Milliman Market Monitor - August 2023

Market Commentaries

Equities

●US equities had a volatile month due to renewed concerns over the Chinese economy and resilient US economic data suggesting another rate hike may be on the horizon. The S&P 500 was down 1.6% this month. July jobs data was still strong, with unemployment at 3.5%, and average hourly earnings higher than expected at 4.4% YoY. Headline CPI for July was slightly higher, at 3.2% YoY.

● European and UK equities were also weaker. The FTSE 100 was down 3.4%, and the EuroStoxx 50 was down 3.8%. The EU labor market remains tight, with unemployment dropping to 6.4%. Eurozone inflation remains above the ECB's target, with headline CPI at 5.3% YoY in the August print.

● Japanese equities fared similarly, with the Nikkei down 1.7%. Other Asian equities were hit hard due to weak Chinese data and renewed property market concerns, with the MSCI Asia Ex-Japan Index down 6.6%.

● Aussie Equities were weaker, with the ASX 200 down 0.7%. Consumer Discretionary stocks were the best-performing sector, up 4.6%, while Utilities and Consumer Staples were the laggards this month, both dropping over 4%.

Fixed Income

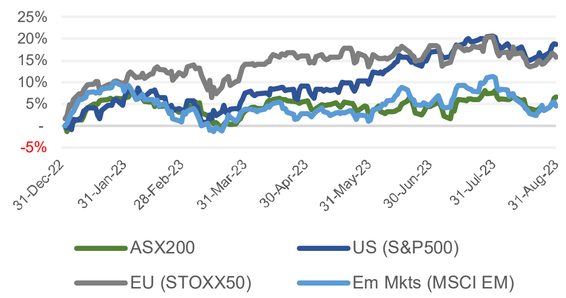
● Sovereign bond yields across the board were higher this month. Ratings agency Fitch downgraded US long-term debt from AAA to AA+; however, the initial market reaction was muted. US 10-year Treasury yields did rise this month, gaining 16 basis points (to 4.1%) due to better-than-expected economic data.

● The RBA kept rates steady again in their August meeting. Weaker-than-expected labor market data bolstered the case for the RBA to hold rates steady. Overall, Australian Bonds returned 0.7%, and Global Bonds returned -0.3%, respectively, as measured by Bloomberg Aggregate indices.

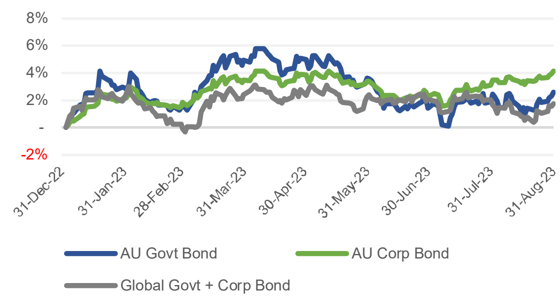
Currencies

● There was a sell-off in the Aussie Dollar due to continued signs of distress in the Chinese economy and higher volatility. Conversely, higher yields and volatility helped strengthen the US Dollar. The AUD/USD rate fell by 3.6%, closing at 64.84 US Cents. This depreciation of AUD has provided a boost to the returns on unhedged global equities from an Australian investor's perspective.

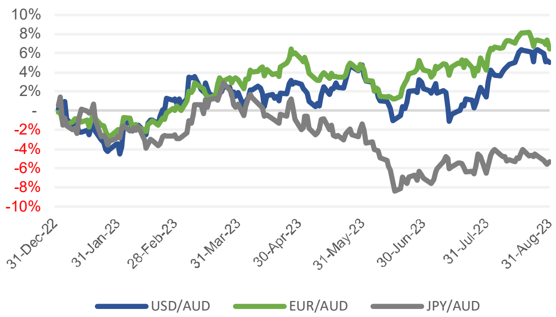
Equities: YTD Total Return[1] %



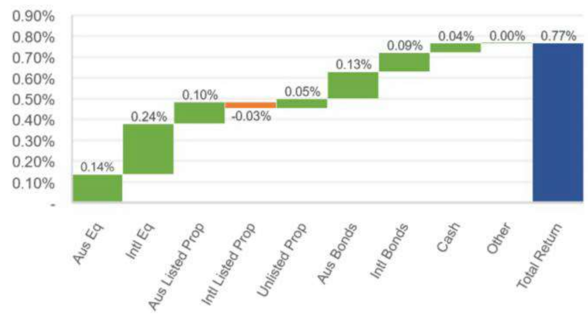
Fixed Income: YTD Return[2] %



Foreign Currencies: YTD Return %



Monthly Return Contribution by Asset Class: Morningstar Aus Multi-Sector Balanced Index



Returns ending 31 August 2023

	ASX200	US (S&P500)	EU (STOXX)	EM Mkts (MSCI)	AU Govt Bond	AU Corp Bond	Global Bond	USD/AUD	EUR/AUD	JPY/AUD
1 Month	-0.7%	-1.6%	-3.8%	-6.2%	0.7%	1.0%	-0.3%	3.6%	2.1%	1.3%
3 Month	3.9%	8.3%	2.1%	3.5%	-1.0%	0.7%	-0.5%	0.3%	1.7%	-4.0%
1 Year	9.6%	15.9%	25.3%	1.3%	1.3%	4.2%	-1.2%	5.5%	13.8%	0.7%
CYTD	6.7%	18.7%	15.8%	4.6%	2.6%	4.1%	1.8%	5.1%	6.5%	-5.3%

[1]Equities returns captures both the capital gains as well as any cash distributions, such as company dividends.

[2]AU Govt Bond uses the Bloomberg AusBond Govt 0+ Yr Index, which measures the return of Australian Treasury and Semi-government bonds maturing in 0+ years. AU Corp Bond uses the Bloomberg AusBond Credit 0+ Yr Index, which measures the return of Australian corporate/credit securities maturing in 0+ years. Global Govt + Corp Bond uses the Bloomberg Barclays Global

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Upcoming Key Economic Events & Risk Commentaries

● Implied volatility, often viewed as the market's fear index, has decreased for the ASX200. While the S&P 500 and Stoxx 50 have increased, they remain below the 25th percentile over the past year. The implied likelihood of the S&P 500 falling more than 10% and 5% in September has increased from last month, currently sitting at 1% and 7%, respectively.

● While the Fitch downgrade on US long-term government bonds did not trigger a spike in market volatility, we should remain vigilant about potential Moody's downgrades or watches on the ten largest US regional banks. These banks hold the majority of corporate debt financing industries, such as tech companies, which are sensitive to the current high-interest rate environment.

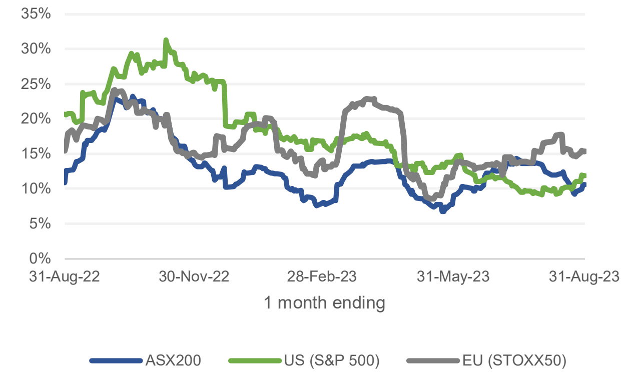
● The US Federal Reserve is either at or close to the end of its monetary tightening cycle. Despite interest rates being much higher than those in 2022, the US economy is growing at just over 2%, and the labor market is gradually slowing. Factors that could disrupt this stability include sticky wage growth and recent pick up in energy costs.

● The sluggish growth recovery in China and the absence of definitive national stimulus packages introduced by the Chinese government, as well as the troubled Chinese property debt/loan market, could introduce market volatility.

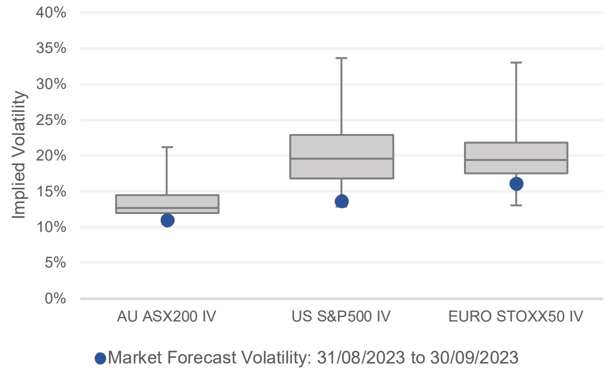
● Similarly in Australia, the RBA is also near the tipping point of its monetary tightening cycle and future rate decisions would be more "data-driven" especially in the area of labor market and service inflation, which have remained resilient so far this year. The recent increases in energy costs, housing prices, and rent could hinder the RBA's battle against inflation.

● We should also stay alert if domestic economic activities in Australia drop too quickly because its households are more sensitive to higher interest rates through higher private debt and floating-rate loans. This could suggest that the RBA might have gone too far with its tightening.

Realised 1 Month Equity Volatility (%)

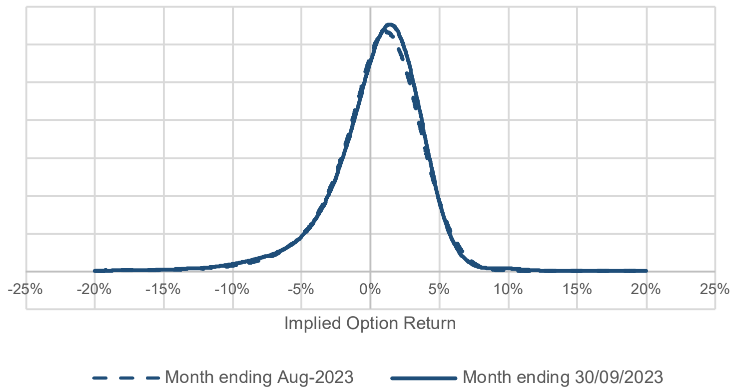


Implied Volatility[3,4] (IV)



The chart above shows the current market implied volatility for the next month, and compares it against the range of implied volatilities for the past 1 year.

1 Month S&P500 Implied Return Distribution[5]



Implied likelihood[5] of S&P 500:	Month ending Sep-2023	Month ending Aug-2023
Falling more than 10%	**~ 1%**	~ 1%
Falling more than 5%	**~ 7%**	~ 6%

[3]**Implied Volatility (VIX) r**epresents the expected volatility of the index over the next 30 days (starting from the effective date of this report), as derived from the market prices of index options traded on the exchange.

[4]**Box & Whisker Plot** is designed to give readers a quick sense of the range of implied volatility for the past year. The end of the whiskers indicate the maximum and minimum implied volatility for the past year. The box represents the interquartile range (from first to third quartile implied volatility values), and the middle line indicates the median implied volatility value for the past year.

[5]**Implied Return Distribution / Implied Likelihood r**epresents the forecasted return (and its likelihood) of the index over the next 30 days (starting from

Observations on Sustainable Withdrawal Rates

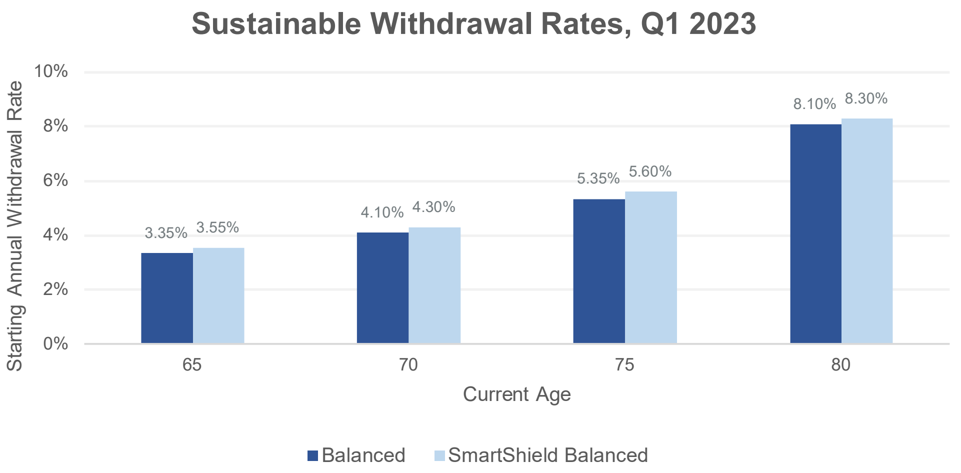
We observe that sustainable withdrawal rates at the end of Q2 2023, are higher compared to Q1 2023.

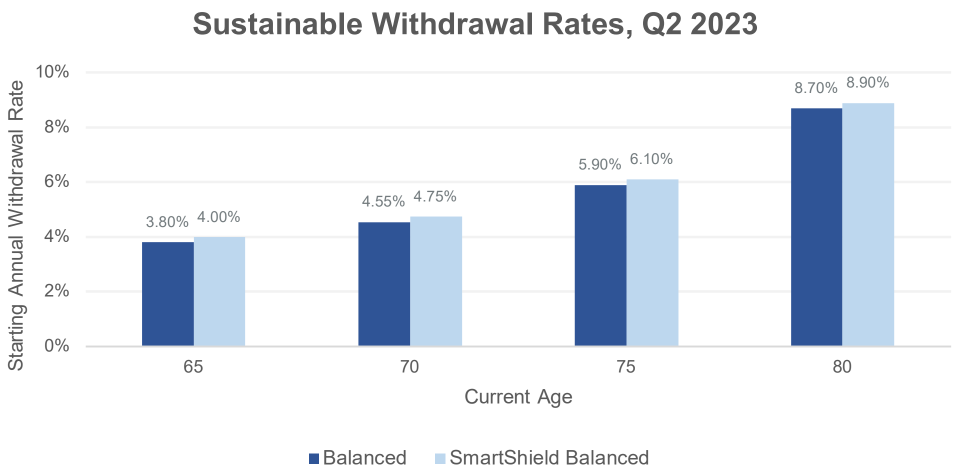
This was mainly driven by the change in interest rate levels over the period with 10-year government bond yields increasing by approximately 70bps, leading to higher simulated returns from all asset classes.

Using the SmartShield series of portfolios as an example, we have illustrated that additional sustainable withdrawal rates are achieved when we add a risk management strategy to the portfolios.

By controlling the level of volatility and reducing the impact of sustained market drawdowns, solutions such as the SmartShield portfolios which employ a risk management strategy, can reduce the exposure to sequencing risk and result in higher sustainable withdrawal rates for retirees.

In August, Milliman's SmartShield portfolios maintained an average hedge level of approximately 16% for equities.





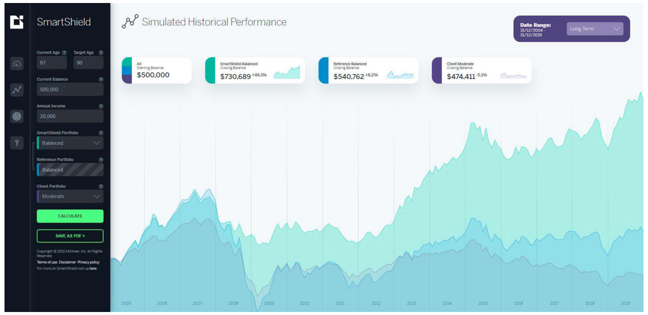
Sustainable Withdrawal Rate is defined as the maximum amount that can be withdrawn from a portfolio each year with a 90% certainty that this rate can be sustainably withdrawn (adjusted for inflation) until the target age of 90. An additional constraint introduced is for the potential shortfall to be less than 5 years. Note the withdrawal rate is calculated with regards to future projections of 5,000 stochastic scenarios. Further information on the assumptions used to generate these scenarios can be found via our portfolio simulator, which is free to access at https://smartshield.millimandigital.com/.

For example, a 4% sustainable withdrawal rate for a 70 year old retiree with $500k balance means the retiree can withdraw $20k in the first year. And for each subsequent years, the amount the retiree can withdraw is $20k plus any increase due to projected inflation (CPI).

SMARTSHIELD™ SIMULATOR – FREE ACCESS FOR FINANCIAL ADVISERS

Built for financial advisers and complementary to Milliman's SmartShield portfolios, the Simulator strengthens your client conversation by:

- Calculating the likelihood of meeting retirement goals
- Illustrating the impact of experiencing a market crash scenario e.g. the GFC or Covid-19



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