a	RPI
iSTOXX RiskFirst LDI Real Cash Pre RPI (0/5)	n/a	ILG	RPI (0,5%)	n/a
iSTOXX RiskFirst LDI Nominal Longer Pre Fixed Post Fixed	Long	Gilts	Fixed	Fixed
iSTOXX RiskFirst LDI Non-Gilts Nominal Longer Pre Fixed Post Fixed	Long	Non-gilts	Fixed	Fixed
iSTOXX RiskFirst LDI Nominal Shorter Post Fixed	Short	Gilts	n/a	Fixed
iSTOXX RiskFirst LDI Non-Gilts Nominal Shorter Post Fixed	Short	Non-gilts	n/a	Fixed
iSTOXX RiskFirst LDI Longer Pre Fixed Post CPI (0/3)	Long	Gilts/ILG	Fixed	CPI (0,3%)
iSTOXX RiskFirst LDI Longer Pre RPI (0/5) Post RPI (0/2.5)	Long	Gilts/ILG	RPI (0,5%)	RPI (0,2.5%)
iSTOXX RiskFirst LDI Longer Pre RPI (0/5) Post Fixed	Long	Gilts/ILG	RPI (0,5%)	Fixed
iSTOXX RiskFirst LDI Longer Pre RPI (0/5) Post RPI (0/5)	Long	Gilts/ILG	RPI (0,5%)	RPI (0,5%)
iSTOXX RiskFirst LDI Shorter Post RPI (0/2.5)	Short	Gilts/ILG	n/a	RPI (0,2.5%)
iSTOXX RiskFirst LDI Shorter Post RPI (0/5)	Short	Gilts/ILG	n/a	RPI (0,5%)
iSTOXX RiskFirst LDI Shorter Post CPI (0/3)	Short	Gilts/ILG	n/a	CPI (0,3%)

Note: All indices available in GBP and in Price and Total Return versions
* ILG refers to inflation-linked gilts, and gilts refers to nominal gilts

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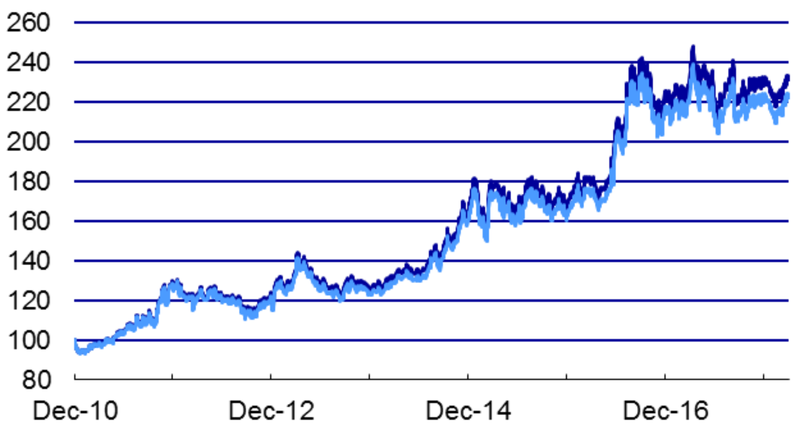
Performance and analytics

iSTOXX RiskFirst LDI Real Longer Pre RPI Post RPI

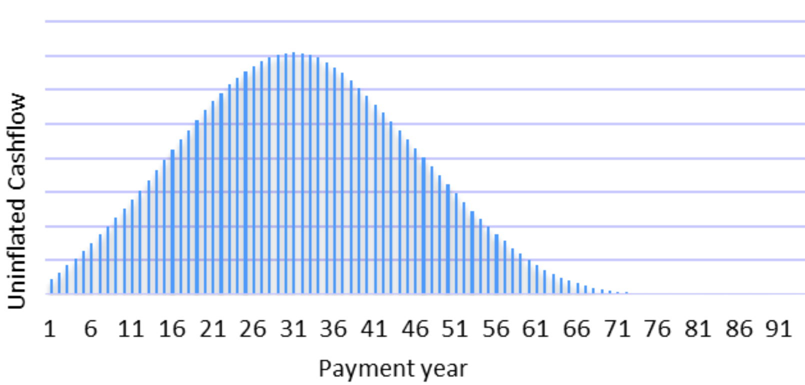
Index Performance[1)]



Descriptive statistics[1)]

	iSTOXX RiskFirst LDI Real Longer Pre RPI Post RPI TR	iSTOXX RiskFirst LDI Real Longer Pre RPI Post RPI PR
Return 1y (ann.)	-2.11%	-2.42%
Return 3y (ann.)	9.37%	8.98%
Return Overall (ann.)	12.33%	11.73%
Volatility 1y (ann.)	15.79%	15.80%
Volatility 3y (ann.)	17.29%	17.31%
Volatility Overall (ann.)	15.48%	15.50%
Sharpe Ratio 1y[2)]	-0.08	-0.10
Sharpe Ratio 3y[2)]	0.58	0.56
Sharpe Ratio Overall[2)]	0.80	0.76
Maximum Drawdown Overall	15.21%	15.46%
Turnover 1y (average of 3y)	7.87%	

Real Longer Pre RPI Post RPI[3)]



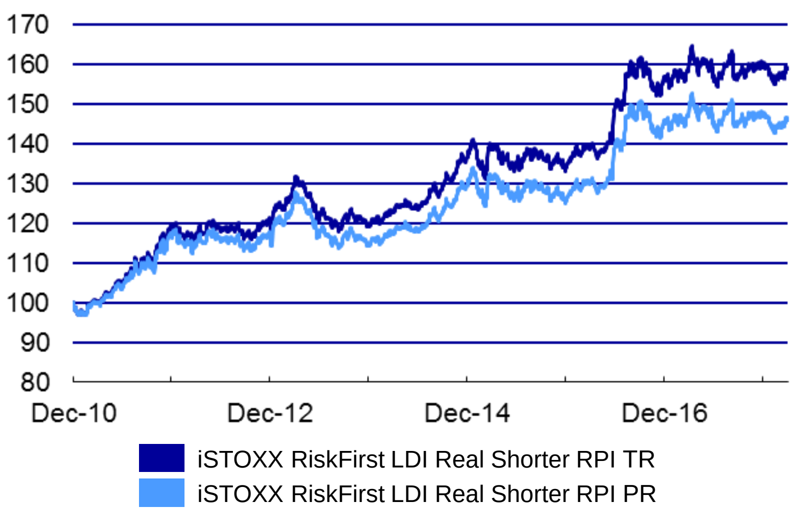
Weighted average index analytics[1)]

Weighted Average Bid **Yield to Maturity**	-1.626
Weighted Average Bid **Duration**	31.535
Weighted Average Bid **Modified Duration**	32.056
Weighted Average Bid **Convexity**	12.162
Weighted Average **Remaining Time to Maturity**	31.676
Weighted Average **Coupon**	0.489

1) STOXX data as of Apr. 03, 2018. Annualized returns and annualized volatility (standard deviation) figures are used
2) ICE LIBOR GBP 1 Month rate used
3) UK schemes modelled on PFaroe at 31.12.2016

iSTOXX RiskFirst LDI Real Shorter Post RPI

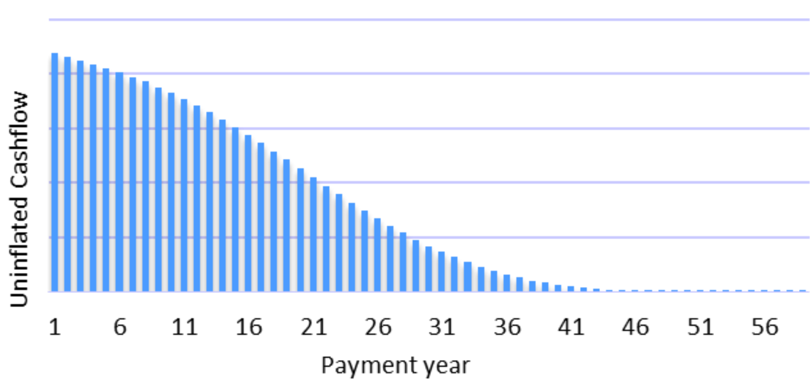
Index performance[1)]



Descriptive statistics[1)]

	iSTOXX RiskFirst LDI Real Shorter RPI TR	iSTOXX RiskFirst LDI Real Shorter RPI PR
Return 1y (ann.)	-1.20%	-2.11%
Return 3y (ann.)	4.70%	3.72%
Return Overall (ann.)	6.64%	5.41%
Volatility 1y (ann.)	6.77%	6.79%
Volatility 3y (ann.)	7.58%	7.60%
Volatility Overall (ann.)	7.19%	7.21%
Sharpe Ratio 1y[2)]	-0.20	-0.33
Sharpe Ratio 3y[2)]	0.59	0.46
Sharpe Ratio Overall[2)]	0.86	0.70
Maximum Drawdown Overall	10.57%	11.10%
Turnover 1y (average of 3y)	10.70%	

Real Shorter Post RPI[3)]



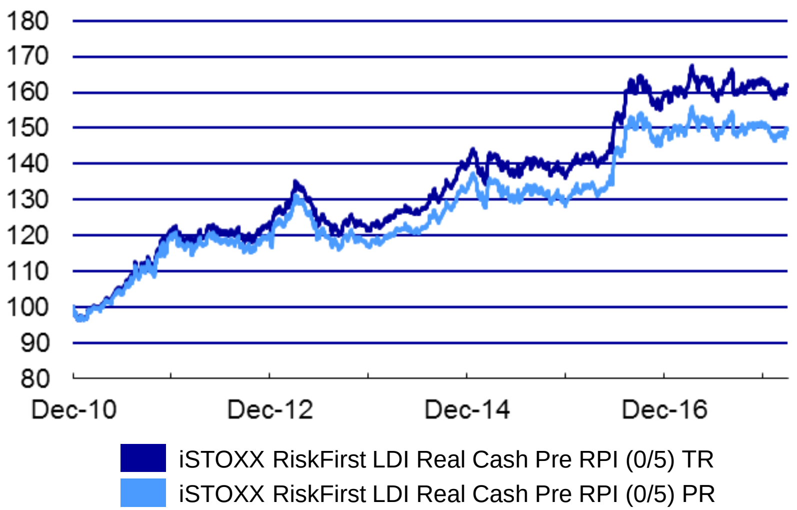
Weighted average index analytics[1)]

Weighted Average Bid **Yield to Maturity**	-1.647
Weighted Average Bid **Duration**	13.736
Weighted Average Bid **Modified Duration**	13.966
Weighted Average Bid **Convexity**	2.918
Weighted Average **Remaining Time to Maturity**	14.196
Weighted Average **Coupon**	1.268

1) STOXX data as of Apr. 03, 2018. Annualized returns and annualized volatility (standard deviation) figures are used
2) ICE LIBOR GBP 1 Month rate used
3) UK schemes modelled on PFaroe at 31.12.2016

iSTOXX RiskFirst LDI Real Cash Pre RPI (0/5)

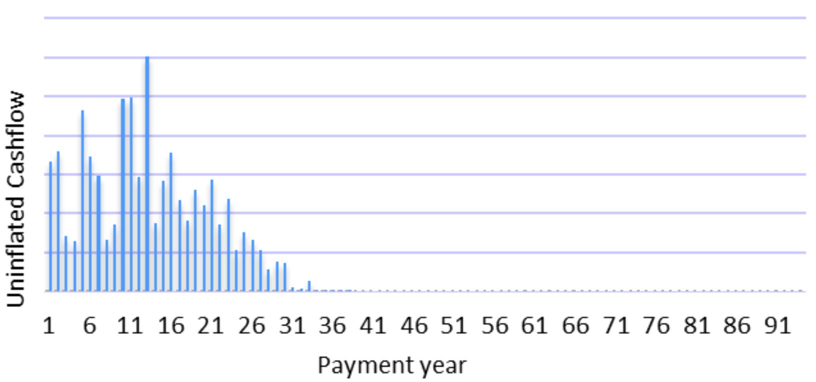
Index Performance[1)]



Descriptive statistics[1)]

	iSTOXX RiskFirst LDI Real Cash Pre RPI (0/5) TR	iSTOXX RiskFirst LDI Real Cash Pre RPI (0/5) PR
Return 1y (ann.)	-1.15%	-2.03%
Return 3y (ann.)	4.58%	3.62%
Return Overall (ann.)	6.92%	5.76%
Volatility 1y (ann.)	6.57%	6.59%
Volatility 3y (ann.)	7.41%	7.43%
Volatility Overall (ann.)	7.46%	7.48%
Sharpe Ratio 1y[2)]	-0.20	-0.33
Sharpe Ratio 3y[2)]	0.59	0.46
Sharpe Ratio Overall[2)]	0.87	0.72
Maximum Drawdown Overall	11.29%	11.77%
Turnover 1y (average of 3y)	9.75%	

Real Cash Pre RPI (0/5)[3)]



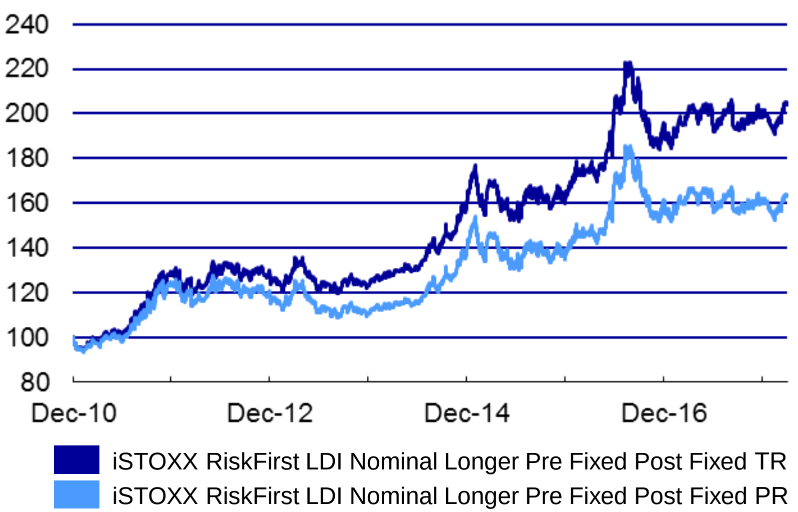
Weighted average index analytics[1)]

Weighted Average Bid **Yield to Maturity**	-1.653
Weighted Average Bid **Duration**	12.999
Weighted Average Bid **Modified Duration**	13.218
Weighted Average Bid **Convexity**	2.387
Weighted Average **Remaining Time to Maturity**	13.558
Weighted Average **Coupon**	1.222

1) STOXX data as of Apr. 03, 2018. Annualized returns and annualized volatility (standard deviation) figures are used
2) ICE LIBOR GBP 1 Month rate used
3) UK schemes modelled on PFaroe at 31.12.2016

iSTOXX RiskFirst LDI Nominal Longer Pre Fixed Post Fixed

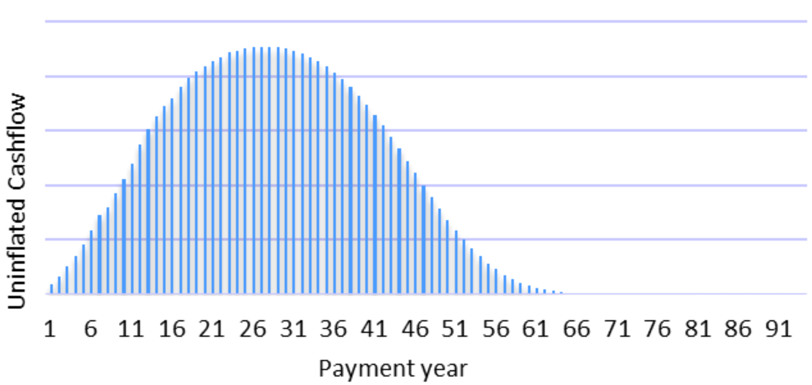
Index Performance[1)]



Descriptive statistics[1)]

	iSTOXX RiskFirst LDI Nominal Longer Pre Fixed Post Fixed TR	iSTOXX RiskFirst LDI Nominal Longer Pre Fixed Post Fixed PR
Return 1y (ann.)	0.35%	-2.13%
Return 3y (ann.)	6.72%	3.96%
Return Overall (ann.)	10.43%	7.03%
Volatility 1y (ann.)	10.84%	10.92%
Volatility 3y (ann.)	14.82%	14.94%
Volatility Overall (ann.)	13.72%	13.84%
Sharpe Ratio 1y[2)]	0.05	-0.18
Sharpe Ratio 3y[2)]	0.49	0.31
Sharpe Ratio Overall[2)]	0.76	0.52
Maximum Drawdown Overall	17.60%	18.40%
Turnover 1y (average of 3y)	11.28%	

Nominal Longer Pre Fixed Post Fixed[3)]



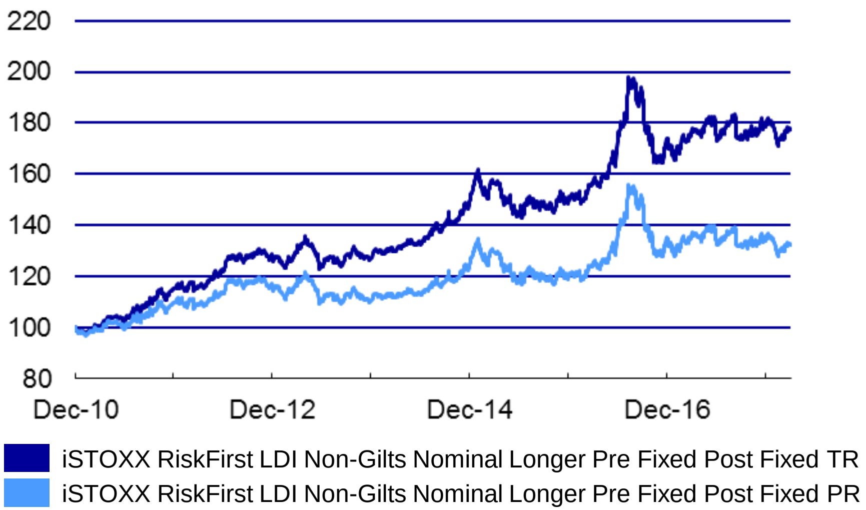
Weighted average index analytics[1)]

Weighted Average Bid **Yield to Maturity**	1.642
Weighted Average Bid **Duration**	22.074
Weighted Average Bid **Modified Duration**	21.718
Weighted Average Bid **Convexity**	6.558
Weighted Average **Remaining Time to Maturity**	32.885
Weighted Average **Coupon**	3.545

1) STOXX data as of Apr. 03, 2018. Annualized returns and annualized volatility (standard deviation) figures are used
2) ICE LIBOR GBP 1 Month rate used
3) UK schemes modelled on PFaroe at 31.12.2016

iSTOXX RiskFirst LDI Non-Gilts Nominal Longer Pre Fixed Post Fixed

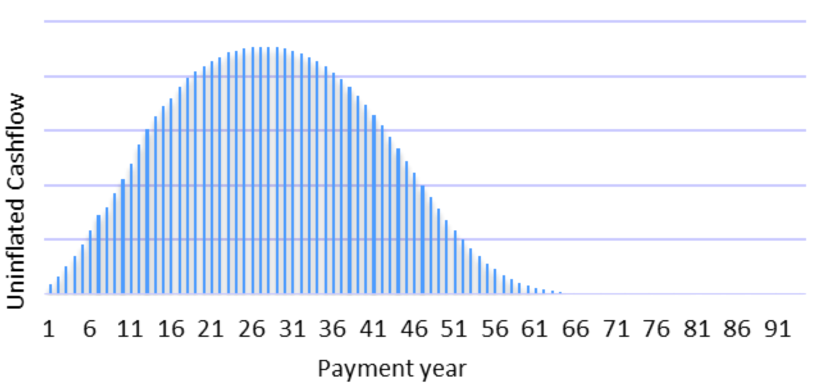
Index Performance[1)]



Descriptive statistics[1)]

	iSTOXX RiskFirst LDI Non-Gilts Nominal Longer Pre Fixed Post Fixed TR	iSTOXX RiskFirst LDI Non-Gilts Nominal Longer Pre Fixed Post Fixed PR
Return 1y (ann.)	-0.46%	-3.69%
Return 3y (ann.)	4.34%	0.75%
Return Overall (ann.)	8.29%	3.96%
Volatility 1y (ann.)	9.10%	9.24%
Volatility 3y (ann.)	11.07%	11.26%
Volatility Overall (ann.)	9.18%	9.35%
Sharpe Ratio 1y[2)]	-0.05	-0.40
Sharpe Ratio 3y[2)]	0.40	0.09
Sharpe Ratio Overall[2)]	0.86	0.41
Maximum Drawdown Overall	17.10%	18.22%
Turnover 1y (average of 3y)	39.56%	

Non-Gilts Nominal Longer Pre Fixed Post Fixed[3)]



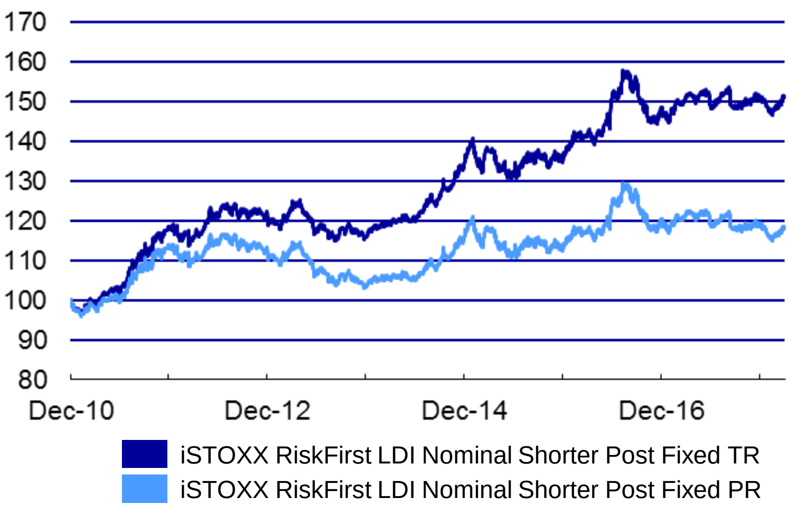
Weighted average index analytics[1)]

Weighted Average Bid **Yield to Maturity**	2.905
Weighted Average Bid **Duration**	19.218
Weighted Average Bid **Modified Duration**	18.676
Weighted Average Bid **Convexity**	5.168
Weighted Average **Remaining Time to Maturity**	31.968
Weighted Average **Coupon**	3.743

1) STOXX data as of Apr. 03, 2018. Annualized returns and annualized volatility (standard deviation) figures are used
2) ICE LIBOR GBP 1 Month rate used
3) UK schemes modelled on PFaroe at 31.12.2016

iSTOXX RiskFirst LDI Nominal Shorter Post Fixed

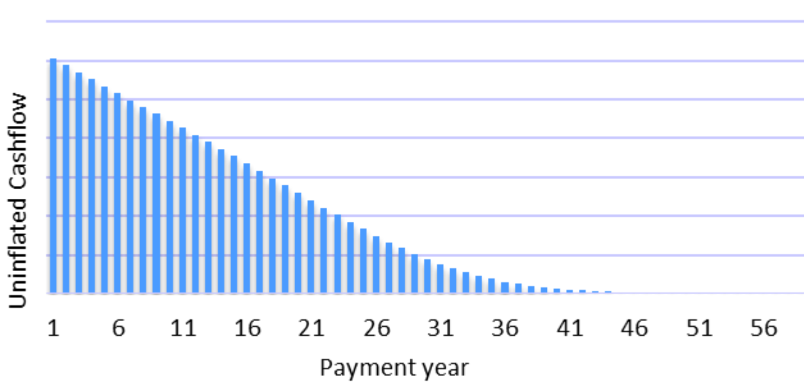
Index Performance[1)]



Descriptive statistics[1)]

	iSTOXX RiskFirst LDI Nominal Shorter Post Fixed TR	iSTOXX RiskFirst LDI Nominal Shorter Post Fixed PR
Return 1y (ann.)	-0.57%	-3.44%
Return 3y (ann.)	3.22%	0.16%
Return Overall (ann.)	5.89%	2.34%
Volatility 1y (ann.)	5.20%	5.24%
Volatility 3y (ann.)	7.17%	7.24%
Volatility Overall (ann.)	6.95%	7.01%
Sharpe Ratio 1y[2)]	-0.15	-0.71
Sharpe Ratio 3y[2)]	0.42	0.00
Sharpe Ratio Overall[2)]	0.79	0.29
Maximum Drawdown Overall	8.58%	11.73%
Turnover 1y (average of 3y)	19.24%	

Nominal Shorter Post Fixed[3)]



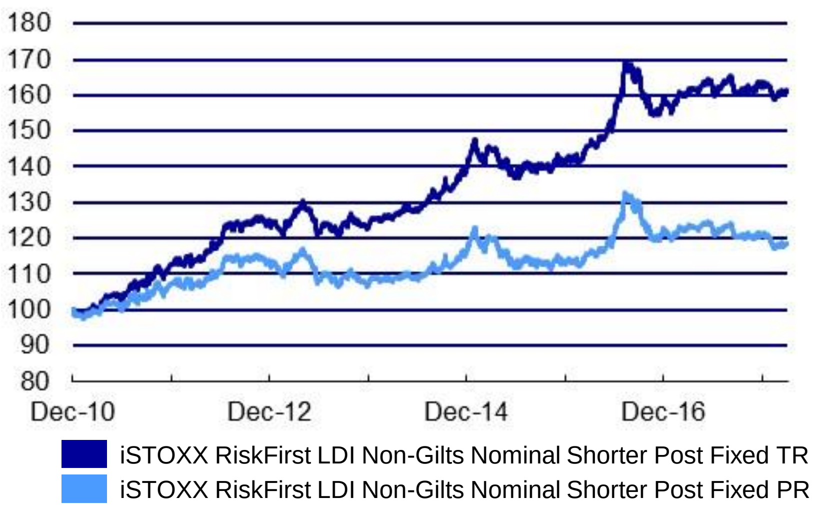
Weighted average index analytics[1)]

Weighted Average Bid **Yield to Maturity**	1.577
Weighted Average Bid **Duration**	10.380
Weighted Average Bid **Modified Duration**	10.219
Weighted Average Bid **Convexity**	1.766
Weighted Average **Remaining Time to Maturity**	12.569
Weighted Average **Coupon**	3.550

1) STOXX data as of Apr. 03, 2018. Annualized returns and annualized volatility (standard deviation) figures are used
2) ICE LIBOR GBP 1 Month rate used
3) UK schemes modelled on PFaroe at 31.12.2016

iSTOXX RiskFirst LDI Non-Gilts Nominal Shorter Post Fixed

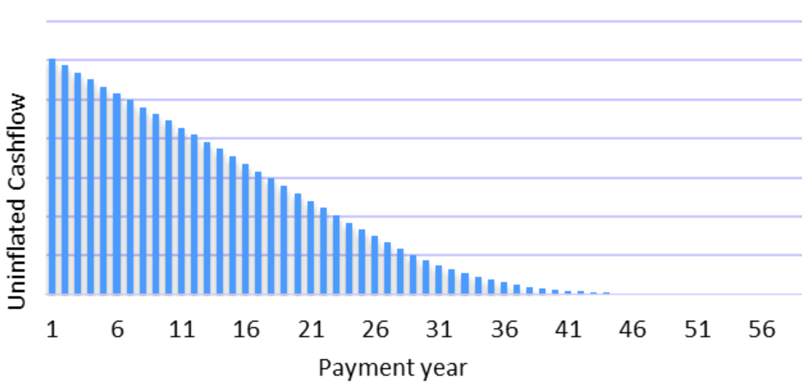
Index Performance[1)]



Descriptive statistics[1)]

	iSTOXX RiskFirst LDI Non-Gilts Nominal Shorter Post Fixed TR	iSTOXX RiskFirst LDI Non-Gilts Nominal Shorter Post Fixed PR
Return 1y (ann.)	-0.47%	-4.35%
Return 3y (ann.)	3.72%	-0.31%
Return Overall (ann.)	6.86%	2.37%
Volatility 1y (ann.)	4.57%	4.65%
Volatility 3y (ann.)	6.26%	6.39%
Volatility Overall (ann.)	6.07%	6.19%
Sharpe Ratio 1y[2)]	-0.16	-1.01
Sharpe Ratio 3y[2)]	0.55	-0.08
Sharpe Ratio Overall[2)]	1.04	0.33
Maximum Drawdown Overall	8.84%	11.77%
Turnover 1y (average of 3y)	29.80%	

Non-Gilts Nominal Shorter Post Fixed[3)]



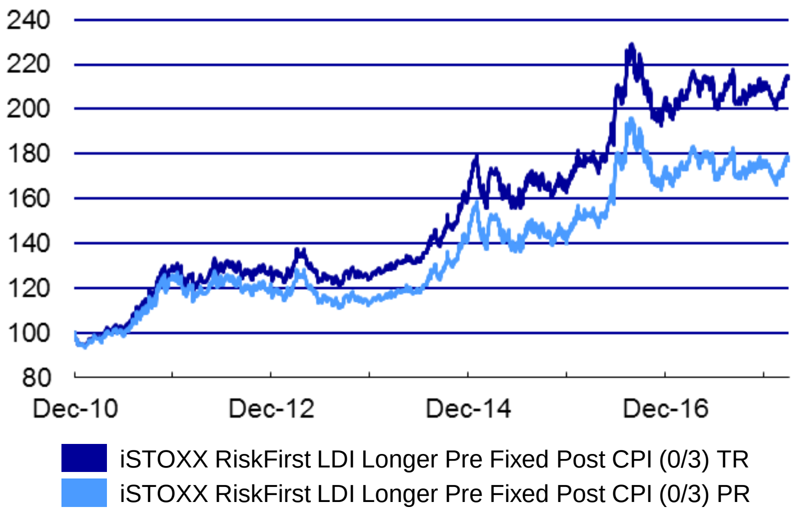
Weighted average index analytics[1)]

Weighted Average Bid **Yield to Maturity**	2.688
Weighted Average Bid **Duration**	9.559
Weighted Average Bid **Modified Duration**	9.309
Weighted Average Bid **Convexity**	1.496
Weighted Average **Remaining Time to Maturity**	12.845
Weighted Average **Coupon**	4.824

1) STOXX data as of Apr. 03, 2018. Annualized returns and annualized volatility (standard deviation) figures are used
2) ICE LIBOR GBP 1 Month rate used
3) UK schemes modelled on PFaroe at 31.12.2016

iSTOXX RiskFirst LDI Longer Pre Fixed Post CPI (0/3)

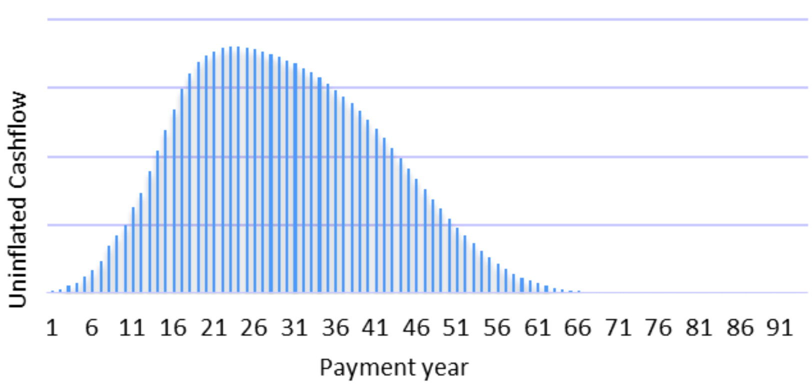
Index Performance[1)]



Descriptive statistics[1)]

	iSTOXX RiskFirst LDI Longer Pre Fixed Post CPI (0/3) TR	iSTOXX RiskFirst LDI Longer Pre Fixed Post CPI (0/3) PR
Return 1y (ann.)	-0.28%	-2.12%
Return 3y (ann.)	7.64%	5.50%
Return Overall (ann.)	11.13%	8.28%
Volatility 1y (ann.)	11.63%	11.69%
Volatility 3y (ann.)	15.05%	15.14%
Volatility Overall (ann.)	13.73%	13.82%
Sharpe Ratio 1y[2)]	0.00	-0.16
Sharpe Ratio 3y[2)]	0.54	0.40
Sharpe Ratio Overall[2)]	0.80	0.61
Maximum Drawdown Overall	15.97%	16.50%
Turnover 1y (average of 3y)	11.98%	

Longer Pre Fixed Post CPI (0/3)[3)]



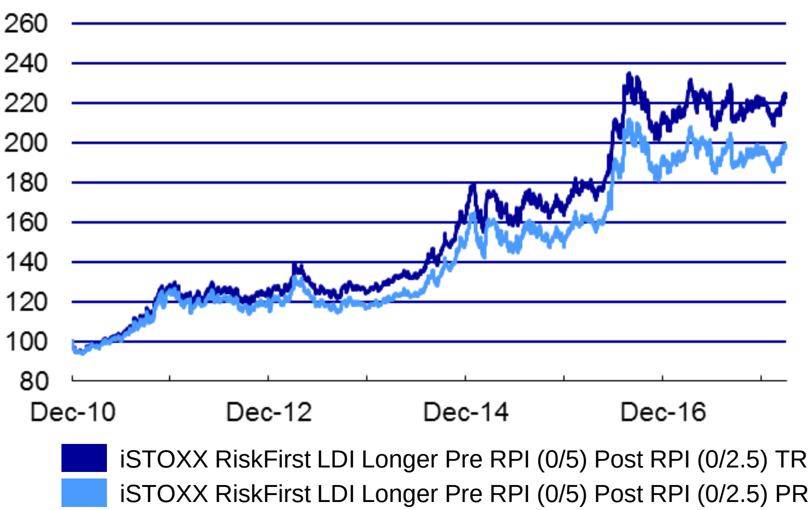
Weighted average index analytics[1)]

Weighted Average Bid **Yield to Maturity**	0.614
Weighted Average Bid **Duration**	24.816
Weighted Average Bid **Modified Duration**	24.723
Weighted Average Bid **Convexity**	8.109
Weighted Average **Remaining Time to Maturity**	32.578
Weighted Average **Coupon**	2.577

1) STOXX data as of Apr. 03, 2018. Annualized returns and annualized volatility (standard deviation) figures are used
2) ICE LIBOR GBP 1 Month rate used
3) UK schemes modelled on PFaroe at 31.12.2016

iSTOXX RiskFirst LDI Longer Pre RPI (0/5) Post RPI (0/2.5)

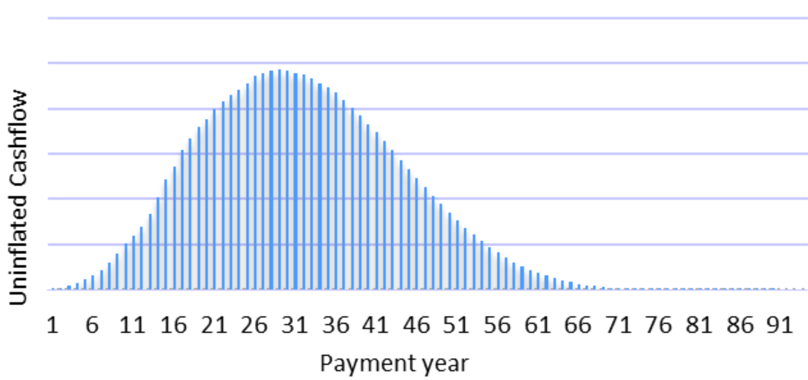
Index Performance[1)]



Descriptive statistics[1)]

	iSTOXX RiskFirst LDI Longer Pre RPI (0/5) Post RPI (0/2.5) TR	iSTOXX RiskFirst LDI Longer Pre RPI (0/5) Post RPI (0/2.5) PR
Return 1y (ann.)	-1.03%	-2.10%
Return 3y (ann.)	8.78%	7.50%
Return Overall (ann.)	11.78%	9.92%
Volatility 1y (ann.)	13.42%	13.46%
Volatility 3y (ann.)	15.96%	16.01%
Volatility Overall (ann.)	13.89%	13.95%
Sharpe Ratio 1y[2)]	-0.04	-0.12
Sharpe Ratio 3y[2)]	0.58	0.51
Sharpe Ratio Overall[2)]	0.84	0.71
Maximum Drawdown Overall	14.32%	14.62%
Turnover 1y (average of 3y)	11.15%	

Longer Pre RPI (0/5) Post RPI (0/2.5)[3)]



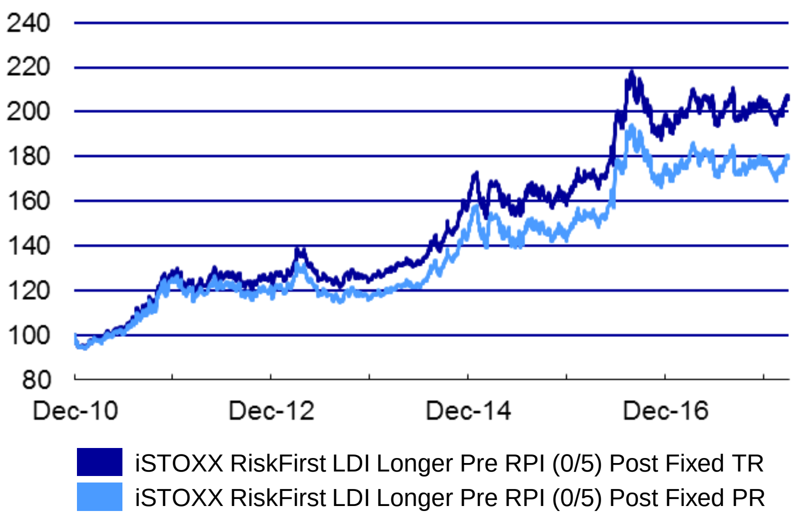
Weighted average index analytics[1)]

Weighted Average Bid **Yield to Maturity**	-0.428
Weighted Average Bid **Duration**	28.382
Weighted Average Bid **Modified Duration**	28.544
Weighted Average Bid **Convexity**	10.176
Weighted Average **Remaining Time to Maturity**	33.924
Weighted Average **Coupon**	1.574

1) STOXX data as of Apr. 03, 2018. Annualized returns and annualized volatility (standard deviation) figures are used
2) ICE LIBOR GBP 1 Month rate used
3) UK schemes modelled on PFaroe at 31.12.2016

iSTOXX RiskFirst LDI Longer Pre RPI (0/5) Post Fixed

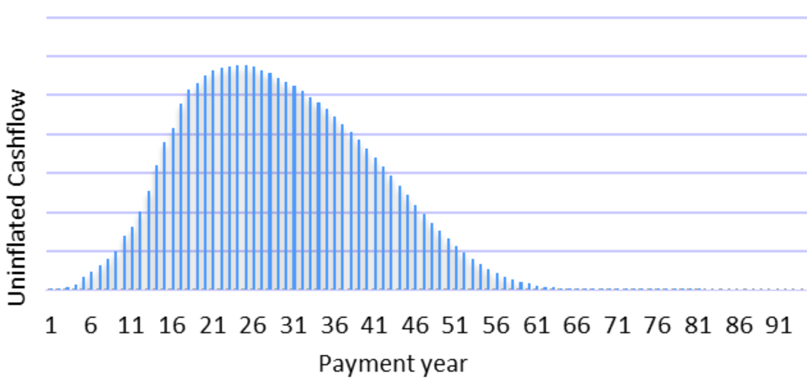
Index Performance[1)]



Descriptive statistics[1)]

	iSTOXX RiskFirst LDI Longer Pre RPI (0/5) Post Fixed TR	iSTOXX RiskFirst LDI Longer Pre RPI (0/5) Post Fixed PR
Return 1y (ann.)	-0.44%	-1.95%
Return 3y (ann.)	7.27%	5.57%
Return Overall (ann.)	10.57%	8.45%
Volatility 1y (ann.)	10.96%	11.01%
Volatility 3y (ann.)	13.72%	13.79%
Volatility Overall (ann.)	12.48%	12.55%
Sharpe Ratio 1y[2)]	-0.02	-0.16
Sharpe Ratio 3y[2)]	0.55	0.43
Sharpe Ratio Overall[2)]	0.83	0.67
Maximum Drawdown Overall	14.05%	14.48%
Turnover 1y (average of 3y)	9.55%	

Longer Pre RPI (0/5) Post Fixed[3)]



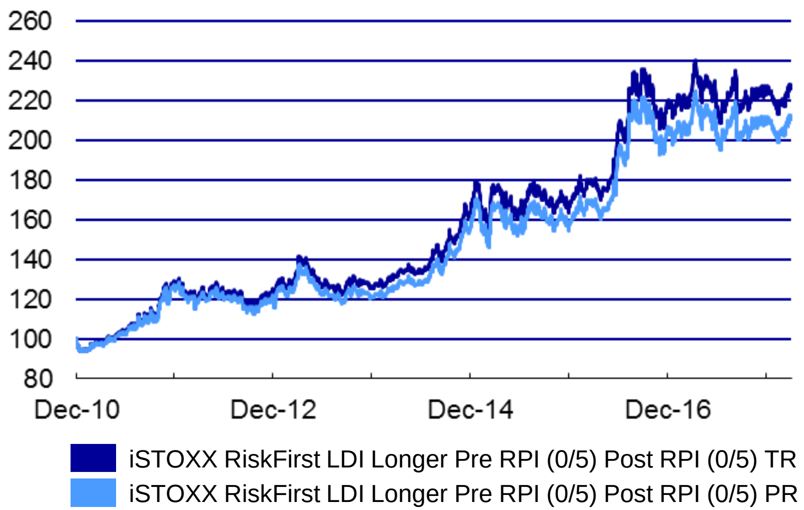
Weighted average index analytics[1)]

Weighted Average Bid **Yield to Maturity**	0.113
Weighted Average Bid **Duration**	23.299
Weighted Average Bid **Modified Duration**	23.273
Weighted Average Bid **Convexity**	7.091
Weighted Average **Remaining Time to Maturity**	30.210
Weighted Average **Coupon**	2.144

1) STOXX data as of Apr. 03, 2018. Annualized returns and annualized volatility (standard deviation) figures are used
2) ICE LIBOR GBP 1 Month rate used
3) UK schemes modelled on PFaroe at 31.12.2016

iSTOXX RiskFirst LDI Longer Pre RPI (0/5) Post RPI (0/5)

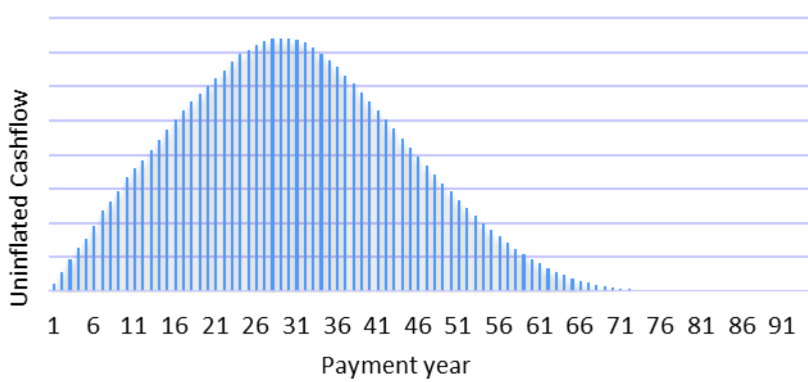
Index Performance[1)]



Descriptive statistics[1)]

	iSTOXX RiskFirst LDI Longer Pre RPI (0/5) Post RPI (0/5) TR	iSTOXX RiskFirst LDI Longer Pre RPI (0/5) Post RPI (0/5) PR
Return 1y (ann.)	-1.76%	-2.32%
Return 3y (ann.)	9.05%	8.36%
Return Overall (ann.)	12.01%	10.91%
Volatility 1y (ann.)	14.64%	14.66%
Volatility 3y (ann.)	16.41%	16.44%
Volatility Overall (ann.)	14.45%	14.48%
Sharpe Ratio 1y[2)]	-0.07	-0.11
Sharpe Ratio 3y[2)]	0.59	0.55
Sharpe Ratio Overall[2)]	0.82	0.75
Maximum Drawdown Overall	14.11%	14.53%
Turnover 1y (average of 3y)	9.07%	

Longer Pre RPI (0/5) Post RPI (0/5)[3)]



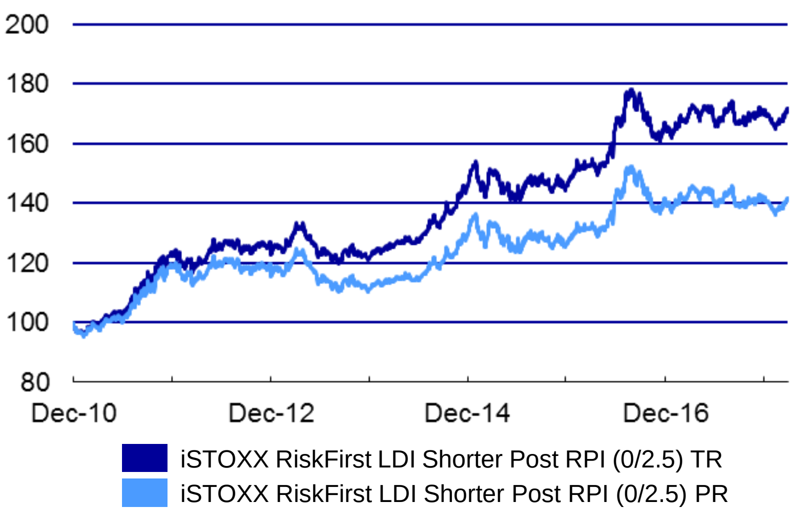
Weighted average index analytics[1)]

Weighted Average Bid **Yield to Maturity**	-1.298
Weighted Average Bid **Duration**	29.924
Weighted Average Bid **Modified Duration**	30.337
Weighted Average Bid **Convexity**	11.227
Weighted Average **Remaining Time to Maturity**	31.375
Weighted Average **Coupon**	0.812

1) STOXX data as of Apr. 03, 2018. Annualized returns and annualized volatility (standard deviation) figures are used.
2) ICE LIBOR GBP 1 Month rate used.
3) UK schemes modelled on PFaroe at 31.12.2016

iSTOXX RiskFirst LDI Shorter Post RPI (0/2.5)

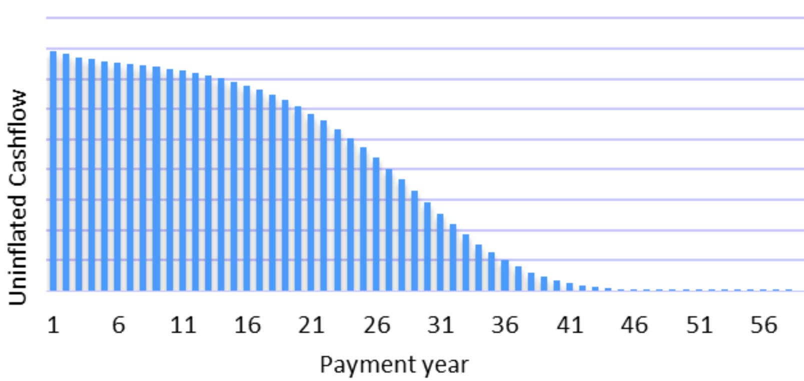
Index Performance[1)]



Descriptive statistics[1)]

	iSTOXX RiskFirst LDI Shorter Post RPI (0/2.5) TR	iSTOXX RiskFirst LDI Shorter Post RPI (0/2.5) PR
Return 1y (ann.)	-0.32%	-2.61%
Return 3y (ann.)	4.58%	2.20%
Return Overall (ann.)	7.76%	4.91%
Volatility 1y (ann.)	6.82%	6.87%
Volatility 3y (ann.)	9.02%	9.09%
Volatility Overall (ann.)	8.68%	8.75%
Sharpe Ratio 1y[2)]	-0.07	-0.40
Sharpe Ratio 3y[2)]	0.50	0.24
Sharpe Ratio Overall[2)]	0.85	0.53
Maximum Drawdown Overall	10.31%	11.58%
Turnover 1y (average of 3y)	15.13%	

Shorter Post RPI (0/2.5)[3)]



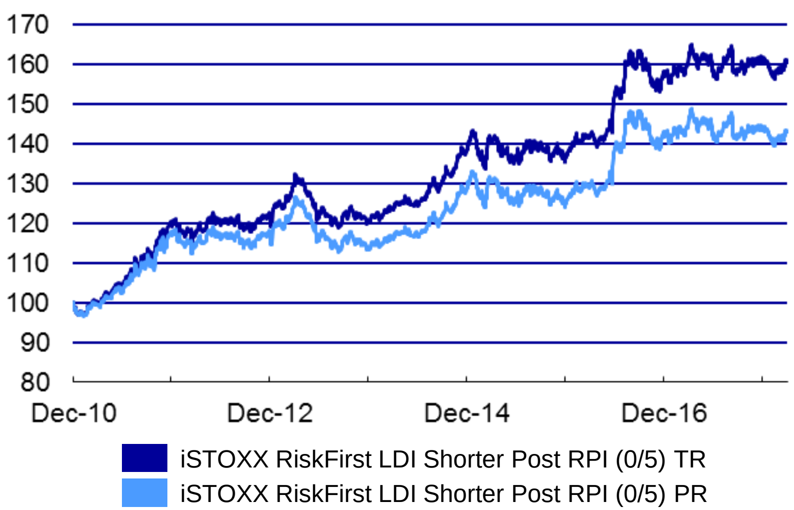
Weighted average index analytics[1)]

Weighted Average Bid **Yield to Maturity**	0.666
Weighted Average Bid **Duration**	14.221
Weighted Average Bid **Modified Duration**	14.122
Weighted Average Bid **Convexity**	2.955
Weighted Average **Remaining Time to Maturity**	17.696
Weighted Average **Coupon**	3.038

1) STOXX data as of Apr. 03, 2018. Annualized returns and annualized volatility (standard deviation) figures are used
2) ICE LIBOR GBP 1 Month rate used
3) UK schemes modelled on PFaroe at 31.12.2016

iSTOXX RiskFirst LDI Shorter Post RPI (0/5)

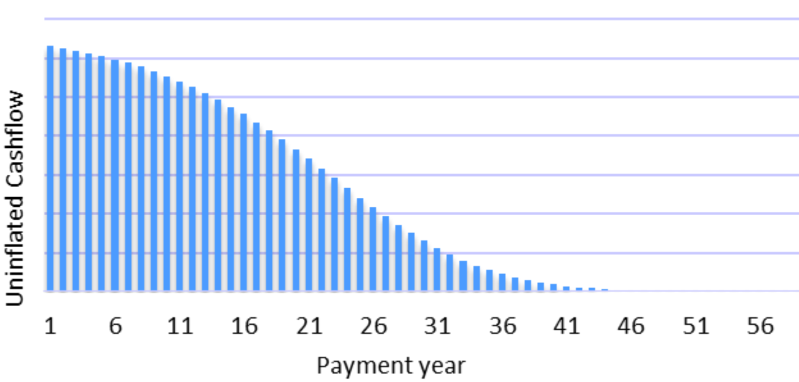
Index Performance[1)]



Descriptive statistics[1)]

	iSTOXX RiskFirst LDI Shorter Post RPI (0/5) TR	iSTOXX RiskFirst LDI Shorter Post RPI (0/5) PR
Return 1y (ann.)	-0.93%	-2.21%
Return 3y (ann.)	4.53%	3.15%
Return Overall (ann.)	6.80%	5.09%
Volatility 1y (ann.)	6.44%	6.47%
Volatility 3y (ann.)	7.49%	7.52%
Volatility Overall (ann.)	7.13%	7.16%
Sharpe Ratio 1y[2)]	-0.17	-0.37
Sharpe Ratio 3y[2)]	0.57	0.40
Sharpe Ratio Overall[2)]	0.89	0.66
Maximum Drawdown Overall	10.23%	10.97%
Turnover 1y (average of 3y)	17.80%	

Shorter Post RPI (0/5)[3)]



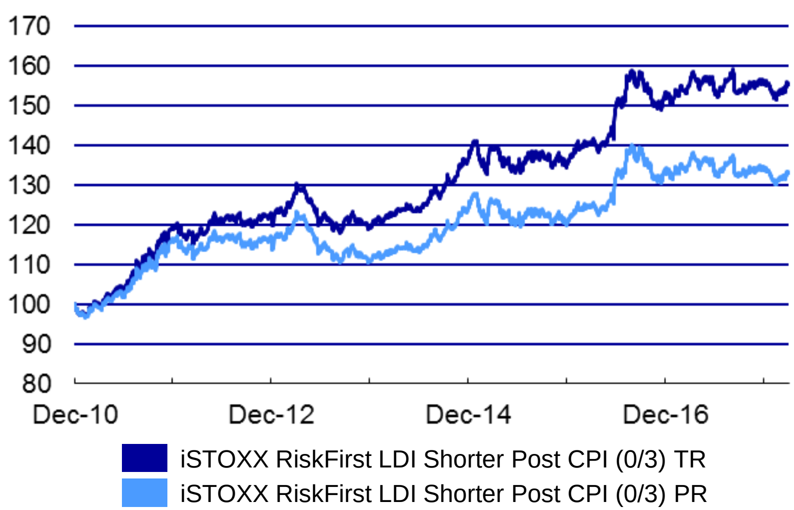
Weighted average index analytics[1)]

Weighted Average Bid **Yield to Maturity**	-1.047
Weighted Average Bid **Duration**	13.289
Weighted Average Bid **Modified Duration**	13.438
Weighted Average Bid **Convexity**	2.766
Weighted Average **Remaining Time to Maturity**	14.257
Weighted Average **Coupon**	1.701

1) STOXX data as of Apr. 03, 2018. Annualized returns and annualized volatility (standard deviation) figures are used
2) ICE LIBOR GBP 1 Month rate used
3) UK schemes modelled on PFaroe at 31.12.2016

iSTOXX RiskFirst LDI Shorter Post CPI (0/3)

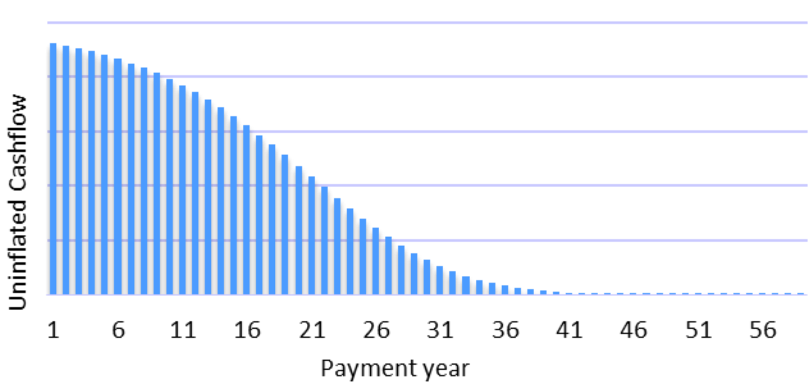
Index Performance[1)]



Descriptive statistics[1)]

	iSTOXX RiskFirst LDI Shorter Post CPI (0/3) TR	iSTOXX RiskFirst LDI Shorter Post CPI (0/3) PR
Return 1y (ann.)	-0.81%	-2.58%
Return 3y (ann.)	3.89%	2.00%
Return Overall (ann.)	6.32%	4.05%
Volatility 1y (ann.)	5.44%	5.47%
Volatility 3y (ann.)	6.74%	6.78%
Volatility Overall (ann.)	6.53%	6.57%
Sharpe Ratio 1y[2)]	-0.19	-0.52
Sharpe Ratio 3y[2)]	0.54	0.27
Sharpe Ratio Overall[2)]	0.89	0.56
Maximum Drawdown Overall	9.46%	10.44%
Turnover 1y (average of 3y)	20.07%	

Shorter Post CPI (0/3)[3)]



Weighted average index analytics[1)]

Weighted Average Bid **Yield to Maturity**	-0.351
Weighted Average Bid **Duration**	11.356
Weighted Average Bid **Modified Duration**	11.400
Weighted Average Bid **Convexity**	2.050
Weighted Average **Remaining Time to Maturity**	12.687
Weighted Average **Coupon**	2.318

1) STOXX data as of Apr. 03, 2018. Annualized returns and annualized volatility (standard deviation) figures are used
2) ICE LIBOR GBP 1 Month rate used
3) UK schemes modelled on PFaroe at 31.12.2016

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- Deutsche Börse Group covers the whole trading process value chain and has a wide spectrum of services.
- STOXX and its 110+ employees run a leading global index offering – differentiated through innovation, quality and liquidity
- Headquartered in Zurich. Offices in Frankfurt, London, New York, Sydney, Hong Kong and Tokyo

Global and innovative index universe

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- STOXX-owned brands STOXX, iSTOXX and STOXX Customized, marketed brands include DAX indices
- First bond indices launched in 1991

Core values: innovation, objectivity and transparency

- STOXX has been at the forefront of innovation since creating the market's first Eurozone blue-chip index in 1998 and has won many innovation awards
- All STOXX and DAX indices are fully rules-based, with rules disclosed in methodology guides
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