Milliman Market Monitor - May 2023

Market Commentaries

Equities

● US equity markets remained mostly flat in May, supported by a tech sector rally, despite concerns such as the US debt ceiling and poor Chinese economic data weighing down on the markets. The S&P 500 returned 0.4% for the month.

● European equities declined this month due to weak data from China. The EuroStoxx 50 saw a loss of 2.2% in May. Japanese equities outperformed, with the TOPIX gaining 3.6% this month based on improved growth forecasts.

● Australian equities experienced a decline in May, influenced by global issues including China and the US Debt Ceiling, as well as a surprising hawkish turn by the RBA. Market sentiment dampened following higher-than-expected CPI figures, leading investors to price in further rate hikes from the RBA.The ASX 200 lost 2.5% in May. Similar to the US, the IT sector performed well, gaining 11.6% while consumer discretionaries and staples were the weakest, down 6.2% and 4.6% respectively.

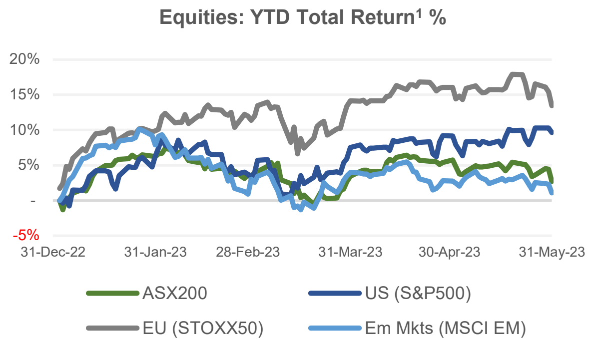
Fixed Income

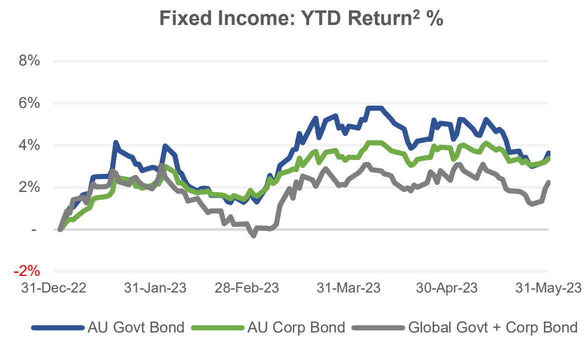
● Fixed income markets rallied across both Australia and overseas as investors priced in an increased chance of further rate hikes from the US Fed and the RBA. The RBA shocked the market this month by raising rates again to 3.85% in their May meeting. Australian Government Bonds and Global Bonds generated a return of -1.3% and -0.5% respectively, as measured by Bloomberg indices.

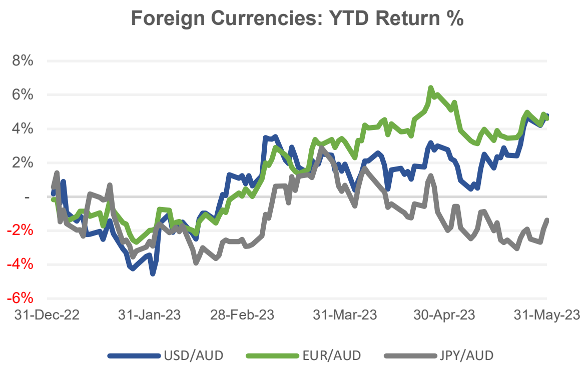
Currencies

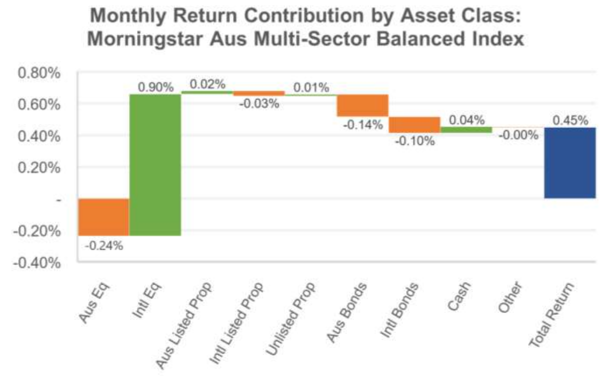
● The Aussie Dollar experienced a brief rally against the US Dollar before ultimately ending the month on a weaker note. It ended the month at 65.03 US Cents, a 1.7% decline. This was driven by weaker Chinese data (eg May Mfg. PMI was 48.8, signalling a contraction) and lower iron ore prices.

● The AUD made slight gains against the other majors such as the Euro, where it gained 1.3% and the Yen, gaining 0.5%.









Returns ending 31 May 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	-2.5%	0.4%	-2.2%	-1.7%	-1.3%	-0.5%	-0.5%	1.7%	-1.3%	-0.5%
3 Month	-0.9%	5.7%	1.3%	0.2%	2.2%	1.8%	2.0%	3.5%	4.6%	1.2%
1 Year	2.9%	2.9%	14.2%	-8.5%	1.5%	3.1%	-2.6%	10.4%	9.9%	1.9%
CYTD	2.7%	9.6%	13.5%	1.1%	3.6%	3.4%	2.2%	4.8%	4.6%	-1.4%

[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 Aggregate Index, which

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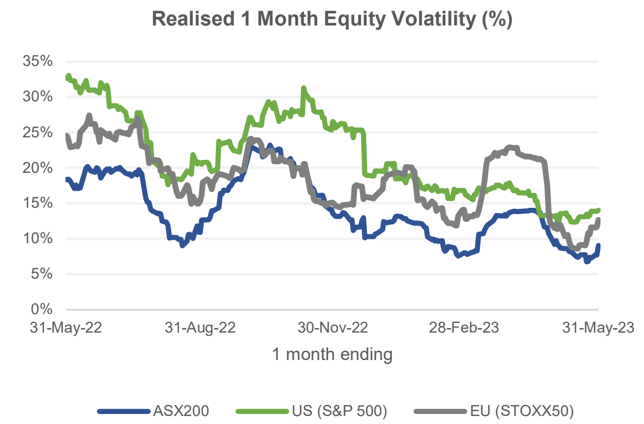
Upcoming Key Economic Events & Risk Commentaries

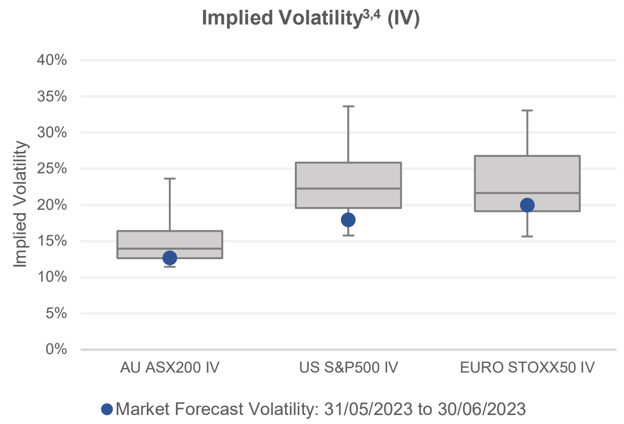
●Implied volatility (often viewed as the market's fear index) has increased for the ASX, S&P500, and Stoxx 50. The S&P500 and ASX have remained below the 25th percentile over the past year, while the Stoxx 50 has remained below the 35th percentile over the past year. The implied likelihood of the S&P 500 falling more than 10% and 5% in June remains the same as last month and is currently sitting at 3% and 10%, respectively.

● The global equities were modestly influenced by the developments in the US Debt Ceiling talks over the past few weeks. While the risk of the US Treasury defaulting was averted at the 11th-hour with President Biden signing the bill on Saturday; several other factors could pose downside risk in equity. The S&P500 is up 12% YTD, but this is mostly contributed by the stocks related to AI only. Inflation in the EU and UK remains high, necessitating further rate hikes. More recent data shows that US Goods inflation is moderating, while service inflation remains high due to the tight labour market. As such, several Fed Governors remain hawkish in their commentary and are seeking further evidence of price stability given the rate hikes thus far.

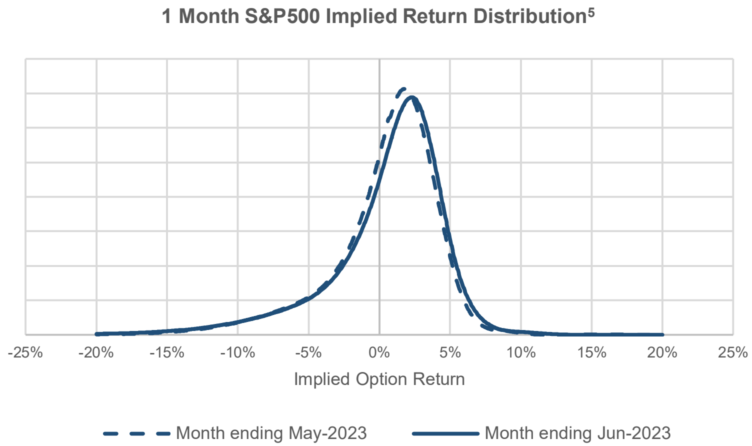
● If the central banks are unable to dampen the wage rise expectations, then the overall inflation can become sticky, leading to further rate hikes and intensifying the risk of severe recession in the medium term. Given the US Treasury yield curve is already inverted, the expectation of a weakening economy could be further entrenched.

● The monthly data showed that inflation in Australia is moderating, but we are not out-of-the-woods yet with respect to higher interest rates. Recent unemployment figures are mixed, while the energy costs are on the rise again. Household spending is decreasing, but the Fair Work Commission has decided to lift the minimum wage and award rates by 8.6% and 5.75% respectively. This decision would impact almost a quarter of the Australian workforce, and we can expect the pay increases will be mostly spent by lower-income earners, possibly adding to inflationary pressures and further rate hikes.





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.



Implied likelihood[5] of S&P 500:	Month ending Jun-2023	Month ending May-2023
Falling more than 10%	**~ 3%**	~ 3%
Falling more than 5%	**~ 10%**	~ 10%

[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 the effective date of this report), as implied from the market prices of index options traded on the exchange.

Observations on Sustainable Withdrawal Rates

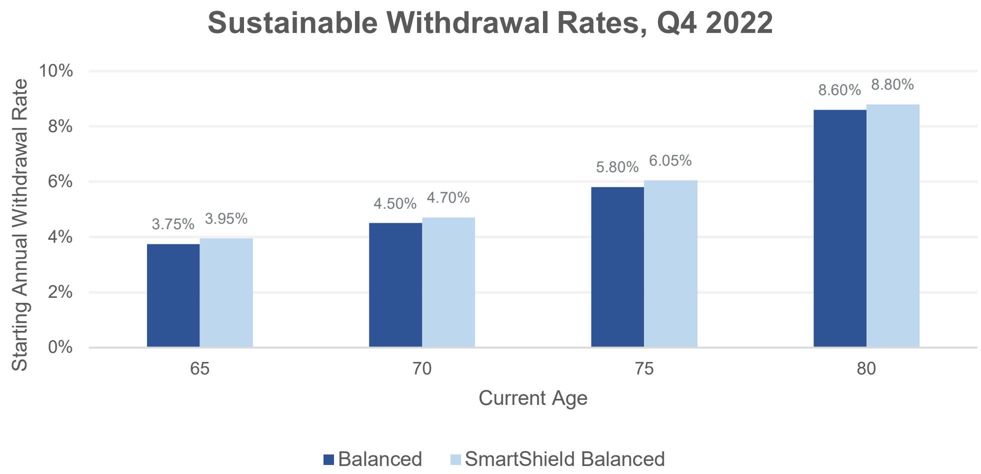
We observe that sustainable withdrawal rates at the end of Q1 2023, are lower compared to Q4 2022.

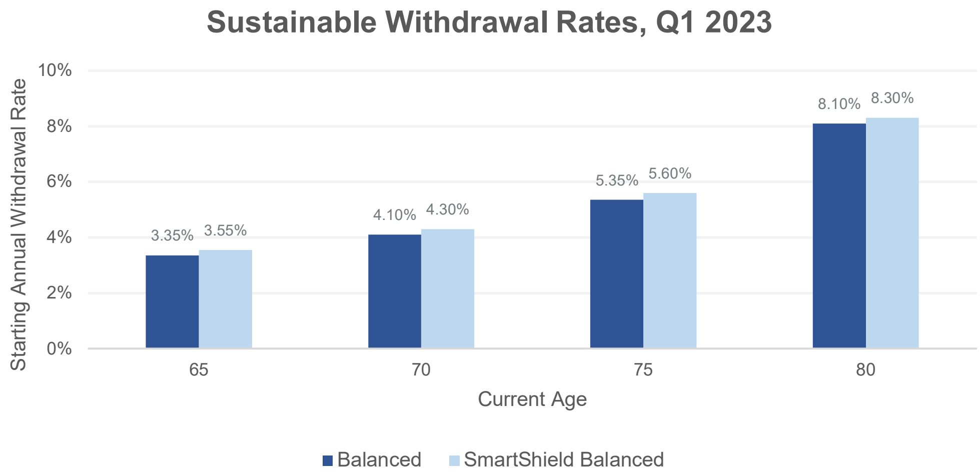
This was mainly driven by the change in interest rate levels over the period with 10-year government bond yields decreasing by approximately 75bps, leading to lower simulated returns from all asset classes.

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.

Milliman's SmartShield portfolios maintained a relatively meaningful equity hedge level in May. The portfolio had an average hedge level of around 21% for Australian equities and 30% for global equities. The portfolios were able to achieve a slight outperformance compared to their benchmarks during a period of weak equity returns.





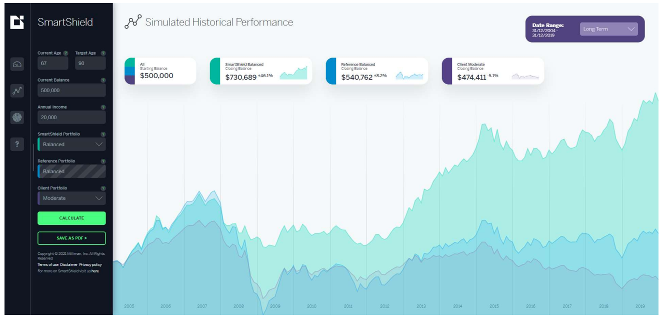
Sustainable Withdrawal Rate is defined as the maximum amount that can be withdrawn from a portfolio each year with a 90% certainty that this rate can be sustainably withdrawn (adjusted for inflation) until the target age of 90. An additional constraint introduced is for the potential shortfall to be 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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