

## Asset Price Monitor

### Local Equity Markets

- Equity markets had a positive performance in November, as concerns over inflation and central bank tightening eased due to the smaller than expected increase in the US inflation numbers for October. Risk appetite was also boosted by the hopes that China could slowly be ending its zero-covid policy, after policymakers eased some of the control measures.
- The Euro Stoxx 50 index was up 9.7%.
- The FTSE 100 index gained 7.1%.

### Global Equity Markets

- Emerging market equities outperformed their developed market counterparts, with the MSCI Emerging Market index up 14.8% in November.
- The S&P 500 gained 5.6% and the Japanese Topix ended the month up 3.0%.

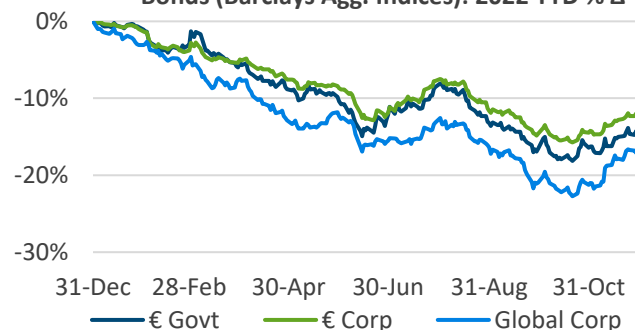
### Bond/FX Markets

- Bond markets rallied in November, with the European government bond index returning 2.3%, and the European corporate bond index up by 2.8%.
- The Euro had a mixed performance, gaining 4.1% against the US Dollar, but weakening by 2.2% against the Japanese Yen. The Euro ended the month relatively flat against the British Pound.

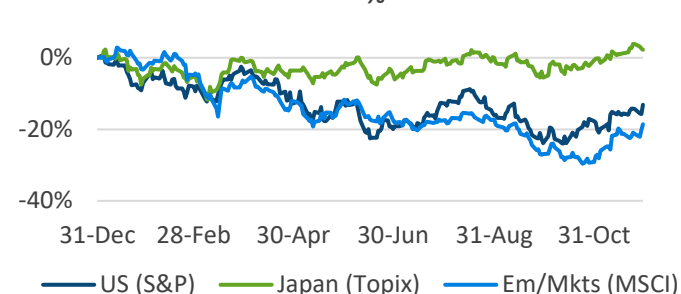
Local Equity Markets: 2022 YTD Total Return %



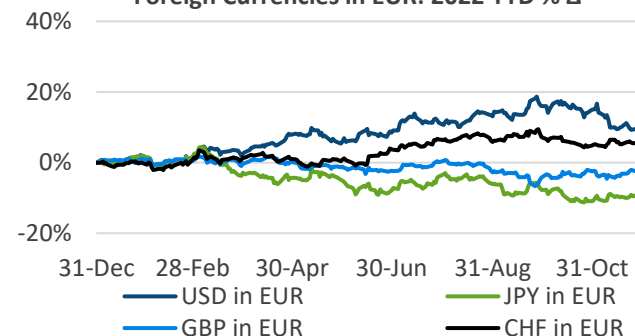
Bonds (Barclays Agg. Indices): 2022 YTD % Δ



Global Equity Markets: 2022 YTD Total Return %



Foreign Currencies in EUR: 2022 YTD % Δ

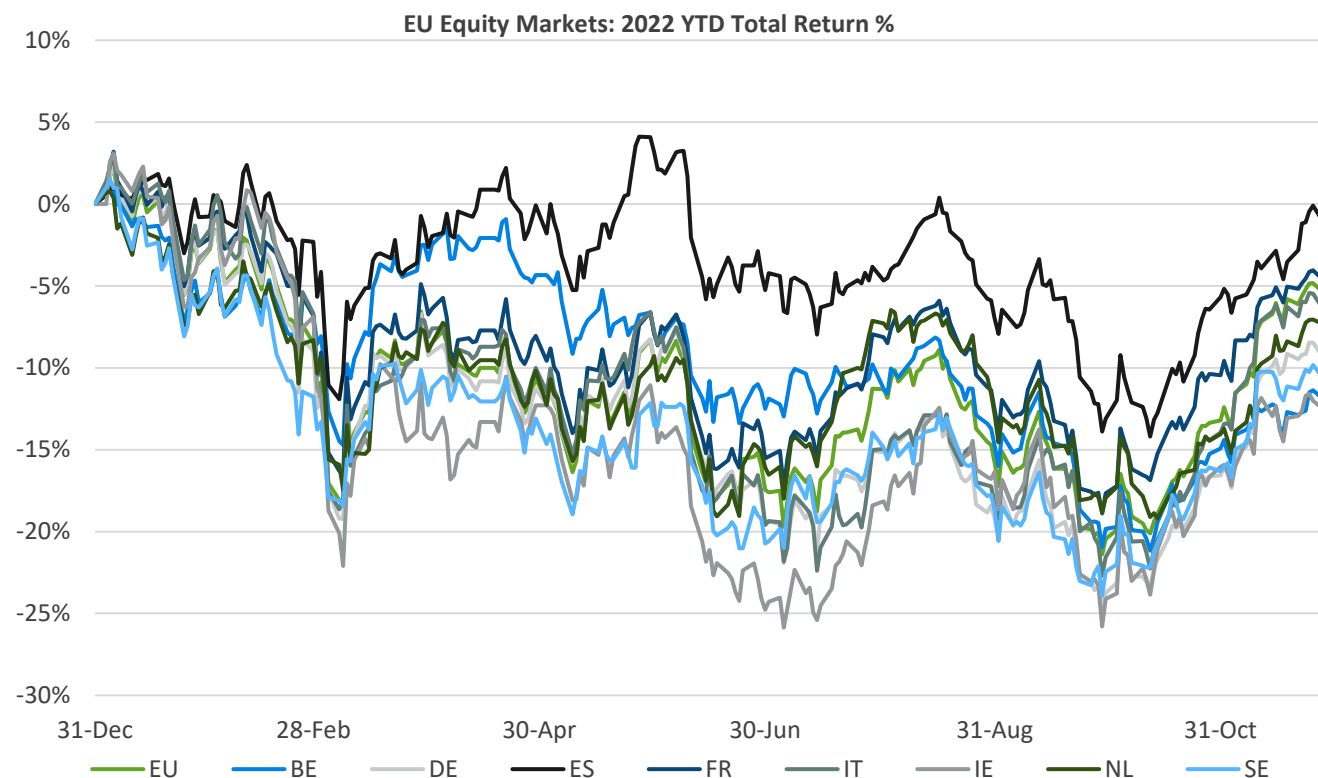


Total Returns as of November 30, 2022

	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	9.7%	7.1%	2.8%	5.6%	3.0%	14.8%	2.3%	2.8%	0.9%	-4.1%	2.2%	-0.2%
3 Month	13.1%	4.6%	2.6%	3.6%	2.3%	-1.7%	-1.4%	-0.5%	-0.1%	-2.5%	-3.0%	0.1%
1 Year	0.8%	11.3%	-5.9%	-9.2%	5.7%	-17.1%	-15.8%	-12.2%	6.1%	9.7%	-11.0%	-1.3%
YTD	-4.8%	6.3%	-11.1%	-13.1%	2.2%	-18.6%	-14.5%	-12.1%	5.7%	10.3%	-8.9%	-2.6%

### Eurozone Equity

- For the second consecutive month, all major European equities made gains in November.
- The Italian equity market was the best performer of the month, up 9.4%.
- Belgian equities made the smallest gain in the region in November, returning 2.8%
- The Spanish equity market remains as the outperformer year-to-date, down 0.7% for the year so far.
- The Irish equity market is the worst performing equity market in the region year-to-date, having lost 12.6%.

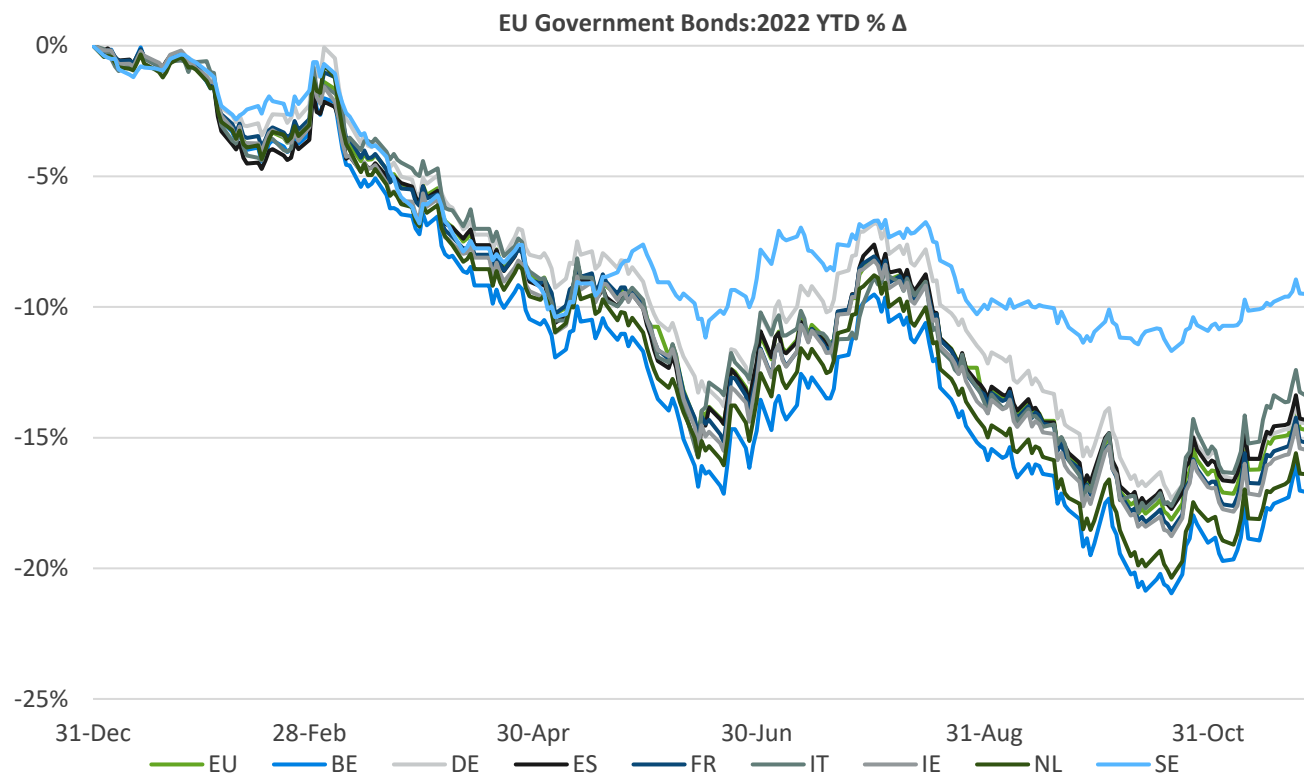


**Equity Returns as of November 30, 2022**

	EU	Belgium	Germany	Spain	France	Italy	Ireland	Netherlands	Sweden
1 Month	9.7%	2.8%	8.6%	5.3%	7.6%	9.4%	4.2%	8.3%	7.0%
3 Month	13.1%	2.6%	12.2%	6.8%	10.2%	15.1%	4.5%	6.8%	10.1%
QTD	19.7%	9.1%	18.8%	14.3%	17.0%	20.0%	15.2%	13.4%	15.5%
YTD	-4.8%	-12.5%	-9.4%	-0.7%	-3.7%	-5.9%	-12.6%	-6.9%	-10.4%

### Eurozone Government Bonds

- All major European government bond indices had a positive performance in November.
- The Belgian government bond index was the outperformer in the region, up 3.0%. However, it remains the worst performer year-to-date, down 16.6% for the year so far.
- The Swedish government bond index was the underperformer in November, having gained 1.9%. The index has suffered the smallest drop this year, down 9.3% year-to-date.



Bond Returns as of November 30, 2022

	EU	Belgium	Germany	Spain	France	Italy	Ireland	Netherlands	Sweden
1 Month	2.3%	3.0%	2.0%	2.2%	2.3%	2.7%	2.1%	2.6%	1.9%
3 Month	-1.4%	-1.4%	-2.6%	-1.2%	-1.7%	0.4%	-1.5%	-1.7%	0.7%
QTD	2.5%	3.0%	1.4%	2.5%	2.4%	3.8%	2.3%	2.6%	1.9%
YTD	-14.5%	-16.6%	-14.1%	-14.2%	-14.8%	-13.3%	-15.1%	-16.0%	-9.3%

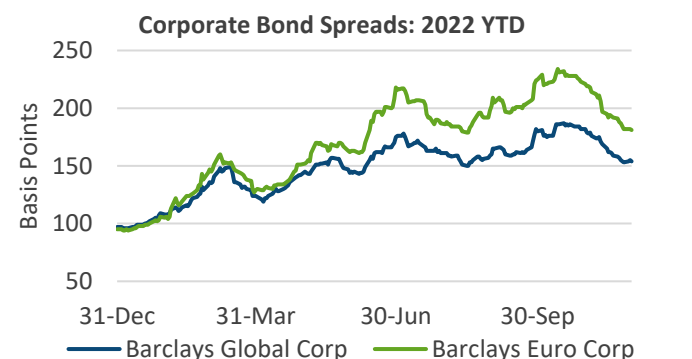
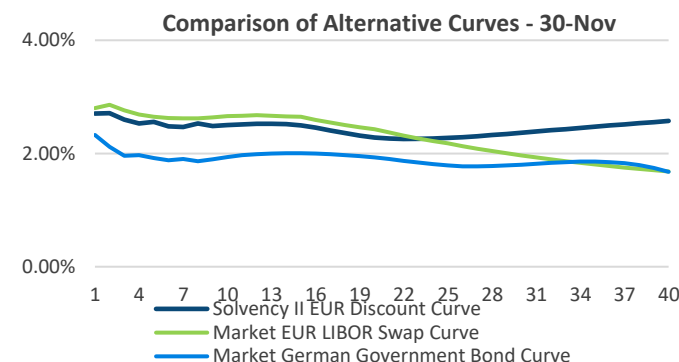
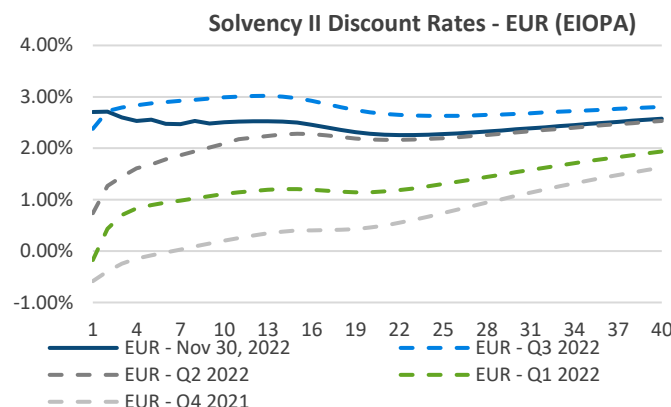
## Liability Valuation Monitor

### Risk Free Rates

- EUR risk-free rates dropped in November, except for the 1-year risk-free rate, which rose by 17 basis points.
- The falls were more pronounced at the medium to longer terms, with the 10 and 20-year rates declining by 43 and 46 basis points, respectively.

### Corporate Bonds

- European and global corporate bond yields fell in November. The former decreased by 45 basis points and the latter by 57 basis points.
- Global credit spreads tightened by 28 basis points, whilst their European counterparts tightened by 40 basis points.
- The fall in risk-free rates, combined with the tightening in the European corporate bond spreads, resulted in 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 Q3 2022	33	-32	-49	-42	-30	-23	-38	-36	-26	-44
Since Q2 2022	197	87	41	11	6	4	66	64	-21	-37
Since Q1 2022	288	166	139	114	83	64	191	233	30	52
Since Q4 2021	329	264	230	183	129	95	314	336	57	86

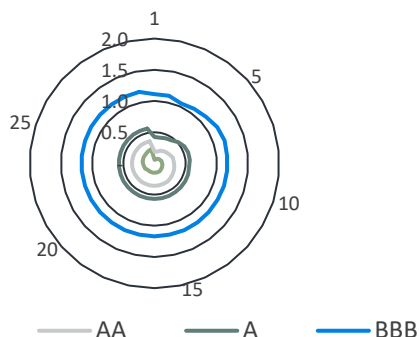
## Solvency II Monitor - Spreads

### Fundamental Spreads

- There were no material changes since the last report.

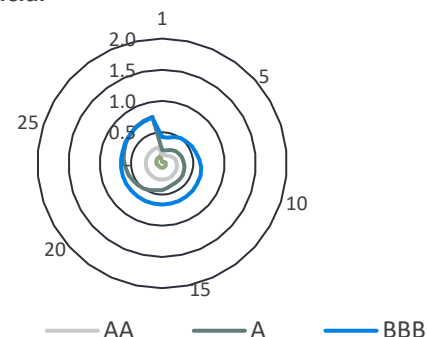
### Fundamental Spreads %

#### EUR: Financial



EUR Financial Fundamental Spread %					
	1Y	Y5	Y10	Y20	Y30
AAA	0.06	0.10	0.13	0.15	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	1.11	1.11	1.17	1.17	1.17
EUR Financial 'Before Floor' %					
	1Y	Y5	Y10	Y20	Y30
AAA	0.00	0.04	0.08	0.15	0.23
AA	0.04	0.07	0.11	0.18	0.26
A	0.06	0.12	0.19	0.32	0.44
BBB	0.15	0.25	0.34	0.48	0.59

#### EUR: Non-Financial



EUR Non-Financial Fundamental Spread %					
	1Y	Y5	Y10	Y20	Y30
AAA	0.02	0.03	0.06	0.07	0.12
AA	0.14	0.17	0.25	0.26	0.26
A	0.21	0.29	0.37	0.52	0.76
BBB	0.42	0.52	0.65	0.66	0.75
EUR Non-Financial 'Before Floor' %					
	1Y	Y5	Y10	Y20	Y30
AAA	0.00	0.01	0.04	0.07	0.12
AA	0.00	0.04	0.09	0.18	0.26
A	0.04	0.15	0.27	0.52	0.76
BBB	0.11	0.22	0.34	0.56	0.75

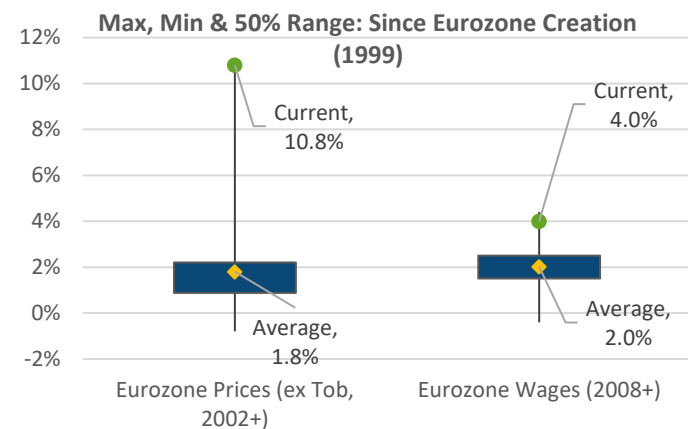
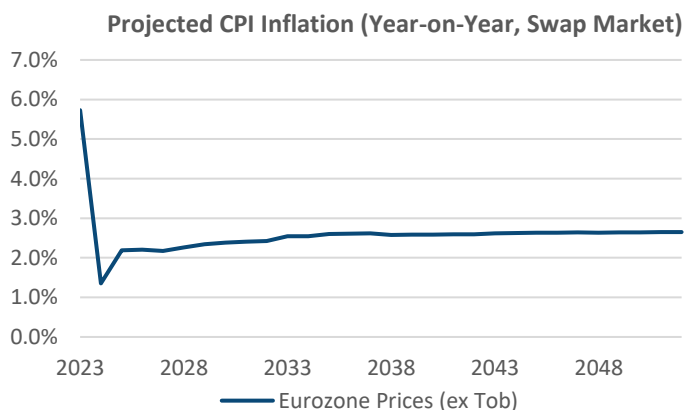
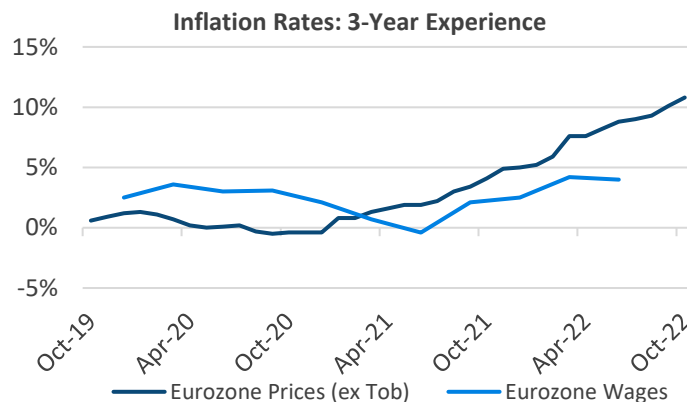
The **Solvency II risk-free discount rates** are based on applying the Smith-Wilson Extrapolation to LIBOR swap rates sourced from Refinitiv and applying the Credit Risk Adjustment as defined in the Technical Specs. The data is provided by EIOPA and as of 30/11/22.

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 30/11/22. **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 rose to 10.8% in October, an increase of 70 basis points from the previous month.
- The Eurozone projected CPI curve rose at the very near-term, but the 2-year rate fell, whilst the rest of the curve remained relatively unchanged from the previous month.
- The Eurozone Q3 2022 GDP growth figure was revised higher by 20 basis points to 2.3%.
- There were no updates to the wage inflation figure this month.



## Milliman Financial Risk Management

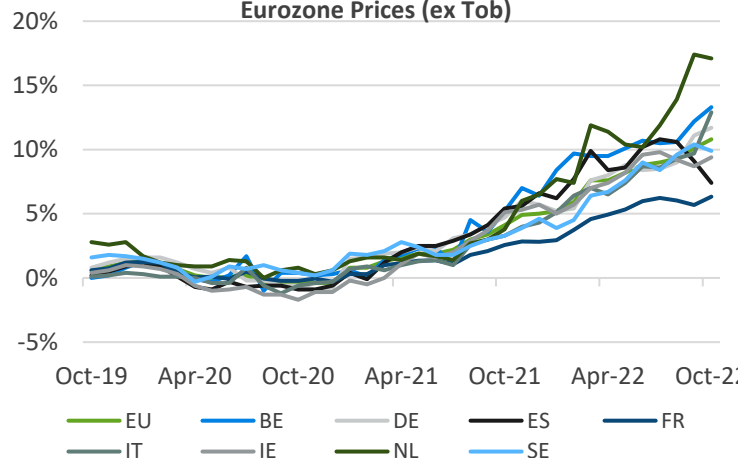
EuroZone Market Monitor – 30 November 2022

Data sources: Bloomberg; Barclays; EuroStat; Oxford-Man Institute; Milliman FRM

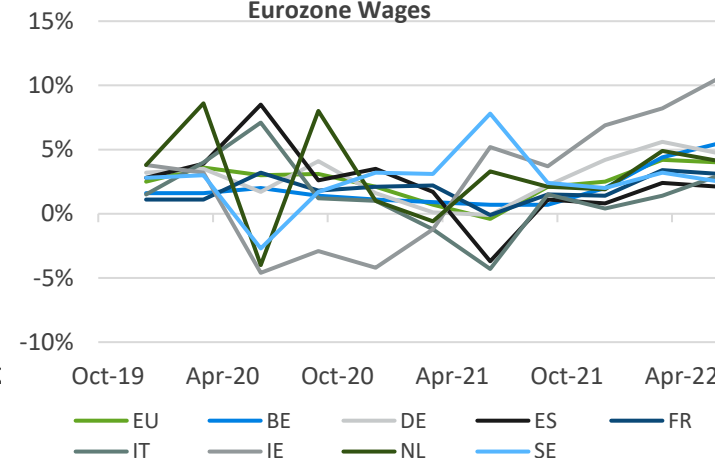
### Inflation Monitor

- Inflation figures for major European economies were mixed in October.
- Italian price inflation saw the largest increase in the region, with the headline figure increasing by 320 basis points to 12.9%.
- The Netherlands continued to report the highest price inflation in the Euro area, with the headline figure at 17.1% in October.
- For the second month in a row, Spanish price inflation fell the most in the region in October. It decreased by 170 basis points, to 7.4%.
- France remains as the country with the lowest price inflation in the Eurozone, at 6.3%.

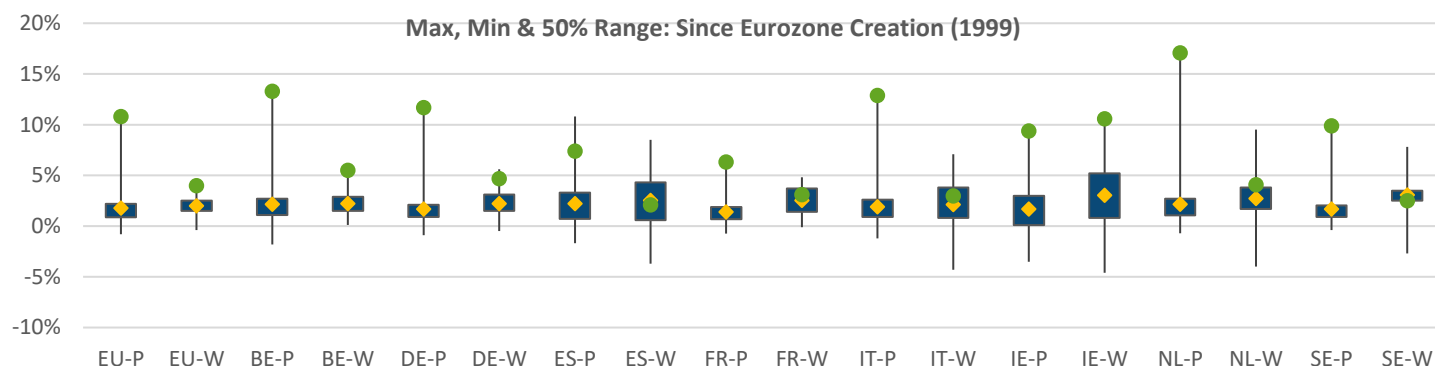
Eurozone Prices (ex Tob)



Eurozone Wages



Max, Min & 50% Range: Since Eurozone Creation (1999)



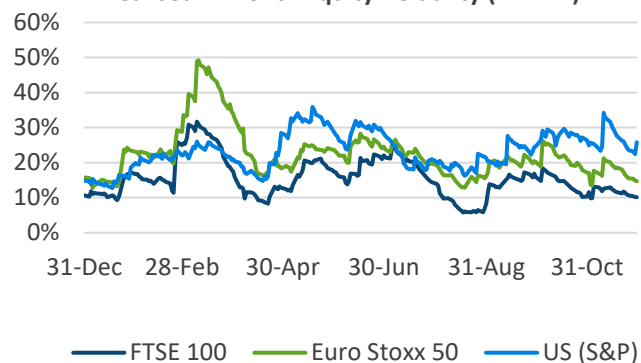
	EU-P	EU-W	BE-P	BE-W	DE-P	DE-W	ES-P	ES-W	FR-P	FR-W	IT-P	IT-W	IE-P	IE-W	NL-P	NL-W	SE-P	SE-W
Avg.	1.8%	2.0%	2.2%	2.2%	1.7%	2.2%	2.2%	2.5%	1.4%	2.5%	1.9%	2.1%	1.7%	3.0%	2.2%	2.7%	1.7%	3.1%
Cur	10.8%	4.0%	13.3%	5.5%	11.7%	4.7%	7.4%	2.1%	6.3%	3.1%	12.9%	3.0%	9.4%	10.6%	17.1%	4.1%	9.9%	2.5%

## Volatility and Hedging Cost Monitor

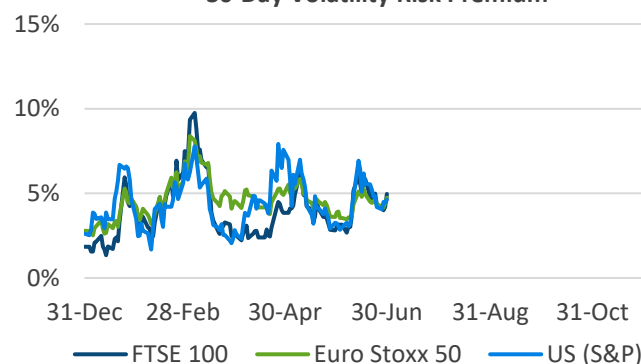
- Realised volatilities on major indices increased at the start of the month, but then subsidised and declined for the second half of the month.
- The FTSE 100 ended the month with a realised volatility of 10.1%. The same measure stood at 14.7% and 25.8% on the Euro Stoxx 50 and the S&P 500.
- \*\* Please note that due to some missing data the volatility risk premiums have only been updated to the 28<sup>th</sup> of June. \*\***

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

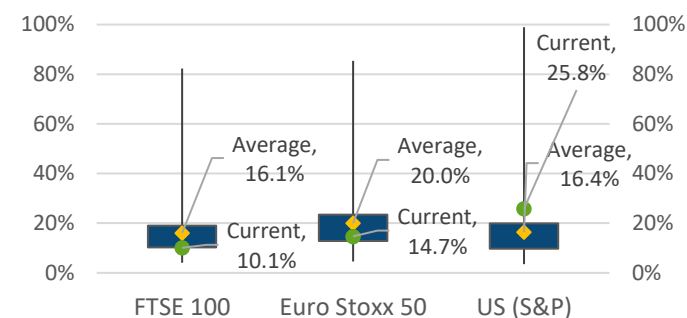
Realised 1-Month Equity Volatility (EWMA)



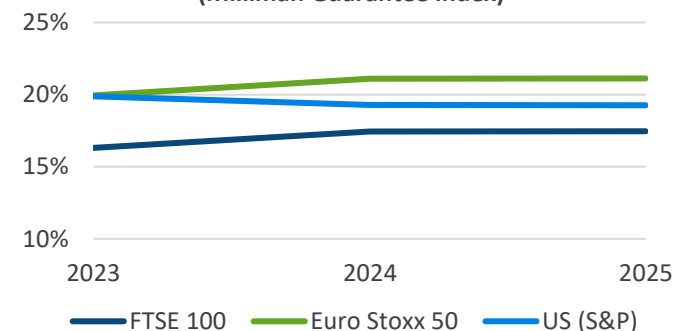
30-Day Volatility Risk Premium



Max, Min and 50% Range: Last 25 Years



Expected Volatility  
(Milliman Guarantee Index)







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

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