Asset Price Monitor

Local Equity Markets

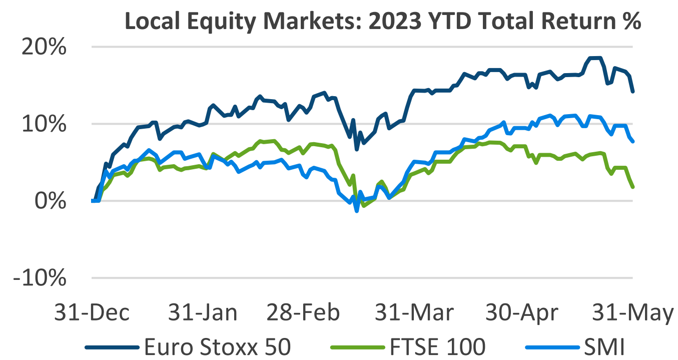
- Global equity markets had a mixed performance in May, with economic indicators showing a mixed picture for global growth.
- The Euro Stoxx 50 index was down 1.9% in May, gaining 14.2% year-to-date.
- The FTSE 100 index lost 4.9%, returning 1.8% year-to-date.

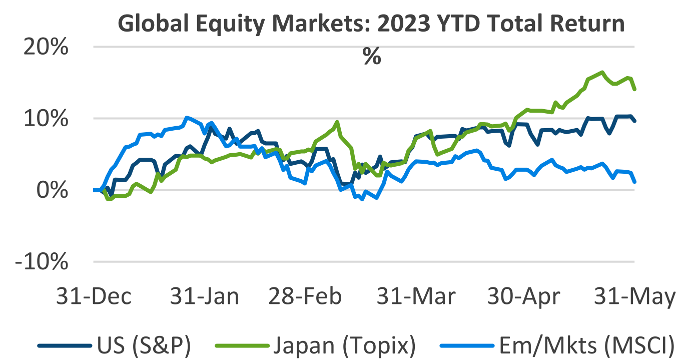
Global Equity Markets

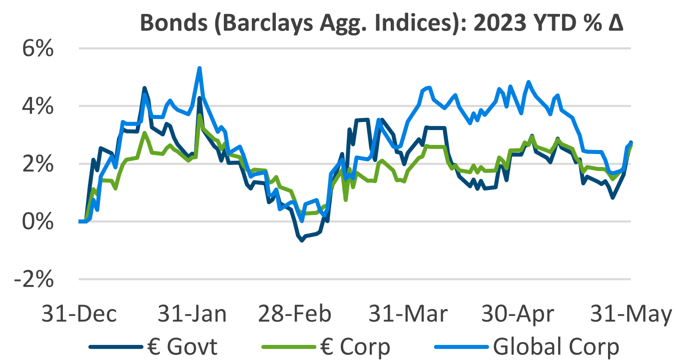
- Developed market equities outperformed their emerging market counterparts, with the S&P 500 up 0.4% and Topix index gaining 3.6%. Meanwhile, the MSCI Emerging Markets index was down 1.7%.

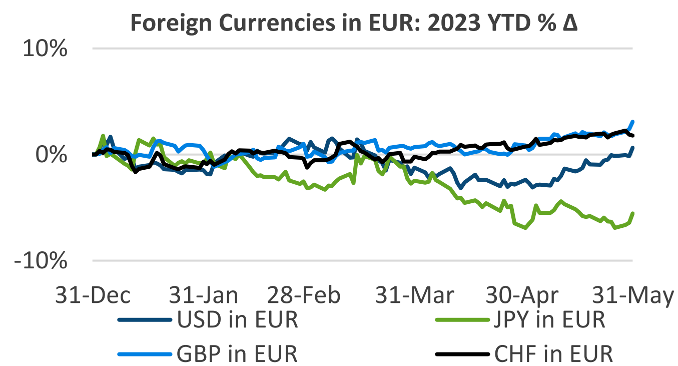
Bond/FX Markets

- The European government bond index ended the month up 0.4% and the European corporate bond index gained 0.2%.
- The Euro had a negative performance in May, losing 3.6% against the US Dollar, 1.0% against the Japanese Yen, and 2.1% against the British Pound.







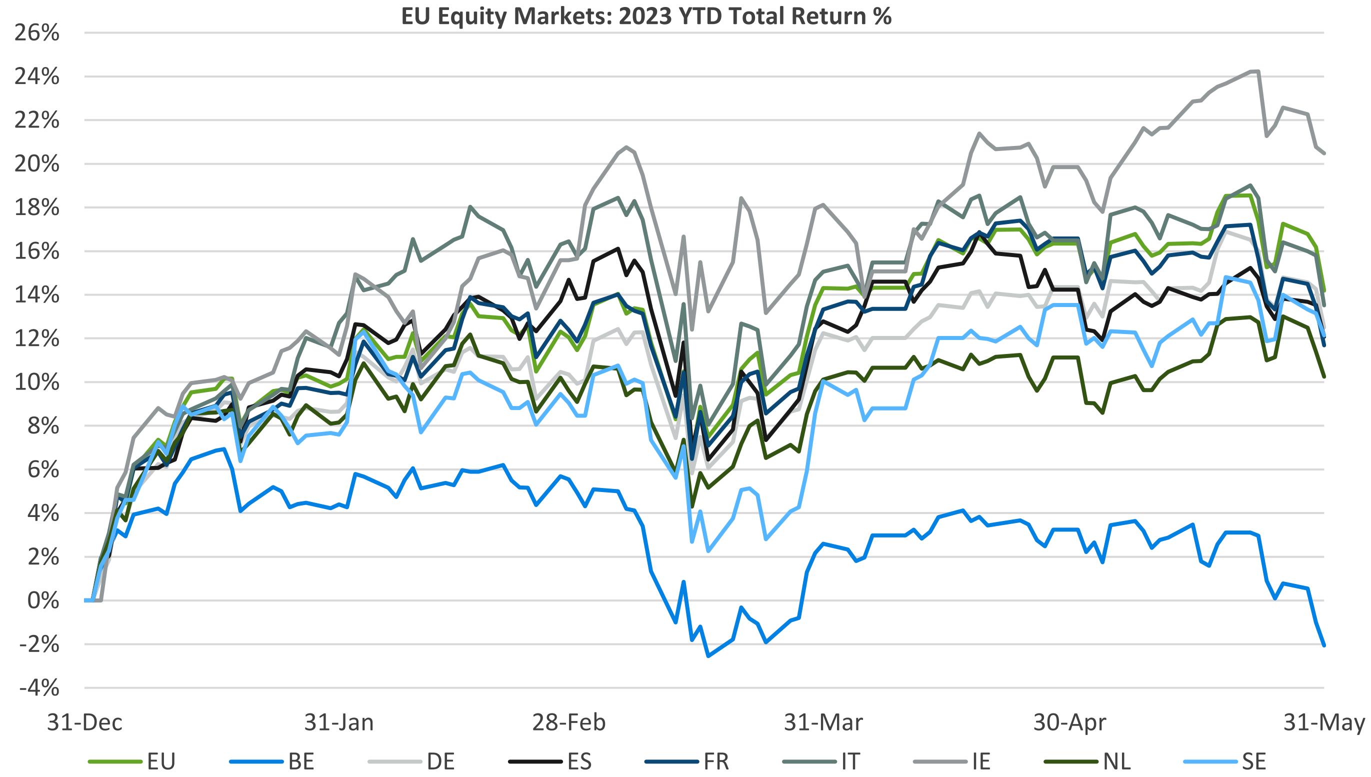


Total Returns as of May 31, 2023

	Euro Stoxx 50	FTSE 100	SMI	US (S&P)	Japan (Topix)	Em/Mkts (MSCI)	€ Govt	€ Corp	CHF in EUR	USD in EUR	JPY in EUR	GBP in EUR
1 Month	-1.9%	-4.9%	-1.6%	0.4%	3.6%	-1.7%	0.4%	0.2%	1.3%	3.6%	1.0%	2.1%
3 Month	1.9%	-4.1%	4.1%	5.7%	8.2%	0.2%	2.7%	1.9%	2.2%	-0.3%	-3.1%	2.1%
1 Year	15.1%	1.7%	-0.4%	2.9%	14.5%	-8.1%	-6.2%	-2.9%	5.7%	0.9%	-7.2%	-1.0%
YTD	14.2%	1.8%	7.7%	9.6%	14.1%	1.2%	2.7%	2.6%	1.8%	0.6%	-5.6%	3.1%

Eurozone Equity

- All major European equity markets suffered losses in May, except for the Irish equity market which gained 0.5%, as it remains the outperformer year-to-date, up 20.5%.
- The Belgian equity market saw the largest losses in the month, down 5.1%. It also remained as the worst performer year-to-date, having lost 2.1% so far in 2023.



Equity Returns as of May 31, 2023

	EU	Belgium	Germany	Spain	France	Italy	Ireland	Netherlands	Sweden
1 Month	-1.9%	-5.1%	-1.6%	-1.9%	-4.2%	-2.6%	0.5%	-0.8%	-1.2%
3 Month	1.9%	-7.2%	1.9%	-2.3%	-0.6%	-2.5%	4.2%	0.6%	2.8%
QTD	-0.1%	-4.5%	0.2%	-0.6%	-1.4%	-1.3%	2.0%	0.1%	1.9%
YTD	14.2%	-2.1%	12.5%	12.1%	11.7%	13.5%	20.5%	10.2%	12.1%

Eurozone Government Bonds

- All major European government bond indices had a positive performance in May, except for the Irish government bond index which fell by 0.1%.
- The Italian government bond index saw the largest increase, up 0.7% in May as it continues to outperform its European peers year-to-date, having returned 4.1% so far over the year.
- The Swedish government bond index remains the laggard performer for the year, up 0.9% year-to-date.

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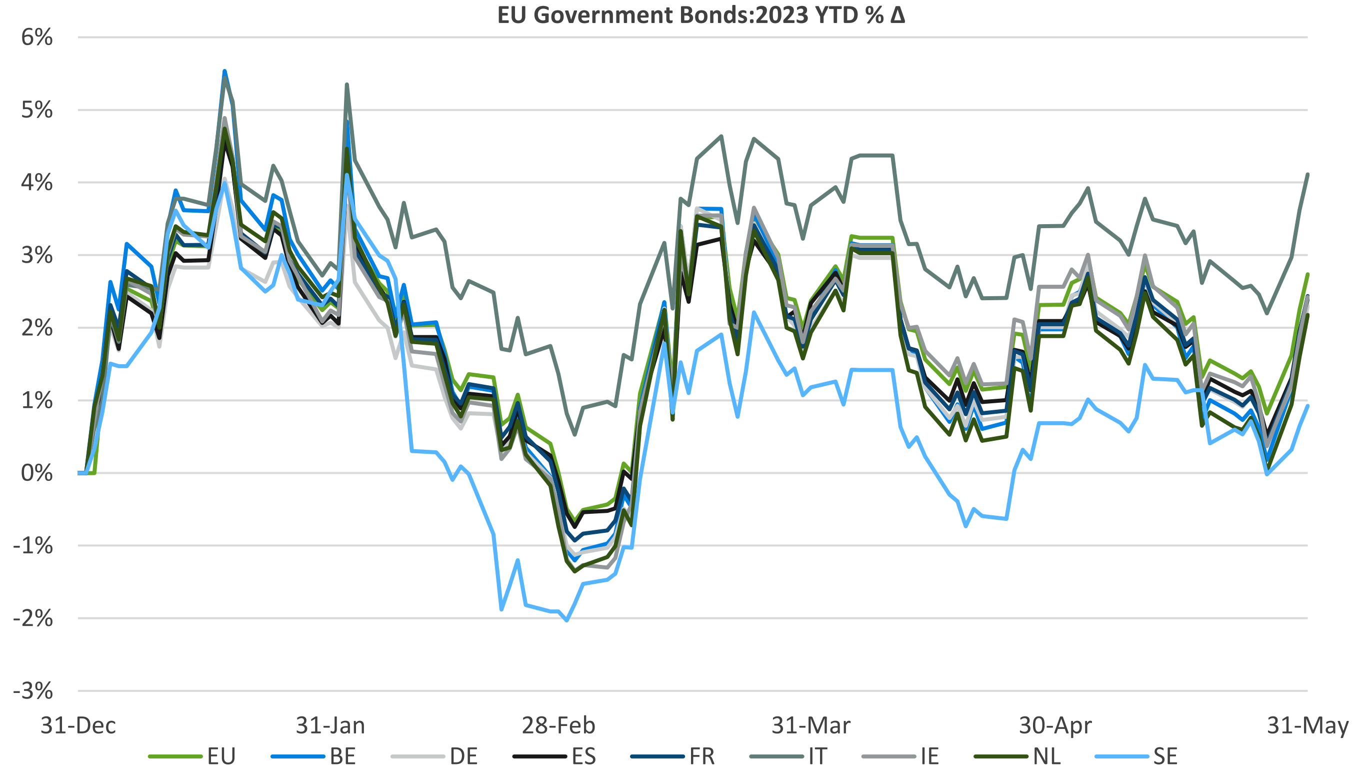


Bond Returns as of May 31, 2023

	EU	Belgium	Germany	Spain	France	Italy	Ireland	Netherlands	Sweden
1 Month	0.4%	0.4%	0.3%	0.3%	0.4%	0.7%	-0.1%	0.3%	0.2%
3 Month	2.7%	2.9%	2.8%	2.5%	2.7%	2.7%	2.9%	2.9%	2.9%
QTD	0.4%	0.2%	0.3%	0.1%	0.3%	0.4%	0.2%	0.2%	-0.3%
YTD	2.7%	2.4%	2.3%	2.4%	2.4%	4.1%	2.4%	2.2%	0.9%

Milliman Financial Risk Management

EuroZone Market Monitor – 31 May 2023

Data sources: Bloomberg; Barclays; EuroStat; EIOPA; ONS; Milliman FRM

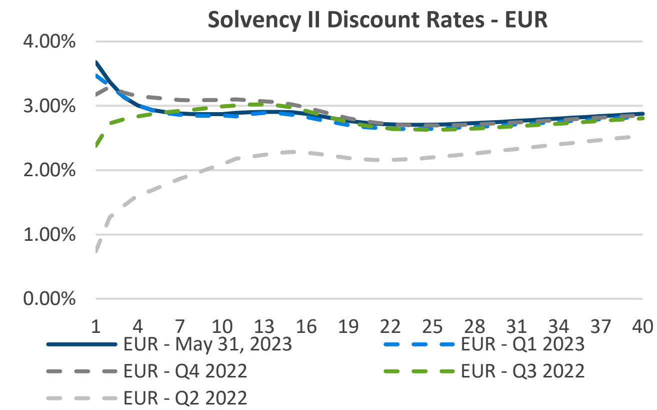
Liability Valuation Monitor

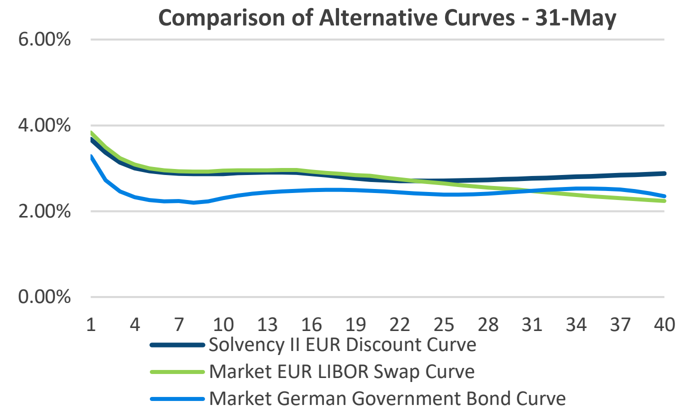
Risk Free Rates

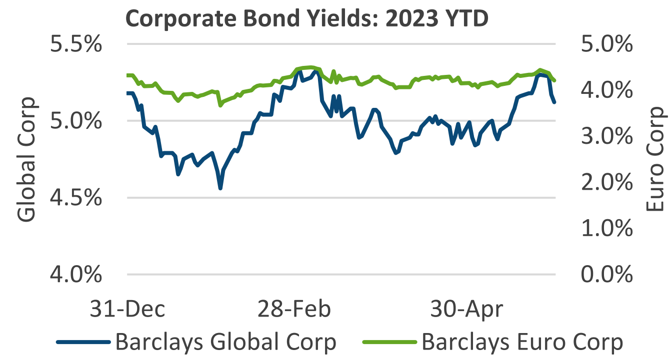
- EUR risk-free rates increased at the very short and long-end whilst the rest of the curve declined.
- The 1 and 30-year EUR risk-free rates increased by 5 and 2 basis points, respectively. Meanwhile, the 5 and 10-year rates fell by 4 and 3 basis points, respectively.

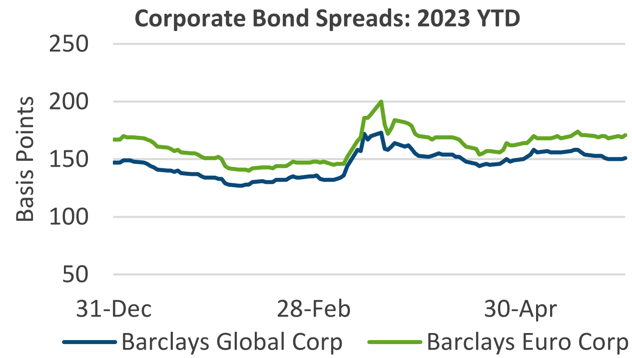
Corporate Bonds

- Both the European and global corporate bond yields increased in May. The former increased by 6 basis points and the latter by 23 basis points.
- Global credit spreads widened by 2 basis points, and European credit spreads widened by 9 basis point.
- The decrease in risk-free rates was partially offset by the widening in corporate bond spreads, resulting in small gains for the European corporate bond index.









	Change in Solvency II Discount (bps)						Change in Corporate Bond Yields (bps)		Change in Corporate Bond Spreads (bps)	
	1Y	Y5	Y10	Y20	Y30	Y40	Global Corp	Euro Corp	Global Corp	Euro Corp
Since Q1 2023	26	-3	-1	5	8	7	16	-1	-2	1
Since Q4 2022	56	-23	-25	-4	4	4	-6	-12	4	4
Since Q3 2022	136	3	-15	3	10	9	-26	-3	-29	-54
Since Q2 2022	300	121	76	55	47	37	78	97	-24	-47

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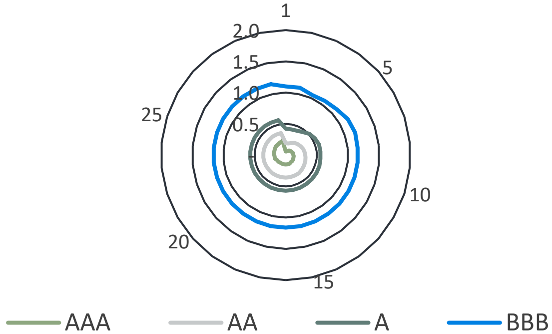
Solvency II Monitor - Spreads

Fundamental Spreads

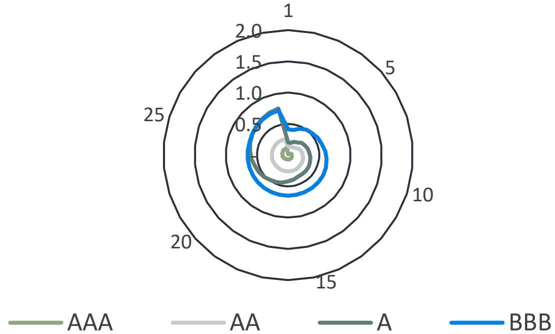
- The fundamental spread data shown is for the end of April.
- There were no material changes since the last report.

Fundamental Spreads %

EUR: Financial



EUR: Non-Financial



EUR Financial Fundamental Spread %					
	1Y	Y5	Y10	Y20	Y30
AAA	0.06	0.10	0.13	0.16	0.23
AA	0.19	0.26	0.33	0.36	0.36
A	0.42	0.51	0.57	0.57	0.57
BBB	1.10	1.10	1.16	1.16	1.16

EUR Financial 'Before Floor' %					
	1Y	*Y5*	*Y10*	*Y20*	*Y30*
AAA	*0.00*	*0.04*	*0.08*	*0.16*	*0.23*
AA	*0.04*	*0.07*	*0.11*	*0.18*	*0.26*
A	*0.06*	*0.12*	*0.19*	*0.32*	*0.42*
BBB	*0.14*	*0.22*	*0.32*	*0.45*	*0.57*

EUR Non-Financial Fundamental Spread %					
	1Y	Y5	Y10	Y20	Y30
AAA	0.02	0.03	0.06	0.08	0.12
AA	0.14	0.17	0.25	0.26	0.26
A	0.20	0.29	0.37	0.52	0.76
BBB	0.41	0.52	0.64	0.65	0.73

EUR Non-Financial 'Before Floor' %					
	1Y	*Y5*	*Y10*	*Y20*	*Y30*
AAA	*0.00*	*0.01*	*0.04*	*0.08*	*0.12*
AA	*0.00*	*0.04*	*0.09*	*0.17*	*0.26*
A	*0.04*	*0.15*	*0.27*	*0.52*	*0.76*
BBB	*0.11*	*0.21*	*0.34*	*0.55*	*0.73*

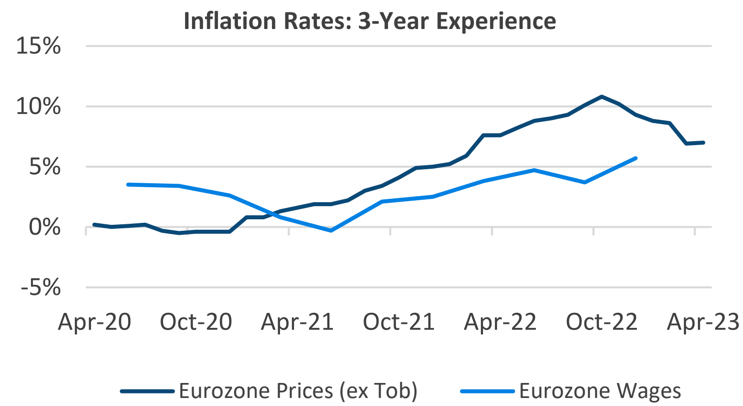
The **Solvency II risk-free discount rates** are based on applying the Smith-Wilson Extrapolation to LIBOR swap rates sourced from Bloomberg (current curve is for 31/05/23) and applying the Credit Risk Adjustment as defined in the Technical Specs. For the official published curves please refer to the EIOPA website.

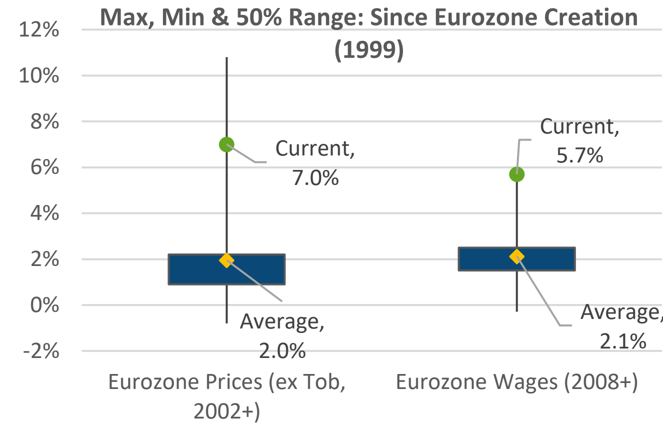
The **Credit Risk Adjustment** is a component of the risk-free discount curve defined by EIOPA. It is calculated from actual experience in the 'LIBOR-OIS' spread (3 months for EUR), and is bounded between 0.10 and 0.35. We show actual LIBOR-OIS spread levels and the defined CRA, for EUR.

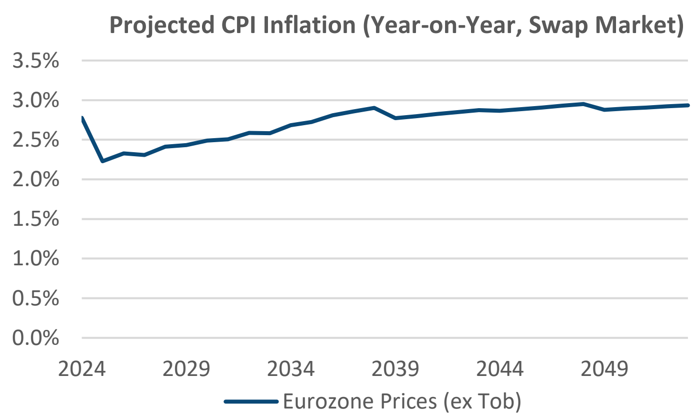
EIOPA fundamental spreads show the credit spread corresponding to the risk of default or downgrading of an asset. This is shown here across financial and non-financial assets, credit quality steps 0-3 and durations of 1-30 years. The data is provided by EIOPA and as of 30/04/23. **Fundamental spread** = maximum (probability of default + cost of downgrade; 35% of long-term average spread). In the tables we show the '**before floor**' measure = probability of default + cost of downgrade.

Inflation Monitor

- Eurozone price inflation increased by 10 basis points to 7.0% in April.
- There were no updates to wage inflation this month.
- Eurozone projected CPI curve fell by around 50 basis points at the 1-year term, whilst the rest of the curve remained relatively steady compared to the previous month.

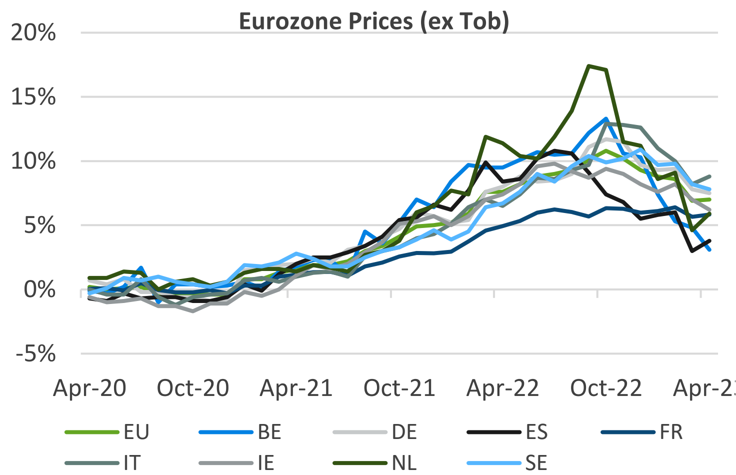


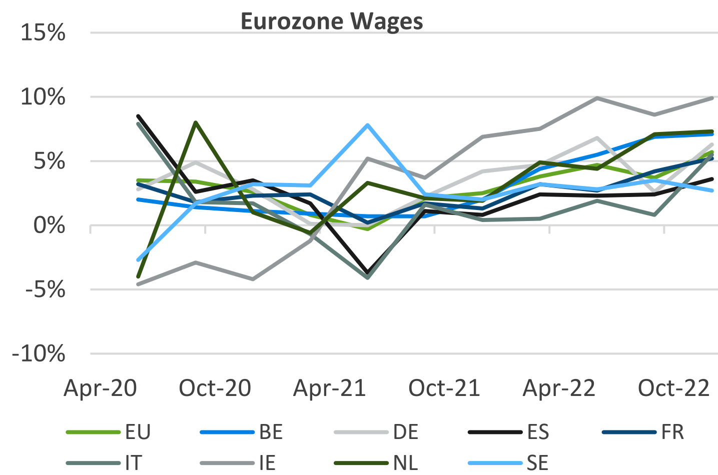


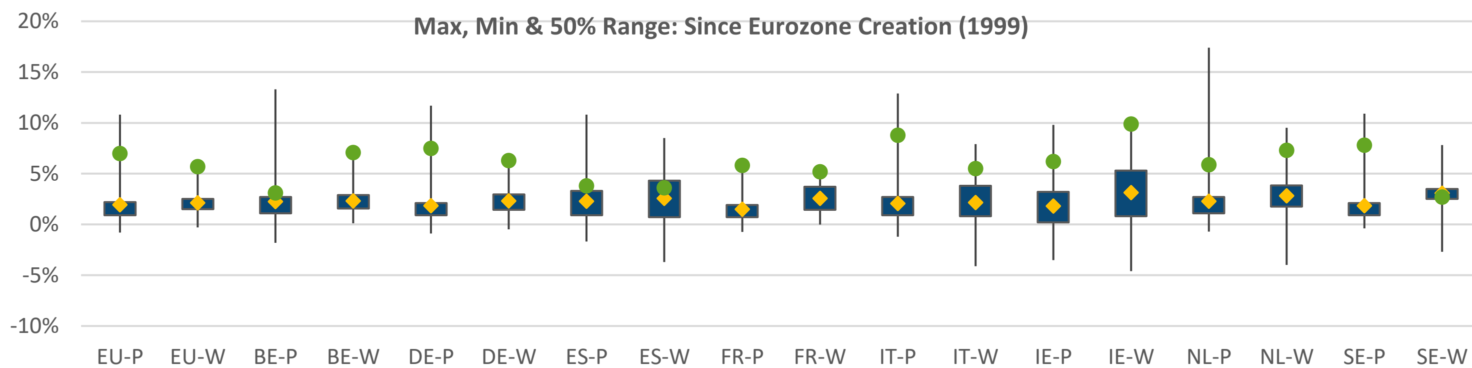


Inflation Monitor

- Changes in inflation for major European economies were mixed in April.
- The Netherlands' inflation increased the most, by 130 basis points to 5.9%.
- Belgian price inflation declined the most in April, by 170 basis points to 3.1%, which was also the lowest reading in the region.
- Italian price inflation showed the highest level in the region in April at 8.8%.
- There were no updates to wage inflation this month.





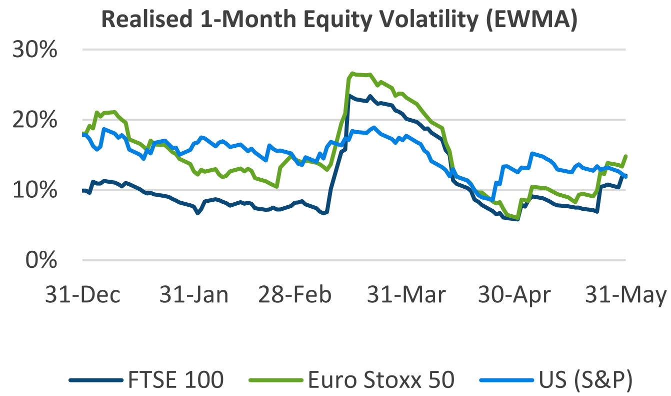


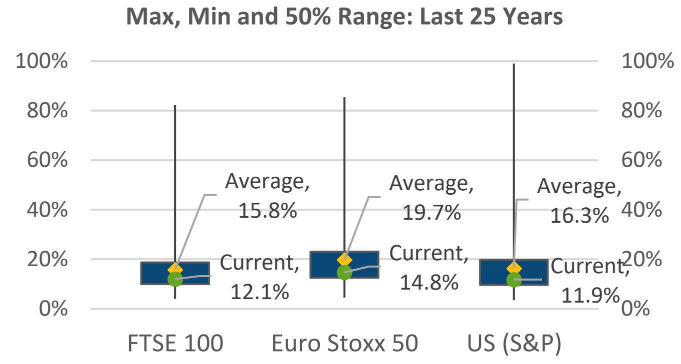
	EU-P	EU-W	BE-P	BE-W	DE-P	DE-W	ES-P	ES-W	FR-P	FR-W	IT-P	IT-W	IE-P	IE-W	NL-P	NL-W	SE-P	SE-W
Avg.	2.0%	2.1%	2.3%	2.3%	1.9%	2.3%	2.3%	2.6%	1.5%	2.6%	2.1%	2.2%	1.8%	3.2%	2.3%	2.8%	1.9%	3.1%
Cur	7.0%	5.7%	3.1%	7.1%	7.5%	6.3%	3.8%	3.6%	5.8%	5.2%	8.8%	5.5%	6.2%	9.9%	5.9%	7.3%	7.8%	2.7%

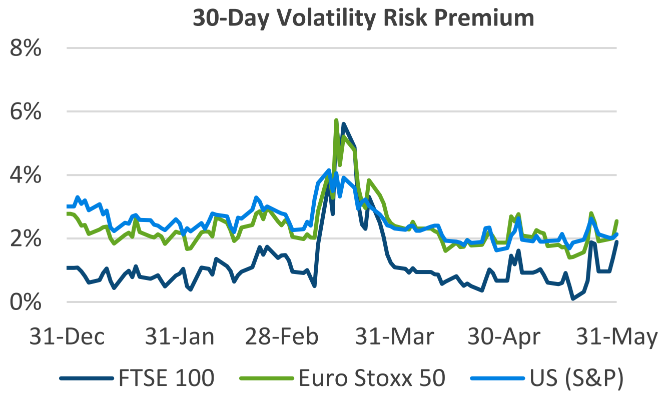
Volatility and Hedging Cost Monitor

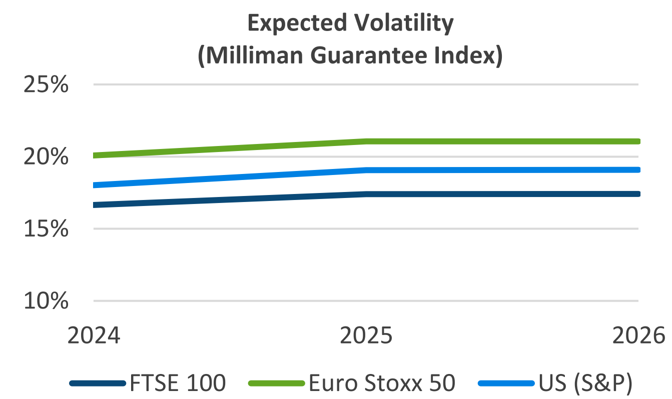
- Realised volatilities on major indices increased in May but remain below historical averages.
- The FTSE 100 ended the month with a realised volatility of 12.1%. The same measure stood at 14.8% and 11.9% on the Euro Stoxx 50 and the S&P 500, respectively.
- Volatility risk premiums on major indices also increased in May. The FTSE 100 had a volatility risk premium of 1.9% at month-end. The volatility risk premium on the Euro Stoxx 50 and the S&P 500 was 2.5% and 2.1%, respectively.

Please contact Milliman for more information on the basis and methodology used for these results.









Milliman FINANCIAL RISK MANAGEMENT

Creating transformational improvement in the retirement savings industry.

Milliman Financial Risk Management LLC / Milliman Financial Strategies Ltd. is a global leader in financial risk management to the retirement savings industry. Milliman FRM provides investment advisory, hedging, and consulting services on approximately $176.1 billion USD in global assets (31 December 2021).

Established in 1998, the practice includes professionals operating from four trading platforms around the world (Chicago, London, Amsterdam and Sydney).

Milliman is among the world's largest providers of actuarial and related products and services. The firm has consulting practices in healthcare, property & casualty insurance, life insurance and financial services, and employee benefits. Founded in 1947, Milliman is an independent firm with offices in major cities around the globe.

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