

INVESTING in Retirement



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“ The challenge is that the goals of investors are in conflict.”

Magellan was pleased recently to launch Magellan **FuturePay**[™] (**FuturePay**), an investment fund that we believe may be valuable to many investors, particularly those in retirement who are seeking a regular and predictable income.

This paper discusses many of the difficulties investors face when considering investments in retirement and what drives this problem. Identifying these key issues helps explain the approach taken by **FuturePay** and why we believe it represents a valuable investment choice.

WHAT DO RETIREES WANT FROM THEIR SAVINGS?

Throughout their working lives, Australians seek to save diligently and invest prudently. As they approach retirement, their investment focus shifts to a key question: How do I maintain ready access to my savings and invest to receive a regular and predictable income that keeps pace with inflation, without eroding my capital?

Let's start with an analysis of these investment objectives.

When accumulating assets, the investment goal is relatively straightforward – investors typically seek to maximise their account balance at or around the time they retire, while managing the risks of such investments along that path.

In retirement, it's different because investors are seeking:

- A regular decent income that keeps up with inflation.
- Enough capital growth to ensure their money lasts and they can leave an inheritance.
- Ready access to their savings.

Let's consider each in turn.

While working, we typically receive a pay cheque each month that meets everyday costs and, over time, at least keeps up with inflation. When we retire, everyday expenses continue but unfortunately the pay cheque does not. So, it is unsurprising that retirees are focused on using their savings to re-establish a sense of a regular pay cheque and ideally one that increases at least in line with inflation. Indeed, National Seniors Australia¹ notes: "The thing that mattered most to people about their finances in retirement was having regular, constant income that meets essential spending needs."

Next, we all intuitively understand the typical horizon over which this retirement income is needed is increasingly longer. While the average retirement age² in Australia is 54 and life expectancy³ at that age is another 29 years for males and 32 years for females, the actual length of retirement is, of course, uncertain. A woman retiring at 65 now, for example, has a 44% probability of living to 90 and nearly a 20% chance of living to 95. Understandably, National

1 'Seniors more savvy about retirement income': A report by National Seniors Australia and Challenger, October 2017.

2 Australian Bureau of Statistics, Retirement and Retirement Intentions, Australia.

3 Australian Bureau of Statistics, Life Tables, Table 1.9.

Seniors Australia⁴ notes the second-most important issue retirees face is to ensure their money lasts over their lifetime.

In addition, National Seniors Australia highlights that many retirees have a strong desire to leave an inheritance, and so, when combined with the uncertainty of how long their savings may be needed for, retirees have an aversion to eroding their capital over time.

wishes over their uncertain lifetime along with access to capital. Indeed, the Australian Treasury acknowledges these goals through the principles outlined in the 'Retirement Income Covenant'⁶. Given these goals are well-known and rational, why are they so difficult to achieve?

WHY IS IT DIFFICULT TO ACHIEVE THESE RETIREMENT GOALS?

The simple answer is that the three basic retirement goals conflict with each other.

Trade-offs driven by conflicts are not uncommon in investing. Investors face them all the time while accumulating as they navigate the balance between risk and return. The problem when considering the three basic retirement goals, however, is that these conflicts drive trade-offs that are more acute.

Obtaining a predictable income, for example, often means accepting a lower income, with limited or no growth. The Australian Treasury currently offers a 30-year bond maturing in June 2051 with a yield to maturity of around 2.5%. The certainty of government-backed income meets the regular predictable income goal, and it is also liquid, so it satisfies the access to capital goal. However, at maturity, this investment will only return the face value of the investment in nominal, but not real, terms. With even moderate inflation, the final income payment may be worth less than fifty cents in the dollar in real terms. In this case, the certainty of income conflicts heavily with the desire for growth in income and the aversion to eroding capital over time.

Alternatively, investing for growth often means accepting less predictable income and increased risk. Generally, one expects investments in equities to perform well in the long run⁷. Indeed, an investment of \$100 in the S&P/ASX 200 Index in 1992 would now be worth \$387 in 2021 in nominal terms and \$197 in real terms⁸. This growth is in addition to the dividends received from the investment. Throughout this journey, however, the worst annual performance was minus 42.7% and some years the dividends were as little as 2.7% of the starting-year value. Obtaining the benefits of growth leads to a conflict with establishing



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Last, ready access to savings. While the bulk of expenses are regular, recurring and can be met through a regular income, larger or unexpected expenses are inevitable. Investors are aware of this and so value the flexibility needed to manage this risk.

For example, among the significant extraordinary expenses a retiree needs to consider are healthcare or care in a nursing home. As retirees know, entering an aged-care facility requires paying a refundable accommodation deposit. The average deposit across Australia is about \$440,000 and can be as much as \$1 million in inner-city areas⁵. While there are alternatives to paying this deposit, such as the daily accommodation payment, many retirement investors value the certainty and peace of mind of being able to access their capital to fund this large extraordinary expense when needed. Understandably, for those in retirement, ready access to savings reduces anxiety.

In summary, retirees seek a regular, inflation-adjusted income along with capital growth to meet their income and bequest

4 'Seniors more savvy about retirement income': A report by National Seniors Australia and Challenger, October 2017.

5 Aged Care Decisions – What is a RAD: agedcaredecisions.com.au/what-is-a-rad/.

6 Retirement Income Covenant Position Paper, Stage one of the Retirement Income Framework, Australian Federal Treasury, May 2018.

7 Stocks for the Long Run, Jeremy Siegel, McGraw-Hill, 1994. Equity Premia Around the World, Dimson, Marsh, Staunton, October 2011.

8 Market Index - Commodities Workbook. marketindex.com.au/data-downloads.

a regular and predictable income, and concerns more generally about overall risk.

Insurance-based solutions such as annuities can provide predictable income but often at low rates of return and at the cost of limited or no access to capital. Traditional annuity products provide a guaranteed income for life, with some products offering inflation protection and limited guaranteed withdrawal benefits. However, voluntary annuitisation is also low at around only 6% of pension phase accounts invested in annuities⁹, with most of that invested in fixed-term products rather than lifetime guarantees. The combination of low rates of return and limited capital access conflicts sharply with the predictable income afforded by an annuity.

GROWTH ASSETS IN RETIREMENT

There is an increasing awareness that the use of growth assets in retirement is a necessary ingredient to help resolve these conflicts. Indeed, with long life expectancies and record low interest rates, investors are making growth assets the foundation of their investment strategy. Australian Taxation Office¹⁰ data shows the average self-managed super fund has increased its average allocation to growth assets from about 40% in 2015 to about 60% in 2019.

This intuition is strongly backed by empirical evidence. In *Growth Asset Exposure in Retirement: The Upside and The Risk*,¹¹ Geoff Warren shows that, based on an investment of \$100,000 and a drawdown of \$6,000 per year, an investment 100% allocated to equities has a relatively stable median balance over the retirement horizon of 30 years, while a fund investing in 60% equities and 40% bonds has a median balance closer to zero after 30 years, suggesting a higher allocation to equities. This relatively high investment balance leads to a stronger likelihood of meeting income needs in later life. As Warren notes: "The underlying intuition behind favouring growth assets like equities in retirement is that they have tended to offer higher returns and hence potential to accumulate more wealth over the long run. This in turn may increase the chances of drawing

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a larger income stream for longer and possibly a bigger bequest upon death.”

In the Australian context, the case for equity investments in retirement is buttressed by the government pension. In *Member’s Default Utility Function for Default Fund Design, Optimal Dynamic Strategies*,¹² the authors calculate an optimal allocation to equities of about 80% at retirement, which decreases slowly to about 50% as the investor moves closer to 100 years of age. The thinking is that the support of the government pension enables investors to take slightly more risk, knowing that the pension will support some income in the case the equities perform poorly. While retirement investors recognise the advantages of allocating to growth assets, the attraction of franking and home-country bias have led many to prioritise Australian equities. ATO data¹³ shows that only 1% of an average self-managed super portfolio is allocated to global shares. The benefits of diversification, however, are as relevant in retirement as in accumulation. The Rice Warner advisory group¹⁴ estimates that, for a typical self-managed portfolio, an allocation to global equities enables an additional 6% allocation to growth assets with the same level of expected risk.

9 Retirement Income Review 2020.

10 SMSF Asset Allocation Tables. ato.gov.au/About-ATO/Research-and-statistics/In-detail/Super-statistics/SMSF/Self-managed-super-fund-quarterly-statistical-report---March-2020/.

11 Growth Asset Exposure in Retirement: The Upside and The Risk, Geoff Warren, Brandes Institute, 2019.

12 Member’s Default Utility Function for Default Fund Design, Technical Paper No. 3: Optimal Dynamic Strategies, David Bell, Estelle Liu, Dr. Adam Shao, March 2017.

13 SMSF Asset Allocation Tables. Op cit.26 Member’s Default Utility Function for Default Fund Design, Technical Paper No. 3: Optimal Dynamic Strategies, David Bell, Estelle Liu, Dr. Adam Shao, March 2017.

14 ‘Review of Retirement Solution’, Richard Dunn, Michael Berg and Michael Rice, Rice Warner, May 2021. This Report outlines the modelling assumptions and assessment framework used in their analysis.

Such an increased allocation leads to increased expected total returns.

Finally, an underappreciated aspect of equities is the relationship between real returns in different inflation regimes. In *How inflation impacts different types of investments*¹⁵

Ashley Owen analyses real returns of several asset classes in varied inflation environments since 1900. The author shows that over this long period real returns in US shares (for Australian investors) and Australian shares were the best, with real returns of 6.7% p.a. and 6.6% p.a. respectively. The author also shows that in high inflation years US shares outperformed Australian shares, while Australian shares have tended to outperform in moderate inflation years. These results suggest that investors concerned about inflation should consider US or global equities. There are clear benefits of investing in growth equities in retirement and yet it is difficult to achieve this in a balanced way given the investment goal conflicts. What's driving this?



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WHY IS INVESTING IN GROWTH ASSETS DIFFICULT IN RETIREMENT?

At the heart of this problem is market volatility. In simple terms, when accumulating assets, volatility can help, but when withdrawing an income from those assets, it can hurt.

When accumulating, many investors seek to take advantage of asset volatility through investment strategies such as dollar-cost

averaging – investing fixed amounts regularly over time so shares are just as likely to be purchased when prices are low as when they are high. This strategy can be traced back at least to the 1940s,¹⁶ and its popularity and utility have never waned.

When in retirement, however, taking a regular and fixed income from an investment in growth assets poses a greater risk. The reason is clear – selling assets to fund the required income when prices have fallen means there are fewer shares left invested when prices recover. As stated in *Building a Dynamic Retirement Plan: Time-Segmented Bucketing Revisited*:¹⁷ “Liquidating risky positions realises losses and creates poor retirement outcomes.” This increased risk is driven by what is known as ‘sequencing risk’ or ‘sequence-of-returns risk’, and this risk can be significant. In *The ABC of Sequencing Risk*,¹⁸ the authors consider a 65-year-old investor who invested \$600,000 in a balanced portfolio in 1979, and who withdrew \$40,391 per year (indexed to inflation). They show that if, “the investor experienced the same returns as between 1979 and 2011 in the same order, he would have had over \$700,000 remaining 32 years into retirement. Had he experienced the same returns, but in reverse order, and done nothing to respond, he would have run out of capital 22 years into retirement and had at least 10 years in retirement with no capital.”

Managing volatility to minimise sequencing risk in retirement is clearly a key part of the retirement income puzzle.

HOW TO MANAGE THE VOLATILITY OF GROWTH ASSETS IN RETIREMENT

US retirement expert Wade Pfau identifies four key approaches to the management of volatility of growth assets in retirement:

1. Reduce the spending rate.
2. Adjust spending to portfolio performance.
3. Reduce portfolio volatility.
4. Draw from a buffer asset outside the portfolio to support spending when the portfolio underperforms.

15 ‘How inflation impacts different types of investments’, Ashley Owen, Firstlinks, June 2021, firstlinks.com.au/inflation-impacts-different-types-investments.

16 ‘A behavioral framework for dollar-cost averaging’, Meir Statman, *Journal of Portfolio Management*, January 1985.

17 ‘Building a Dynamic Retirement Plan: Time-Segmented Bucketing Revisited’, Lisa Shalett, Daniel Hunt, Zi Ye, Morgan Stanley, 2013.

18 ‘The ABC of Sequencing Risk’, Challenger Retirement Income Research, 2012.

The first two approaches address the problem through altering retiree consumption in response to volatility, which conflicts with the key investment goal of obtaining a predictable income from which to fund consumption. The other two approaches address the problem through actions on the investment side of the equation, which holds more promise of achieving an acceptable outcome among the conflicting investment goals.

Reducing portfolio volatility is a clear and necessary strategy, and the temptation is to remove volatility completely. However, this puts us back where we started with relatively short-dated fixed-income instruments dominating the portfolio. As Pfau states:¹⁹ “A portfolio free of volatility does not create sequence-of-returns risk. However, simply shifting into bonds does not work successfully if the spending goal exceeds what the bond yield curve can support.”

Therefore, the portfolio strategy must seek to have at least market-like returns with lower risk, and indeed a specific focus on reduced ‘downside risk’, as this is where sequencing risk impacts most. While such a strategy might seem hard to achieve, there is substantial evidence that through skilled investing in low-risk, high-quality defensive equities, market-like returns can be obtained with lower risk. For example, in *Understanding Defensive Equity*,²⁰ the authors analyse the returns and risk of US equities between 1926 and 2011 that highlight a phenomenon known as the low-risk anomaly, which effectively “enables defensive equity portfolios to deliver long-run returns similar to traditional benchmarks, at a significantly lower volatility”.

As important as the right portfolio characteristics are, it turns out that the fourth approach of drawing from a buffer asset outside the portfolio to support spending when the portfolio is underperforming is just as important – but its usefulness depends on how it is achieved.

For example, a debt facility could be established to be drawn upon in periods of underperformance or an option could be purchased to call upon funds when certain underperformance conditions are met. The problem is these types of approaches are expensive and ill-fitting when viewed relative to the value received in managing volatility in the context of retirement income.

Debt facilities usually require security and need to be serviced, and the principal needs to be repaid within fixed time frames, leaving the risk of being forced to extend or roll over such borrowings. Using debt effectively magnifies the risks being assumed, with the distinct possibility that the repayment of the debt could be required at the worst possible time; namely, during another market downturn.

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Using options does alleviate many restrictive elements associated with direct borrowing; however, it comes at a cost that leads to sub-optimal outcomes for investors solving for retirement income. Options also have fixed maturities and need to be repurchased over time, adding an extra layer of price risk.

For example, it is tempting to purchase a put option to hedge against market declines, but the standalone cost is usually prohibitive in the overall context of achieving an adequate retirement income. A possible way to mitigate that cost is to sell a call option and to use the premium received from that sale to offset the cost of the put option purchased. Indeed, the point at which these are balanced is commonly referred to as ‘zero cost collar,’ but the reality, of course, is that it is not costless.

In *Risk and Return of Equity Index Collar Strategies*,²¹ the authors look at the impact of investing in a collar strategy relative to a direct investment in the underlying equities. They analyse a collar strategy relative to the S&P 500 between the years 1986 and 2014. They show that indeed the risk of the collar

19 ‘The Four Approaches to Managing Retirement Income Risk’, Wade Pfau, Professor of Retirement Income, The American College of Financial Services.

20 ‘Understanding Defensive Equity’, Andrea Frazzini, Jacques Friedman, and Hoon Kim, AQR Capital Management, 2012.

21 ‘Risk and Return of Equity Index Collar Strategies’, Roni Israelov and Matthew Klein, The Journal of Alternative Investments, 2016, Volume 19.

strategy is 10.7% compared to the index risk of 15.7%, a reduction of about 33%. However, the return of the collar strategy was only 3.2% compared with the index return of 7.3%. So a portfolio that invested about 33% in cash and the rest in equities would have a risk at the same level as the collar strategy, but it would have delivered a return of about 4.5% per year, a 1.3% per year outperformance over the collar strategy.



“While the benefits of using a reserving approach in retirement are recognised, it is noticeable that there has been less focus on understanding what is the most effective reserving process, and indeed how to make the overall process efficient.”

What this shows is the true cost of a costless collar strategy are the gains forgone from a significantly lower holding of equities. “The truth is that a typical collar construction should be expected to have lower returns than its underlying securities because (1) it has lower equity exposure and thus earns less equity-risk premium, and (2) it purchases put options that are more richly priced than the call options it sells.” The authors said: “It is folly to believe that collaring one’s equity exposure necessarily leaves one’s expected returns intact.”

Investors and their advisers have become well aware of the limitations of these approaches and instead, over time, developed another technique that does add value.

This strategy is often called ‘bucketing’ or ‘time-segmentation’. Here, the assets are separated into two buckets, one being invested in cash and the other in growth assets.

(More nuanced strategies may sometimes use three or more buckets.)

Importantly, the cash bucket tends to be sized in time rather than as a fixed percentage of the overall portfolio. Often advisers will describe the cash bucket as comprising two or three years. What this means is the cash account can support the desired income for that length of time without having to touch the growth portfolio.

In practice, what advisers and investors are doing with this approach is executing a reserving strategy and there is research to suggest this is of use. In *Building a Dynamic Retirement Plan: Time-Segmented Bucketing Revisited*,²² the authors state that the approach:

1. Reduces the probability and magnitude of lifetime shortfall.
2. Improves transparency to the client and reduces behavioural tendencies that lead to selling at inopportune times.
3. Supports higher sustainable withdrawal rates than traditional approaches.
4. Reduces variability of planning outcomes.
5. Best offsets the risk associated with the sequencing of returns.

An additional feature of reserving was analysed in *The Four Approaches to Managing Retirement Income Risk*.²³ In that analysis, the author focused on “having other assets available outside the financial portfolio to draw from after a market downturn”. The emphasis in this analysis is that the income-supporting assets are ‘outside the system’. In this context, the author states that using such ‘buffer’ assets may seem expensive in isolation, but “can work to protect the investment portfolio from incurring excessive distributions” in times of poor market performance.

While the benefits of using a reserving approach in retirement are recognised, it is noticeable that there has been less focus on understanding what is the most effective reserving process, and indeed how to make the overall process efficient. This is important because, while reserving does add value overall to generating retirement income, the process itself carries the opportunity cost of holding a portion of low-returning cash assets and requires ongoing management in an attempt to optimise the outcome.

22 ‘Building a Dynamic Retirement Plan: Time-Segmented Bucketing Revisited’, Lisa Shalett, Daniel Hunt, Zi Ye, Morgan Stanley, 2013.

23 ‘The Four Approaches to Managing Retirement Income Risk’, Wade Pfau, Professor of Retirement Income, The American College of Financial Services.

FUTUREPAY™

This is where **FuturePay** comes in.

Our goal in developing **FuturePay** was to bring these insights together into a single product to satisfy each of the desired investment goals.

FuturePay aims to provide a predictable income that increases with inflation (goal 1). It also aims to produce capital growth by investing in high-quality, low-volatility global equities utilising a portfolio-construction process that focuses on downside protection (goal 2).

FuturePay is liquid – it can be accessed via exchange and directly via daily applications and redemptions (goal 3).

And most importantly, **FuturePay** seeks to achieve this with a built-in reserving system that is both effective and efficient.

The reserving system used within **FuturePay** is efficient because we have harnessed the benefits of mutualisation in managing the pool of reserves, something that cannot be achieved if you are reserving on your own. The benefits of pooling (or mutualising) risks have been known and used for centuries, and with good reason, because it works. By effectively pooling the reserves among all the members of **FuturePay**, the overall system is required to reserve less, compared with if you were doing it on your own. Less in reserves means more invested, which leads to a better overall outcome.

Second, **FuturePay** has an effective reserving strategy. One of the hurdles in executing a reserving or bucketing strategy is determining when and how much money to put aside, and conversely, when and how much of those reserves to use. This can be further complicated by an investor's or adviser's biases. A particular liking of an investment or an entrenched view on a certain issue can easily cloud a disciplined reserving approach.

FuturePay's reserving disciplines are built into the product's workings and are the result of an exhaustive analysis designed to develop an optimal reserving strategy.²⁴ We believe this is an important aspect because it adds materially to investor outcomes, something confirmed following independent analysis and review by Rice Warner.²⁵

“FuturePay™ seeks to achieve this with a built-in reserving system that is both effective and efficient.”



CONCLUSION

Investors in retirement face a difficult problem in navigating the acute conflicts that result from achieving their desired investment goals. Understanding the factors that drive this problem is an essential step to be able to consider approaches that may help manage the problem.

As we have seen, there are techniques and choices that do add value to investors in retirement. However, they are often not straightforward to implement. By absorbing the lessons from these techniques and focusing on enhancing their effectiveness, we believe approaches such as those embodied in **FuturePay** can add meaningful benefits to investors as they enjoy their retirement.

²⁴ The details of this research are beyond the scope of this paper.

²⁵ 'Review of Retirement Solution', Richard Dunn, Michael Berg and Michael Rice, Rice Warner, May 2021.

IMPORTANT INFORMATION

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This material refers to the Rice Warner report, Review of Retirement Solutions, 5 May 2021. This Report is an independent assessment focused on quantifying the outcomes for retirement investors using Magellan FuturePay as a component of their retirement strategies. The Report outlines the modelling assumptions and assessment framework used in their analysis.