

Asset Price Monitor

Local Equity Markets

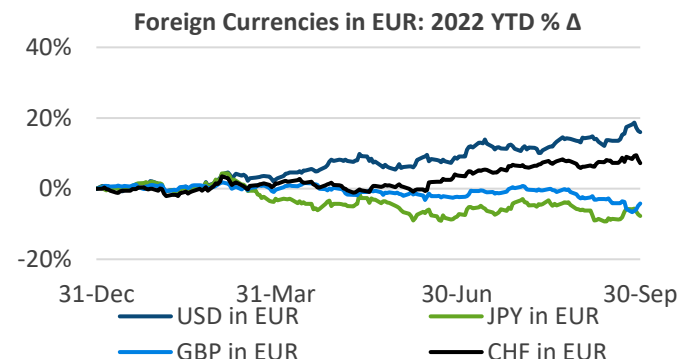
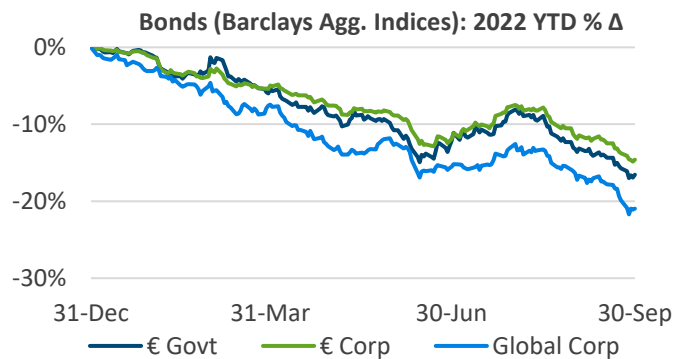
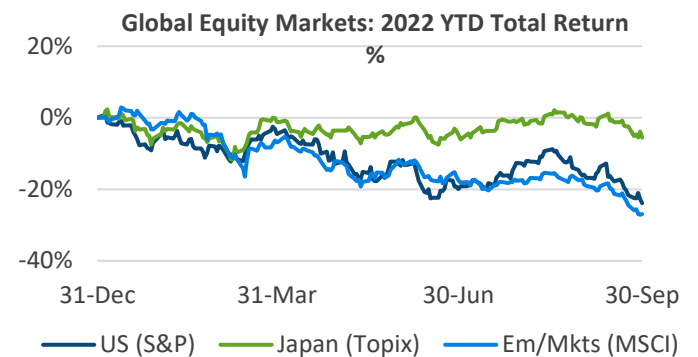
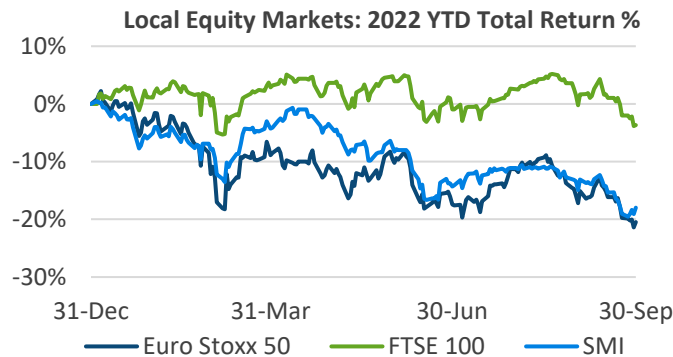
- Global equity markets had another negative performance in September as global central banks continued to hike policy rates.
- The Euro Stoxx 50 fell by 5.5%, having lost 3.7% during Q3.
- The FTSE 100 ended the month down 5.2%.

Global Equity Markets

- The S&P 500 witnessed a 9.2% drop in September, and the Japanese Topix lost 5.5%.
- The MSCI Emerging Markets index was down 11.7% at month-end.

Bond/FX Markets

- Bond markets continued their downward trend in September, with the European government bond index down 3.8% at month-end.
- The European corporate bond index was down 3.3%.
- The Euro had a mixed performance in September, losing 2.6% against the US Dollar. Meanwhile, gaining 1.7% and 1.5% against the Japanese Yen and the British Pound, respectively.

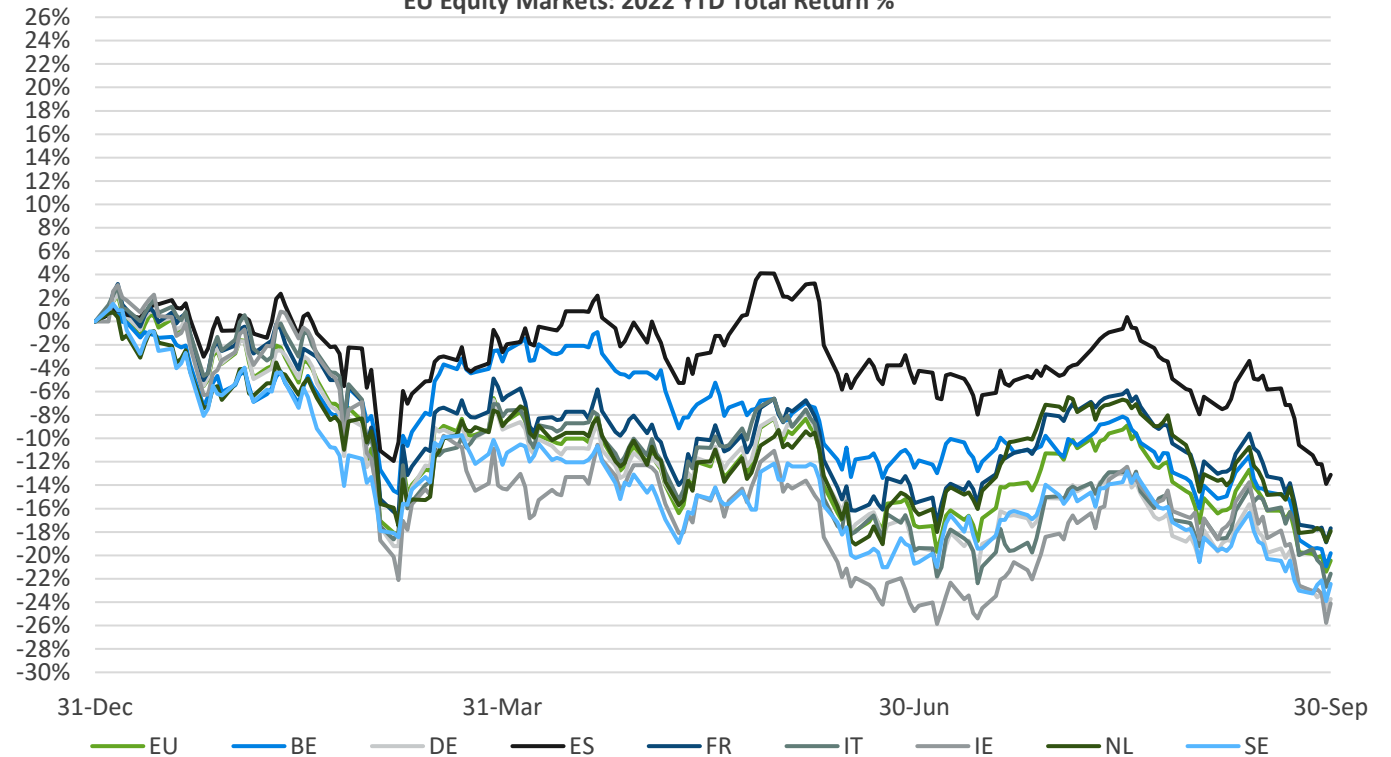


	Total Returns as of September 30, 2022											
	Euro Stoxx 50	FTSE 100	SMI	US (S&P)	Japan (Topix)	Em/Mkts (MSCI)	€ Govt	€ Corp	CHF in EUR	USD in EUR	JPY in EUR	GBP in EUR
1 Month	-5.5%	-5.2%	-5.3%	-9.2%	-5.5%	-11.7%	-3.8%	-3.3%	1.3%	2.6%	-1.7%	-1.5%
3 Month	-3.7%	-2.7%	-4.3%	-4.9%	-0.8%	-11.4%	-5.0%	-3.1%	3.3%	6.9%	0.2%	-2.0%
1 Year	-15.3%	0.9%	-9.3%	-15.5%	-7.1%	-27.8%	-17.0%	-15.1%	11.7%	18.1%	-9.1%	-2.1%
YTD	-20.5%	-3.7%	-18.0%	-23.9%	-5.5%	-26.9%	-16.5%	-14.6%	7.2%	16.0%	-7.7%	-4.2%

Eurozone Equity

- All major European equities posted losses for September.
- The Irish equity market was the worst performer of the month, down 9.3%. The index is also the worst performing equity market in the region year-to-date, having lost 24.1%.
- Italian equities suffered the smallest loss in the region in September, falling by 4.1%.
- The Spanish equity market remains as the outperformer year-to-date, down 13.1% for the year so far.

EU Equity Markets: 2022 YTD Total Return %



Equity Returns as of September 30, 2022

	EU	Belgium	Germany	Spain	France	Italy	Ireland	Netherlands	Sweden
1 Month	-5.5%	-6.0%	-5.6%	-6.6%	-5.8%	-4.1%	-9.3%	-5.8%	-4.6%
3 Month	-3.7%	-8.4%	-5.2%	-8.3%	-2.5%	-2.4%	0.9%	-2.2%	-2.2%
QTD	-3.7%	-8.4%	-5.2%	-8.3%	-2.5%	-2.4%	0.9%	-2.2%	-2.2%
YTD	-20.5%	-19.8%	-23.7%	-13.1%	-17.7%	-21.6%	-24.1%	-17.9%	-22.4%

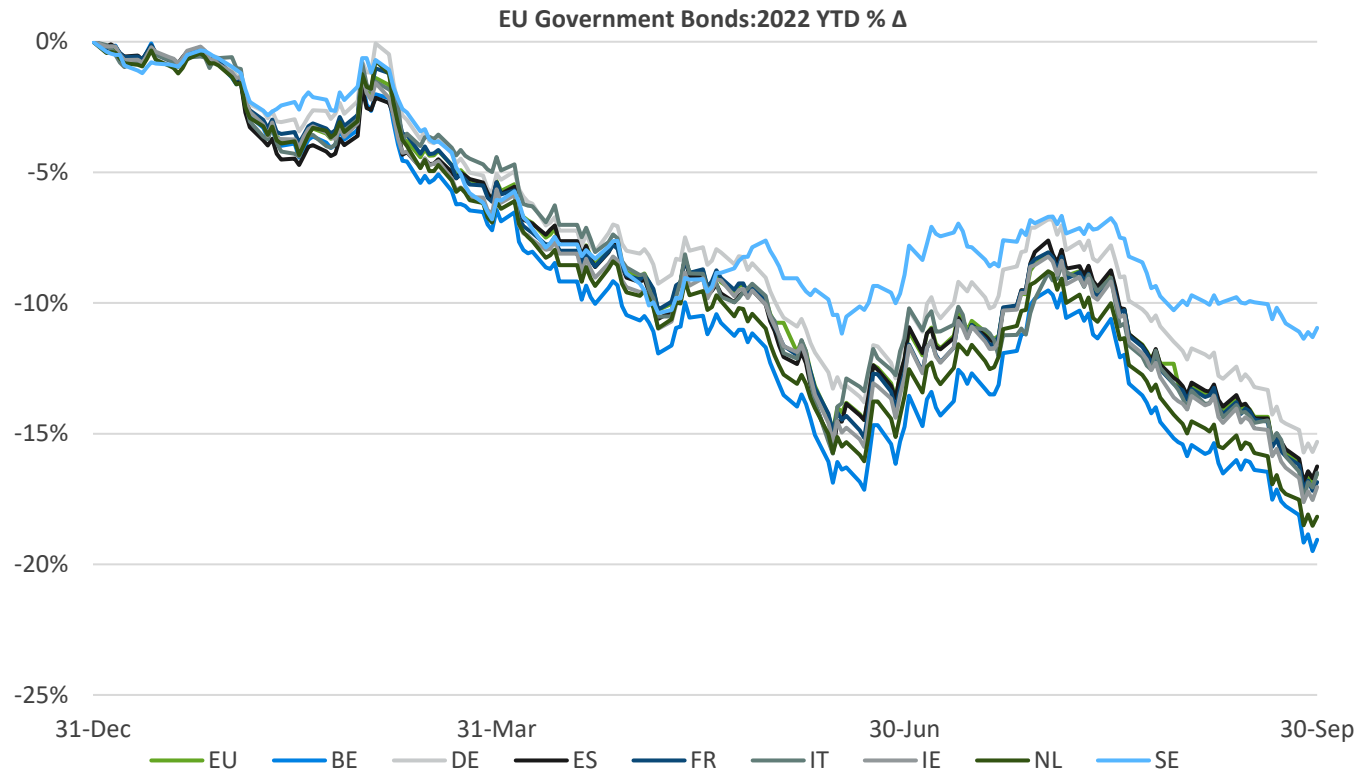
Milliman Financial Risk Management

EuroZone Market Monitor – 30 September 2022

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

Eurozone Government Bonds

- All major European government bond indices continued their slide in September and made losses for the month.
- The Swedish government bond index dropped the least in comparison to its peers, down 1.2%. Swedish government bonds have also suffered the smallest loss for the year, down 11.0% year-to-date.
- The Belgian government bond index saw the biggest fall, losing 4.3%. The index is also the worst performer year-to-date, down 19.1% for the year so far.



Bond Returns as of September 30, 2022

	EU	Belgium	Germany	Spain	France	Italy	Ireland	Netherlands	Sweden
1 Month	-3.8%	-4.3%	-3.9%	-3.5%	-4.0%	-3.3%	-3.7%	-4.2%	-1.2%
3 Month	-5.0%	-5.1%	-4.6%	-4.7%	-4.8%	-5.8%	-4.8%	-5.3%	-2.2%
QTD	-5.0%	-5.1%	-4.6%	-4.7%	-4.8%	-5.8%	-4.8%	-5.3%	-2.2%
YTD	-16.5%	-19.1%	-15.3%	-16.3%	-16.9%	-16.5%	-17.0%	-18.2%	-11.0%

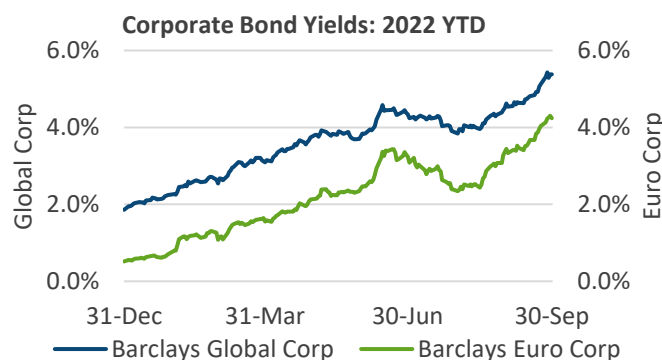
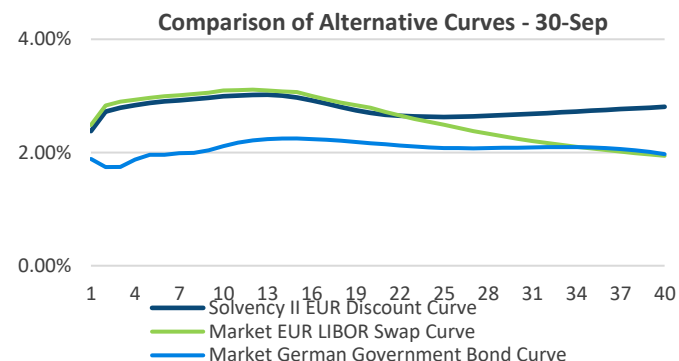
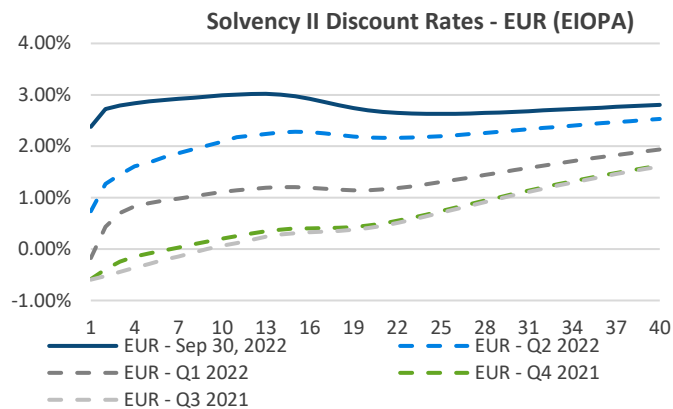
Liability Valuation Monitor

Risk Free Rates

- EUR risk-free rates rose at all terms in September.
- The 5 and 10-year risk-free rates increased by 70 and 66 basis points, respectively.

Corporate Bonds

- European and global corporate bond yields rose sharply in September. The former increased by 88 basis points and the latter by 87 basis points.
- Global credit spreads widened by 20 basis points in September and their European counterparts widened by 23 basis points.
- The rise in risk-free rates, combined with the widening in the European corporate bond spreads, resulted in losses 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 Q2 2022	164	119	90	53	36	28	104	100	5	7
Since Q1 2022	255	198	188	156	114	87	229	268	56	96
Since Q4 2021	296	296	279	224	160	118	352	372	83	130
Since Q3 2021	297	316	293	229	162	120	373	389	92	141

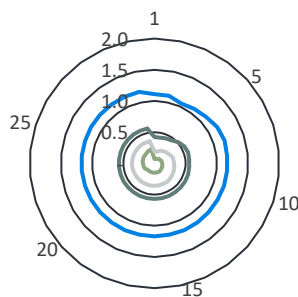
Solvency II Monitor - Spreads

Fundamental Spreads

- There were no material changes since the last report.

Fundamental Spreads %

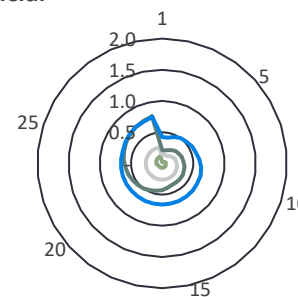
EUR: Financial



— AAA — AA — A — BBB

EUR Financial Fundamental Spread %					
	1Y	Y5	Y10	Y20	Y30
AAA	0.07	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	0.20	0.32	0.44
BBB	0.15	0.25	0.34	0.48	0.59

EUR: Non-Financial



— AAA — AA — A — BBB

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	0.77
BBB	0.42	0.52	0.65	0.66	0.76
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	0.77
BBB	0.11	0.22	0.34	0.57	0.76

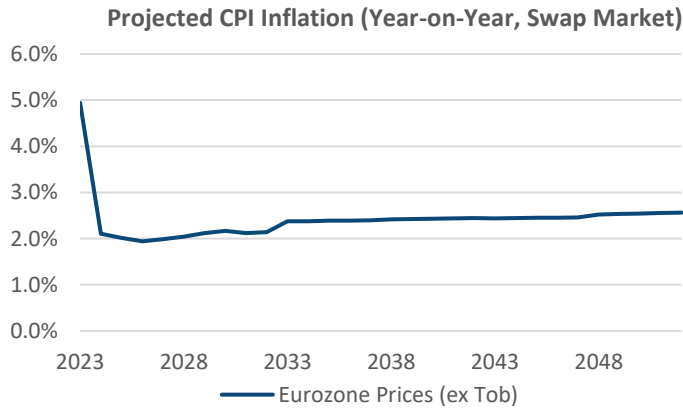
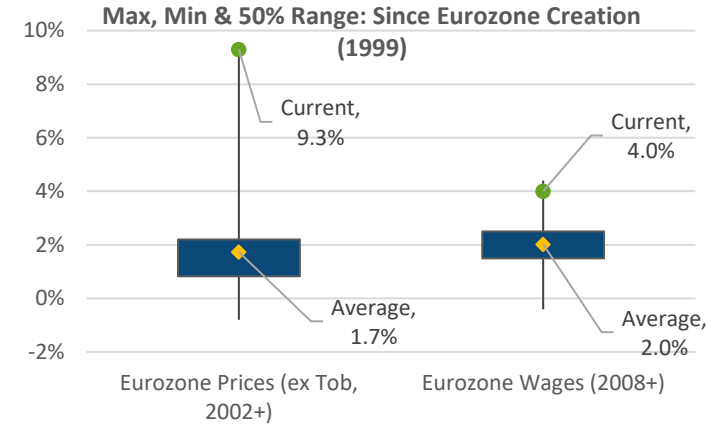
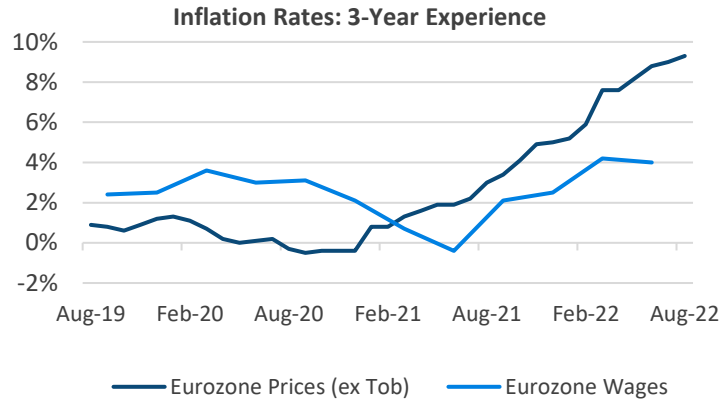
The **Solvency II risk-free discount rates** are based on applying the Smith-Wilson Extrapolation to LIBOR swap rates sourced from Refinitiv and applying the Credit Risk Adjustment as defined in the Technical Specs. The data is provided by EIOPA and as of 30/09/22.

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 30/09/22. **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 9.3% in August, an increase of 30 basis points from the previous month.
- The Eurozone projected CPI curve declined at the very near-term with the 1-year forward CPI falling by 2.8%, whilst the longer-end of the curve saw a marginal increase.
- There were no updates to the wage inflation figure this month.



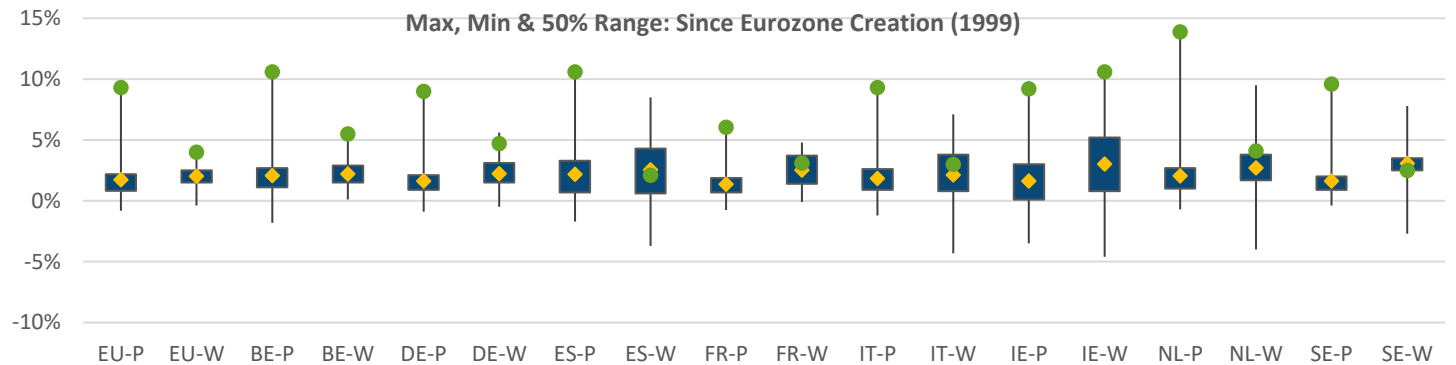
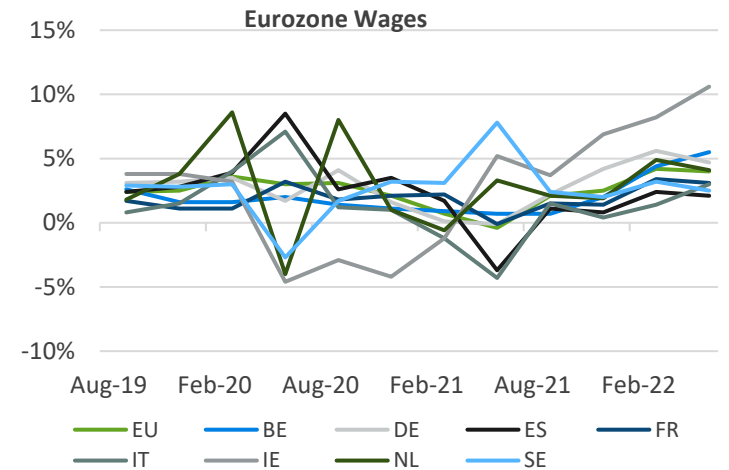
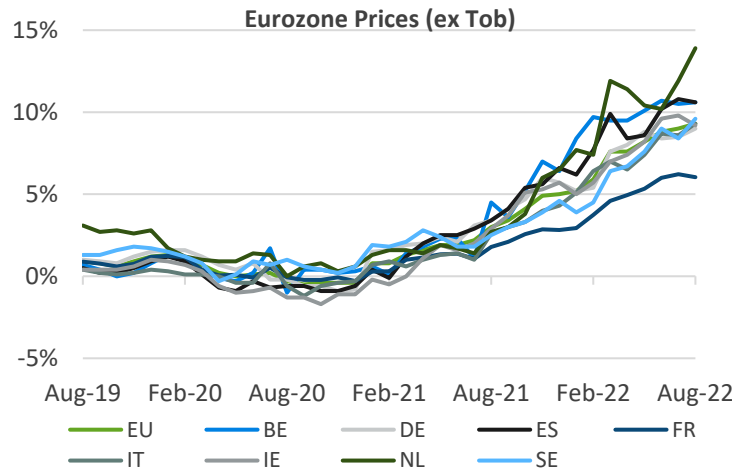
Milliman Financial Risk Management

EuroZone Market Monitor – 30 September 2022

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

Inflation Monitor

- Inflation figures for major European economies were mixed in August.
- Dutch price inflation saw the largest increase in the region in August, with the headline figure increasing by 200 basis points to 13.9%, which was the highest price inflation in the Euro area in August.
- Irish prices fell by 60 basis points to 9.2%, the largest drop in comparison to the other European economies.
- France remained the country with the lowest price inflation in the Eurozone, at 6.0%.
- There were no updates to the wage inflation figures 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.	1.7%	2.0%	2.1%	2.2%	1.6%	2.2%	2.2%	2.5%	1.4%	2.5%	1.8%	2.1%	1.6%	3.0%	2.1%	2.7%	1.6%	3.1%
Cur	9.3%	4.0%	10.6%	5.5%	9.0%	4.7%	10.6%	2.1%	6.0%	3.1%	9.3%	3.0%	9.2%	10.6%	13.9%	4.1%	9.6%	2.5%

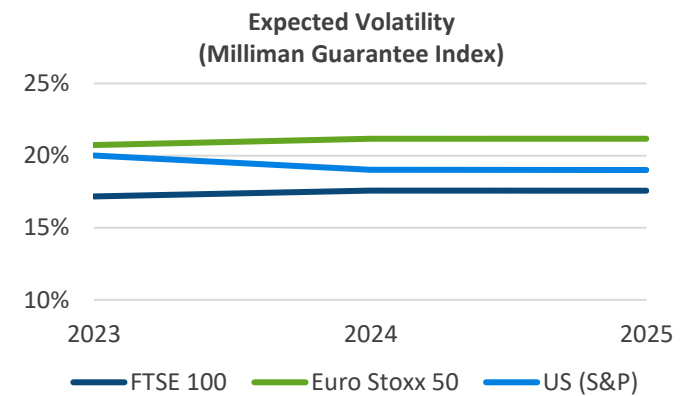
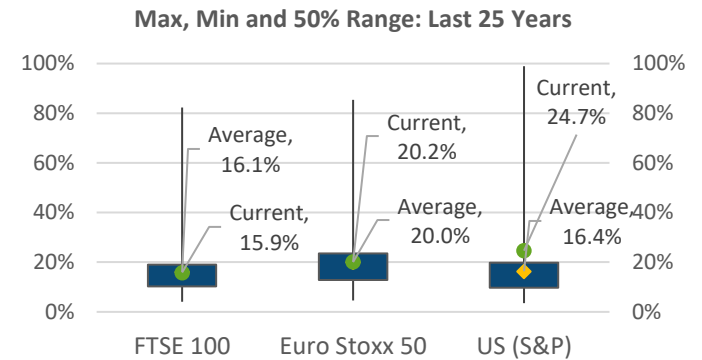
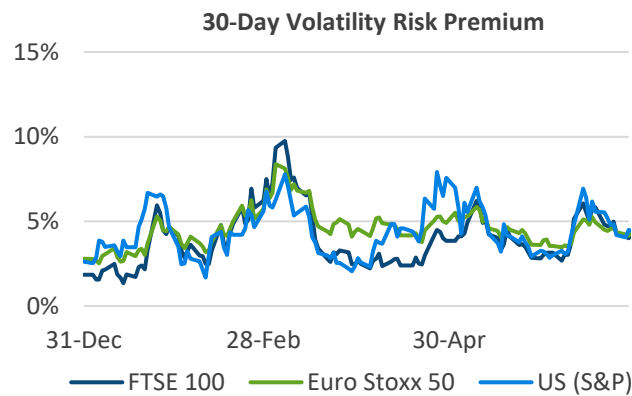
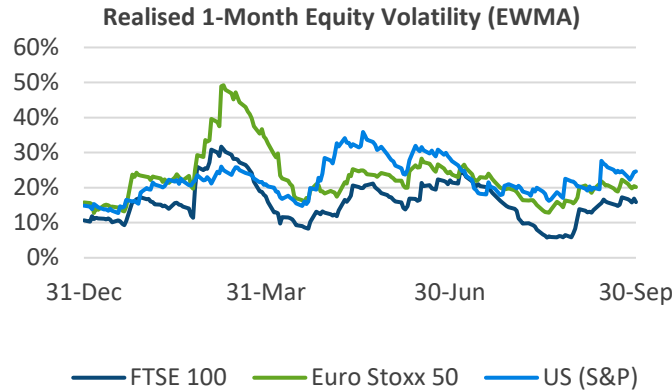


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Volatility and Hedging Cost Monitor

- Realised volatilities on major indices increased in September as equity markets witnessed a wide selloff.
- The FTSE 100 ended the month with a realised volatility of 15.9%. The same measure stood at 20.2% and 24.7% 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 28th of June. ****

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





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).

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.

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

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