DECISION-MAKING BY INVESTORS: ISSUES TO CONSIDER FOR SUPERANNUATION INVESTORS IN SETTING ASSET ALLOCATION

Year to date, on an inflation-adjusted, after-tax basis, international shares have been the highest-return asset class for a superannuation investor, recording a return of 10.5 per cent. Australian-listed shares earned a typical 7.0 per cent while interest-rate sensitive assets lost money:10-year Australian government bonds lost 3.6 per cent, U.S. investment-grade corporate bonds returned minus 1.3 per cent and Australian-listed property is down 0.1 per cent.

Research on investment decisions of Australian superannuation investors shows that wholesale investors who also do not switch their asset allocation mix earn an average of 1-2 per cent higher annual returns than retail investors who also switch their asset allocation mix. We also have evidence from the U.S. that clients of retail brokers are pre-disposed to buy attention-grabbing stocks. In aggregate, we can conclude that retail investors are likely to make investment decisions on the basis of recent, attention-grabbing news, which could be why their asset allocation switches are poorly timed.

In deciding on asset allocation, investors can mitigate the potential for behavioural biases to creep into decision-making. The most important thing to note is that there is no time-series correlation in asset class returns. Whether stocks or bonds were up or down this year does not predict future outcomes. Then, investors can consider whether they have embedded inertia in decision-making, making decisions on the basis of a familiarity bias (which does not necessarily lead to an information advantage), making decisions which optimise the investor's after-tax returns, and properly considering the specific consequences of a shock to the portfolio (for example, whether the future savings rate can be increased to recover from the shock).

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Jason is the co-founder of Hamilton12 and lecturer in finance at the Ross School of Business, University of Michigan. Hamilton12 launched the Australian Diversified Yield Index in November 2020, computed by Standard & Poor's. Hamilton12 launched the Hamilton12 Australian Shares Income Fund in September 2022. The index and fund are designed to optimise the Australian equities allocation for Australian resident investors. Jason's research into value-based investing, analyst earnings forecasts, and the value of dividend imputation credits is the basis of stock selection for the portfolio. Over two decades, Jason has studied imputation credits using prices of ordinary shares, options and hybrid securities. In addition, he has derived expected share market returns from analyst earnings forecasts; measured analyst forecast accuracy; quantified the risk-reward implications of industry sector rotation; and modelled retirement income streams for superannuation investors. Jason completed his PhD in finance at The University of Queensland and is a CFA charterholder.

31 May 2023

Introduction

As we head into the last month of the financial year, superannuation investors are likely to turn their minds to asset allocation. It is interesting to consider the way investors make decisions in light of recent returns, and whether this decision-making process is optimal for their portfolio.

A typical balanced portfolio

A typical balanced superannuation fund without access to specialized private equity funds and infrastructure assets allocates 40 per cent to international shares, 30 per cent to Australian-listed shares, 10 per cent to property and 20 per cent to fixed interest, with the fixed interest component split approximately 10 per cent to government bonds, 7.5 per cent to investment-grade corporate bonds and 2.5 per cent to high yield corporate bonds.[1] Investors with higher risk tolerance will allocate a higher proportion of their portfolio to shares; investors that are relatively more risk averse will hold more fixed interest and within fixed interest hold more government debt.

Financial year returns by asset class

Importantly, investors should consider after-tax, inflation-adjusted returns on their portfolio and amongst asset classes. Proper consideration of taxes impacts upon the Australian equities weight because approximately 80 per cent of dividends come with imputation credits, which on average boost annual returns by about 0.6 per cent for a superannuation investor.[2] The inflation adjustment matters because the purpose of superannuation is to maintain a real income stream in retirement.

In contrast to fiscal year 2021, in which returns were negative across all asset classes mentioned above, the year to date has seen more typical returns, relative to the range of outcomes in the prior 29 fiscal years (Table 1 and Figure 1). [3]

The best-performing year to date asset class is international shares, proxied by the S&P Global 1200 index, which recorded a return of 10.5 per cent, aided substantially by a fall in the Australian dollar from 69 to 65 U.S. cents. On average in the past 29 years international shares have earned a return of 6.0 per cent.

Two asset classes have earned year to date returns close to their 29-year average.

- Australian-listed shares, proxied by the S&P/ASX 200, have earned year to date returns of 7.0 per cent, close to their 29-year average of 7.3 per cent.
- U.S. high-yield debt, proxied by the S&P High Yield Corporate Bond Index, have earned returns of 4.0 per cent, close to their 29-year average of 3.2 per cent.

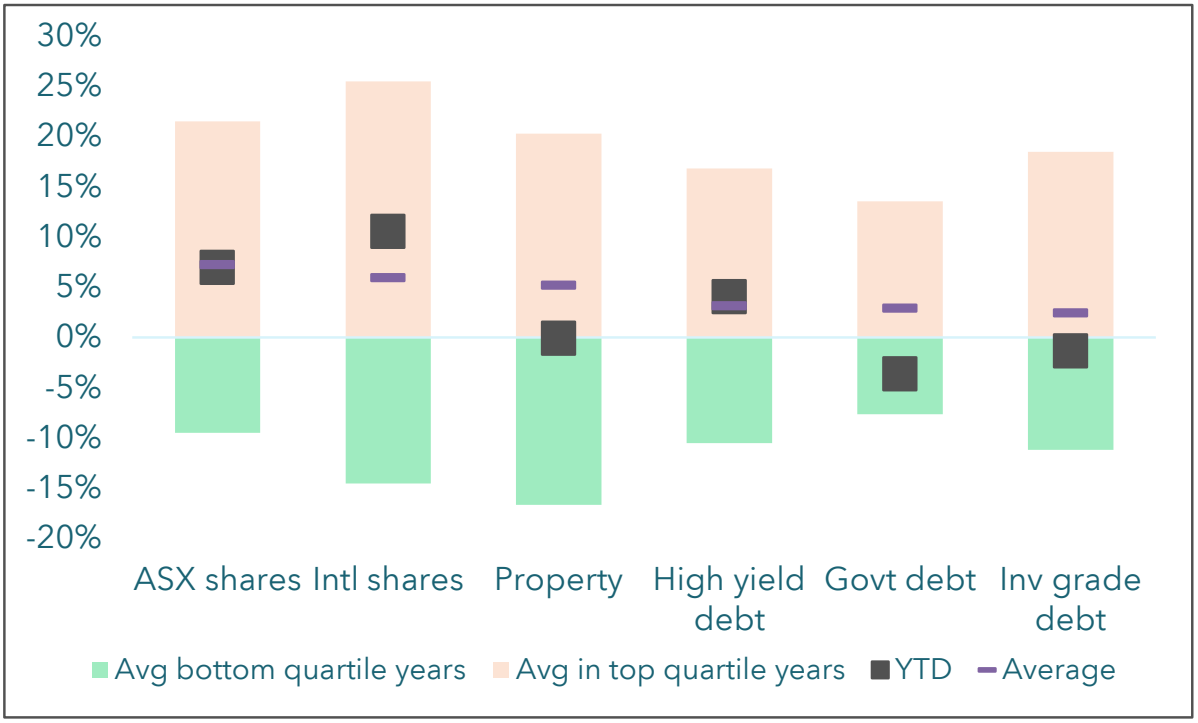
The most interest-rate sensitive investments earned below-average year-to-date returns.

- Listed property, proxied by the S&P/ASX Property Index, has earned returns of minus 0.1 per cent, well below the 29-year average of 5.2 per cent.
- U.S. investment-grade corporate debt, as measured by S&P, has earned returns of minus 1.3 per cent, compared to the 29-year average of 2.5 per cent.
- Australian 10-year government bonds, as reported by Datastream, incurred losses of 3.6 per cent, compared to the 29-year average of 2.9 per cent.

Table 1. After-tax real returns to a superannuation investor fiscal year to date and in the prior 29 fiscal years

	Australian shares	International shares	U.S. inv grade bonds	U.S. high yield bonds	Australian govt bonds	Australian listed prop
Fiscal yr to date	7.0%	10.5%	-1.3%	4.0%	-3.6%	-0.1%
Fiscal years 1994 to 2022:						
Min	-18.8%	-22.3%	-18.5%	-16.3%	-19.8%	-40.0%
Avg bottom 25%	-9.5%	-14.5%	-11.2%	-10.5%	-7.7%	-16.7%
Average	7.3%	6.0%	2.5%	3.2%	2.9%	5.2%
Avg top 25%	21.5%	25.5%	18.5%	16.8%	13.6%	20.3%
Max	26.1%	42.8%	31.8%	30.6%	19.9%	29.2%

Figure 1. After-tax real returns to a superannuation investor year to date and in the prior 29 fiscal years



Portfolio reallocation

Evidence on decision-making and the time-series of returns

Interest rate rises in Australia and globally were a material factor in the relative performance across asset classes as central banks raised interest rates sharply in order to dampen spending and therefore mitigate inflation. Investors considering their asset class mix might be tempted to do so on the basis of their inflation expectations: An investor betting on further rate increases would allocate more to shares, while an investor who believes inflation is almost under control would lean towards greater weight in fixed income.

However, before making a switch it is worthwhile considering how individual investors make investment decisions and the potential pitfalls of overweighting recent information in decision-making.

First, we have evidence on the relative superannuation returns of different investors. In 2015, researchers from the University of Western Australia published their examination of 15,000 individual investors of a large Australian financial institution over ten years ending January

2012.[4] They found that risk-adjusted annual returns are relatively higher for wholesale investors versus retail investors (about 0.6 per cent to 0.9 per cent) and for investors who do not switch their asset allocation mix (about 0.4 per cent to 1.0 per cent). So, in aggregate, higher net wealth investors who do not switch asset allocation earn returns 1-2 per cent higher than retail investors who switch. The implication is that higher net worth investors have an information advantage that leads to higher returns, but this does not come from their ability to time their entry and exit into different asset classes. More likely, wholesale investors are willing to tolerate higher risk on average, and investors who switch do so at sub-optimal times in relation to future returns.

Second, we have evidence about the performance of investors who trade individual shares. Researchers from the University of California examined the trades of hundreds of thousands of investors at three different broking firms over 1991 to 1999 and published their findings in 2008.[5] The researchers found that retail investors were predisposed to buy attention-grabbing stocks, specifically stocks that had unusual volume or a large price move on a given day, or stocks that were in the news. In contrast, for 14 diversified institutional money managers there was no trade bias towards stocks that were in the spotlight.

The pre-disposition of retail investors to buy attention-grabbing stocks suggests a temptation by retail investors to overweight recent information in decision-making. Perhaps this is what leads to relatively poor returns from switching: investors either expect mean-reversion in returns, or positive returns to continue, and change their asset allocation mix accordingly.

Can returns next year be predicted on the basis of the prior year's returns?

Unfortunately, neither prediction is true. Across all equities, property and fixed income asset classes, the time-series correlation in returns is almost zero.[6]

Occasionally, one particular asset class has a run but timing the start and end of the run is difficult and not predicted by the time series of returns.

- Over four consecutive years ending June 2007 Australian shares was the highest-performing asset class, recording cumulative average annual returns of 21 per cent in real-after-tax terms (followed by two-year cumulative average annual returns of -17 per cent).
- Over the same four-year period, Australian-listed property earned cumulative average annual returns of 14 percent (followed by two-year cumulative average annual returns of -39 per cent).
- Over three consecutive years ending June 2015 global shares was the highest-performing asset class, also at a cumulative average annual return of 21 per cent (but returns on international shares were zero the next year).

The point is that while it might be tempting to switch asset classes in response to attention-grabbing news, making that switch at just the right time is very challenging, and the evidence suggests that retail investors do so to their detriment.

What framework can investors use to determine portfolio allocation?

This research does not imply that investors should be disengaged with their superannuation portfolio. Rather, it suggests that investment decisions should not be made on the basis of attention-grabbing signals and rather on the basis of a long-term strategic plan that accounts for risk tolerance and aggregate portfolio risk. Specifically, investors can ask the following questions.

- Am I exhibiting inertia in decision-making by sticking with the default option without considering whether I could actually take on more risk, or whether I have a particular need to preserve capital and so should take on less risk?
- Have I embedded a familiarity bias into the portfolio, overweighting assets that I have more exposure to (property and Australian-listed shares) which does not necessarily mean I have an information advantage in trading amongst those assets?
- Am I maximising after-tax returns? Australian stocks produce twice as much pre-tax income as international stocks, and provide substantial tax income tax benefits from imputation credits. International stocks are likely to exhibit more capital gains because half the distributions to shareholders are in the form of share repurchases.
- Have I actually considered the ability for my superannuation portfolio to recover from a shock, and can I respond to the shock by increasing my future savings rate? For a high income investor with a long working career in front of them, the ability to recover through increased savings is high.

Conclusion

Superannuation investors are likely to have better outcomes if they are engaged in the portfolio management process, considering their ability to increase their savings rate and their tolerance for risk. The selection of the asset class mix will flow from that engagement. But investors who base their switching decisions on the basis of recent attention-grabbing events are unlikely to time the market effectively. On average, investors who switch have in the past earned lower returns than non-switchers.

References

Barber, B.M., and T. Odean, 2008. All that glitters: The effect of attention and news on the buying behavior of individual and institutional investors, Review of Financial Studies, 21, 785–818.

Evans, J., and K. Tan, 2006. Drivers of investment choice: Some evidence from Australian superannuation participants, JASSA, Issue 4 Summer, 18-21.

Gan, S., R. Heaney and P. Gerrans, 2015. Individual investor portfolio performance in retirement savings accounts, Australian Journal of Management, 40, 652–671.

Appendix: Research summaries

Individual investor portfolio performance in retirement savings accounts by Gan, Heaney and Gerrans (2015)

The researchers examined the superannuation returns to 15,000 individual investors of a large Australian financial institution over ten years ending January 2012. The researchers found that risk-adjusted annual returns are relatively higher for wholesale investors versus retail investors (about 0.6 per cent to 0.9 per cent per year), for investors under the age of 60 (about 0.2 per cent to 0.3 per cent per year) and for investors who do not switch their asset allocation mix (about 0.4 per cent to 1.0 per cent per year).

All that glitters: The effect of attention and news on the buying behavior of individual and institutional investors by Barber and Odean (2008)

The researchers examined the trades of 66,000 investors at a large discount brokerage firm (1991 to 1996), 15,000 investors at a small discount brokerage firm which promotes its expertise in execution (1996 to 1999), and 666,000 investors at a large retail brokerage firm 1997 to 1999. The researchers measured the daily buy-sell imbalance of retail investors and its

relationship with abnormal volume, whether there was a large price move and whether the firm appeared in the Dow Jones News Service for that day. The researchers found that the stocks traded by retail investors are more likely to have a buy-sell imbalance the greater the abnormal volume, when there were large price moves in either direction and when stocks appeared in the news. For a set of 14 diversified institutional money managers, there was no association between attention-grabbing proxies of volume, price movement and news and the buy-sell imbalance. The implication is that retail investors trade stocks that capture their attention, and there is a buy-sell imbalance because they can buy attention-grabbing stocks not in their portfolio, but only sell stocks already within their portfolio.

Drivers of investment choice: Some evidence from Australian superannuation participants by Evans and Tan (2006)

The researchers examined the asset allocation switches of members of a large corporate superannuation fund from 1997 to 2005. The researchers provide evidence that members were less likely to adopt the default asset allocation if they were older or had a larger account balance.

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[1] This asset allocation is based upon the average asset allocation in the balanced portfolio of four large superannuation funds: Australian Retirement Trust, Australian Super, Aware Super and UniSuper on 29 May 2023.
[2] To compute after-tax returns, I assumed a 15 per cent income tax rate and an 8 per cent capital gains tax rate. My assumed capital gains tax rate of 8 per cent is less than the long-term capital gains tax rate of 10 per cent for a superannuation investor because capital gains tax is deferred until assets are sold.
[3] Year to date returns are at 26 May 2023.
[4] Gan, Heaney and Gerrans (2015).
[5] Barber and Odean (2008).
[6] Using fiscal year after-tax real returns, the highest time-series correlation is 0.29 for international shares. Other time-series correlations are 0.12 for Australian government bonds, 0.05 for property, 0.02 for Australian shares, -0.02 for U.S. investment grade corporate bonds and -0.08 for U.S. high yield corporate bonds.

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