

Future-proof portfolios

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The notion of 'future proof' revolves around creating solutions that by design give consideration to how investor's objectives can be met through the cycle. This is particularly relevant for investors in the near-retirement or post-retirement phase of the investment lifecycle where their objectives require a balance between longer-term considerations, such as inflation and longevity risks, and near-term considerations such as higher income and reduced volatility.

How should investors think about 'future proofing' their retirement investment portfolios, and what features make an investment strategy 'future proof'?

This paper discusses the challenges around the design of retirement investment strategies that meet investor objectives through-the-cycle.

INTRODUCTION

Change is the only constant in life. From an investor's perspective, economies, markets, asset classes, investment styles and companies will experience material cycles, trends and changes in risk over time. One way investors could possibly address the challenge of a future with a vast number of potential outcomes is to change their investments continuously and actively to account for new information over time. However, given informational asymmetry, implementation challenges and difficulty in distinguishing new information from mere noise, this approach is not practical for most investors. This is particularly challenging for clients near or in retirement where complexity compounds due to the need to address multiple objectives.

The concept of 'future-proofing' is focused on effective investment strategies as long-term through the cycle solutions. This requirement implies that investment strategies are suitable for a range of market conditions over the medium to long term. The 'proof' reference requires investment strategies to be able to stand up to identifiable risks or, at least by design, be resilient to different market environments rather than remain structurally challenged in some market environments.

Future-proofing investment strategies is not about guaranteeing a future outcome. No single investment can provide that. Because future outcomes cannot be guaranteed, investors are faced with uncertainty. The challenge with designing retirement investment strategies is balancing multiple objectives while managing the trade-off to maximise the likelihood of the objectives being simultaneously met.

This paper considers the application of the future-proofing concept to retirement investment strategies.

- Part one of this paper advocates a 'whole-of-portfolio' approach to future-proofing. This approach integrates asset allocation with intra-asset class strategies to narrow the range of outcomes and increase the certainty of achieving the base-case outcomes.

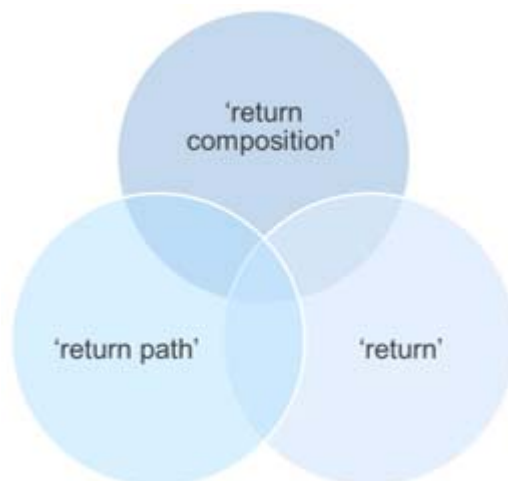
- Part two presents a framework that investment practitioners can apply to assess potential intra-asset investment strategies for their long-term effectiveness and suitability for inclusion in client's portfolios.
- The paper concludes in part three by providing a practical application of the conceptual framework to retirement investment strategies.

The challenges grow as clients near retirement

Future proofing by definition requires a long term focus. For some investors, this is a relatively straightforward exercise. Investors in the early stages of the accumulation phase are primarily focused on simply maximising returns over a long time period. It is hard to determine what more can be done today other than to allocate to assets with the greatest expected returns, subject to any imposed risk constraints, and adjust their portfolio as expectations change in the future. Future-proofing for early stage accumulators has a single objective and most risk considerations are overcome with a long term mindset (time diversification). This has been the focus of the Australian superannuation industry over the past 20 to 30 years.

The challenges associated with future-proofing investment strategies most evidently come to light as clients reach the inflection point where they transition from the accumulation phase into the near-retirement phase and drawdown phases. A future-proofed retirement investment strategy needs to give greater consideration to desired outcomes that incorporate a broader consideration of issues, rather than simply maximising the return from an asset class. Multiple objectives such as risk, nature of return or the return composition requirements, become equally important and are required to be calibrated to both near term and long term views.

Figure 1: Balancing multiple investment objectives



Source: Colonial First State Global Asset Management

- Return – Maximise after-tax net total returns (includes alpha, franking credits, taxes and fees)
- Return path – Asymmetric risk preferences against capital drawdowns
- Return composition– Manage the level of distributable income generated

The challenge during the near-retirement and drawdown phases arises from the fact that these objectives and their timeframes may well be conflicting. The problem faced by investors is not one of mere maximisation of a single objective, but rather managing the balance and trade-offs between multiple objectives so they can simultaneously be met.

What distinguishes objectives-based investing approaches are the definitive objectives, each with a specific timeframe, that are pre-set today. This provides the parameters to consider the implementation of different approaches today that can increase the likelihood that multiple objectives will be met and in the timeframe required. The stressed market conditions during the Global Financial Crisis served to highlight shortcomings of approaches that are dependent on being reactive to the prevailing market conditions. For example, many investors only sought to reduce equity market risk after the market had fallen significantly. This created new challenges for timing the re-allocation back into risky assets at time in the future. These approaches cannot be regarded as future-proof.

Future-proofing seeks up front solutions today that increase the certainty that client's objectives will be met in the future. The focus of future-proofing near-retirement and post-retirement investment strategies is managing these types of implementation risks to increase the certainty of achieving the multiple outcomes for clients. Reducing the potential deviation between planned/target outcomes and actual outcomes should be a significant consideration for investment professionals seeking to implement a robust investment strategy for these types of clients.

PART 1: A 'WHOLE-OF-PORTFOLIO' APPROACH TO FUTURE-PROOFING RETIREMENT INVESTMENT PORTFOLIOS

Future-proofing in itself is not a new concept. The concept has been widely applied to the asset allocation level of the portfolio construction process, reflecting the broad view¹ that asset allocation decisions are expected to have the greatest bearing on future outcomes.

From an investments perspective, asset allocation has always been a key consideration when designing a strategy to match the risk profile or objectives of an investor. However, this has traditionally been a relatively straight-forward mindset of assigning each client to an appropriate risk class such as Aggressive, Growth, Balanced, Defensive or Conservative and changing this allocation as the clients' circumstances change over time. Whilst this approach has been suitable for many circumstances, it does have limitations when applied to addressing the multiple objectives of retirement phase investors. Evidence of this has been the challenge of dealing with low return expectations (and resultant low income generation) from traditional income asset classes in recent years.

Efforts to move away from this traditional asset allocation framework has led to the introduction of various approaches that explicitly seek to address the multiple requirements for clients near or in retirement. Some examples of asset allocation level approaches that are being utilised to future-proof retirement client portfolios include:

Figure 2: Examples of asset allocation level approaches to future-proofing

- Income layering
- Lifecycle investing
- Diversification into alternative assets

Each of these strategies place greater focus on risk and/or income considerations in addition to the focus on returns.

1. Income layering: This approach segments future income requirements based on their different priorities (wants vs needs) and utilises different investment options to match this relative importance. Allocations into annuities or capital guaranteed/cash investments, along with careful planning around age pension entitlements, are common approaches to forming an income layered investment strategy. The desired outcome is an increased level of certainty with regards to income.

2. Lifecycle investing: Seeks to deliver more tailored risk outcomes for clients by changing the investment mix as they age and near retirement. Over time, the allocation to higher risk, growth oriented investments is replaced with lower risk, defensive type investments. This is done in a pre-determined manner to reflect that many investors have a changing risk profile over time, with a lower tolerance for risk as they approach retirement. Lifecycle strategies seek to align investment decisions made today with the timeframe of each client based on their age, with the intention that this greater alignment will increase the likelihood of investment objectives being met.

3. Diversification into alternative assets: The inclusion of alternative assets in client investment portfolios is driven by an expectation that these contribute beneficial volatility and correlation characteristics to improve the risk outcomes in a portfolio. Many of these assets are included due to their low correlation with traditional investment asset classes.

Whilst each of these asset allocation level initiatives can be demonstrated to improve client outcomes, there are limitations including:

- One of the biggest challenges faced by many investors is the funding gap, where the investor is likely to have a shortfall of accumulated savings to meet their expected expenditure requirements in retirement.² Addressing this funding gap problem typically requires a higher, on-going exposure to more growth oriented investments that can generate higher returns. This presents a conflict with asset allocation strategies that are typically seeking to reduce the risk, and therefore the expected return, for retirement portfolios.
- Asset allocation strategies are reliant on expected return, volatility and correlation relationships between different assets and the assumption that these relationships will hold true in the future. If realised relationships between the asset classes are materially different to expectations, then the future outcome for a client may deviate materially from their planned outcome.
- In recent years since the Global Financial Crisis, bond yields have been compressed to historically low levels. This has led many investment practitioners to question the future effectiveness of bond related assets in their clients' portfolios as a risk diversification tool. These investors are concerned that central bank intervention, possible 'bubbles' in bond markets and compressed credit spreads may result in potential losses as the yield compression unwinds at some stage in the future.

These limitations of asset allocation related approaches means that additional measures are necessary before a clients' retirement investment strategy can be deemed to be *future-proof*.

These additional measures can be implemented at the intra-asset class level to supplement the tailoring already implemented at the asset allocation level. The adoption of intra-asset tailored strategies and risk management results in an integrated, 'whole-of-portfolio' approach to investment decision making.

'Whole-of-Portfolio' approach to future-proofing retirement investment strategies = Asset allocation tailoring & risk management + Intra-asset tailoring & risk management

Figure 3: Examples of intra-asset approaches to future-proofing

- Variable beta equity strategies
- Unconstrained fixed income strategies
- Low volatility focused equity strategies
- Equity income strategies (high yield or buy-write)
- Tail risk hedging strategies

By including intra-asset strategies and adopting a 'whole-of-portfolio' approach to risk management and portfolio construction, investment strategies can be included for investors in the near-retirement or drawdown phase of the investment lifecycle. These investors require a balance between longer-term considerations, such as inflation and longevity risks, and near-term considerations such as higher income and reduced volatility.

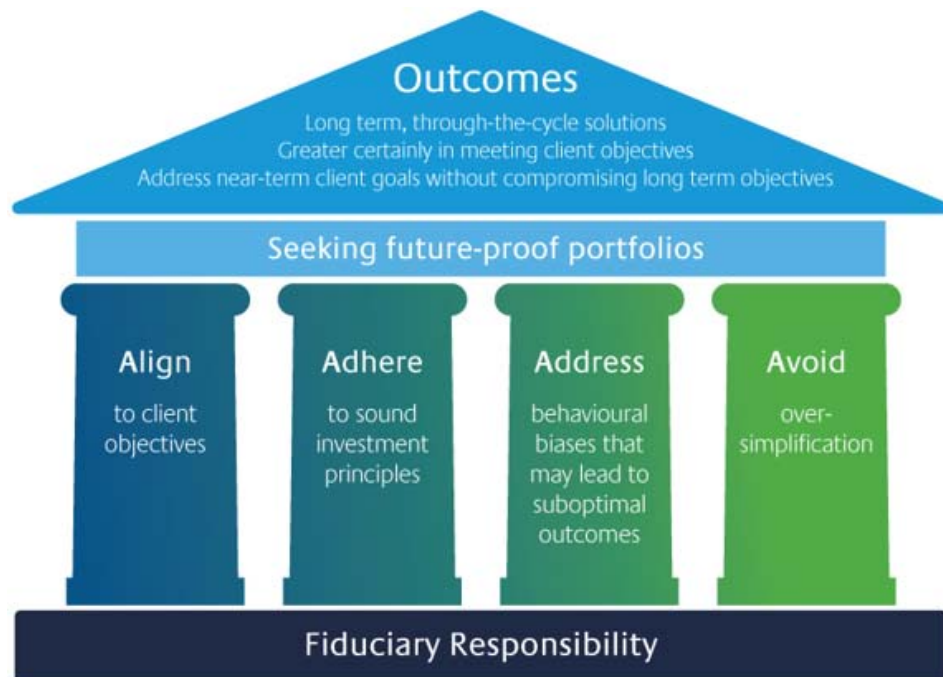
The inclusion of intra-asset risk management is most meaningful when applied to the equities component of a portfolio given both the higher expected return and higher risk profile of this asset class. It is a well-recognised portfolio construction challenge that the equities allocation contributes the largest proportion of risk to a client's investment portfolio even when the capital allocated is modest. Therefore, equity strategies that can reduce the range of future outcomes to better meet the multiple objectives can provide additional benefits towards constructing future proof portfolios.

The diversity of potential products poses another challenge for investors. Rather than critique a number of different intra-asset strategies individually, this paper will present a framework that can be referenced when examining potential investment opportunities to determine if the strategy will contribute to the objective of building future-proofed portfolios for clients over the long term.

PART 2: WHAT FEATURES MAKE AN INVESTMENT STRATEGY SUITABLY 'FUTURE-PROOF'?

A framework by which different intra-asset investment strategies can be assessed for their long term sustainability and effectiveness in contributing to a client's retirement investment portfolio being suitably 'future proof' is represented over page.

Figure 4: Future-proof framework



Source: Colonial First State Global Asset Management.

This framework sets out the essential features or characteristics that potential investment strategies should exhibit in order to be considered in the construction of a future-proof client investment portfolio. This 'future proof' framework seeks to make the distinction between investment strategies that can be considered as contributing to an effective client solution over the long term and through a range of possible market cycles, and investment strategies whose effectiveness may be more limited to certain market conditions. An example of the latter are strategies that offer exposure to particular investment styles to deliver attractive outcomes. Whilst these kinds of strategies can deliver attractive alpha in some market conditions, they arguably lack the attributes required for inclusion when seeking to construct a future-proof portfolio.

Foundation of the future-proof framework

The foundation is a fiduciary responsibility. In the context of formulating a retirement investment strategy, the requirement to 'act in the client's best interest' should include consideration of how multiple outcomes can be achieved in a broad range of possible market experiences. This focus on increasing the resilience of a portfolio to different investment/market cycles is the key outcome when seeking to construct more future-proofed portfolios. This requirement to continually seek better ways of achieving client outcomes is why a 'whole-of-portfolio' mindset should be adopted that considers the inclusion of intra-asset investment strategies into client portfolios.

Four pillars of the future-proof framework

The four pillars uphold the framework to undertake a comprehensive review of potential investment opportunities before they are included in a client's investment strategy. Each pillar provides a different perspective to determine if a possible investment opportunity can effectively contribute to a future-proof objectives-based portfolio. The pillars incorporate both investment and non-investment issues, recognising that there are also emotional aspects that need to be considered when designing long-term investment strategies for clients.

Figure 5: Pillar 1 - Alignment to client objectives

Role of this pillar	Why it is important
<ul style="list-style-type: none"> To ensure the investment strategy addresses and balances multiple retirement objectives. This includes: <ol style="list-style-type: none"> Ensuring sufficient accumulated savings Generating a sustainable income stream Avoiding permanent losses of capital Maintaining purchasing power (inflation) Managing longevity risk Estate planning 	<ul style="list-style-type: none"> Recognises that client objectives are inter-related, not independent; trade-offs are inevitable It considers the composition of returns, the path of return, as well as the expected magnitude of returns. Addresses the challenge that different objectives have different time frames (near-term vs long-term) and the conflict this creates.

Figure 6: Pillar 2 - Adhere to sound investment principles

Role of this pillar	Why it is important
<ul style="list-style-type: none"> Recognises that future outcomes will be impacted by economic, business and investment cycles and the strategy should not be dependent on a certain environment. Ensures the investment strategy has sufficient flexibility to adapt to changes in asset valuations over time Recognises the sources of returns/risk premium exposures in the investment strategy Ensures consistent application of investment concepts across asset classes 	<ul style="list-style-type: none"> Strategy meets client objectives through-the-cycle Ensures suitable diversification through understanding the sources of return (risk premiums, betas, alpha sources) and risk contributors Assesses how the strategy will contribute to overall portfolio risk management (correlation, volatility), whilst acknowledging the limitation that this is a long-term 'end point' analysis. Supplements traditional risk analysis with intra-horizon risk considerations such as maximum expected drawdown Ensures that strategies comply with well-established investment principles

Figure 7: Pillar 3 - Address common behavioural biases

Role of this pillar	Why it is important
<ul style="list-style-type: none"> • Acknowledges the existence of an emotional side to investing • Allows for a holistic consideration of risk beyond just investment risk concepts • Focuses on the 'journey risk' (intra-horizon risk considerations) rather than just the end points. • Addresses common behavioural issues that impact (positively or negatively) the implementation of future-proof portfolios such as: <ol style="list-style-type: none"> 1. Loss aversion 2. Recency bias (anchoring) 3. Fear of missing out 4. Fear and Greed 	<ul style="list-style-type: none"> • Strategy meets client objectives through-the-cycle • Ensures suitable diversification through understanding the sources of return (risk premiums, betas, alpha sources) and risk contributors • Assesses how the strategy will contribute to overall portfolio risk management (correlation, volatility), whilst acknowledging the limitation that this is a long-term 'end point' analysis. • Supplements traditional risk analysis with intra-horizon risk considerations such as maximum expected drawdown • Ensures that strategies comply with well-established investment principles

Figure 8: Pillar 4 - Avoid over-simplifications

Role of this pillar	Why it is important
<ul style="list-style-type: none"> • Recognise that excessive simplification has a potential cost through inferior long term outcomes • Avoids reliance on 'rules of thumb' or 'assumed truths' when developing investment strategies 	<ul style="list-style-type: none"> • Avoids over-simplified strategies that appear attractive over shorter timeframes but may not address all objectives over the long term • Accepts the complexity of the challenge to build future-proof portfolios • Acknowledges attractive strategies may conflict with client perceptions due to an investment knowledge gap

Outcomes of the future-proof framework

Applying the 'future-proof framework' to client retirement investment strategies will result in:

- Long-term strategies that are effective through-the-cycle solutions.
- A mechanism to address near-term client goals (e.g. income) without compromising on long term objectives.
- Greater certainty in meeting client objectives by reducing the potential variation between target/desired outcomes and actual outcomes.

By utilising investment strategies that satisfy these four pillars, the strategy is more likely to be able to respond to different market phases. As a result, investment practitioners are less



reliant on making timely judgement calls at different points in the market cycle to successfully deliver the through-the-cycle outcomes.

This future-proof framework will be applied to a number of common retirement investment strategies to examine their effectiveness in building future-proof portfolios over the long term. Relevant concepts and beliefs will be considered under each pillar to provide practical examples of how this framework can be applied.

PART 3: FRAMEWORK IN ACTION - APPLICATION TO RETIREMENT INVESTMENT

Pillar 1



Ensure the investment strategy addresses and balances multiple retirement objectives.

Recognises client objectives are inter-related, not independent; trade-offs are inevitable

Defining alignment

Client objectives are often in conflict as achieving one investment outcome usually comes at the cost of achieving another. A simple example is where investors seek a high level of returns, while simultaneously requiring a limit on risk; the conflict arising because most actions to improve expected return requires a higher risk budget. Compromise is required to best simultaneously achieve both outcomes. Traditionally the focus has purely been on the risk/return trade-off, which has been managed using an optimisation framework.

The design of retirement investment strategies extends this concept to multiple investment objectives. This includes the composition of returns, additional risk requirements and longevity risk considerations. Managing the trade-offs between these multiple objectives becomes more complex. A future-proof investment strategy needs to understand the inter-relatedness between client objectives.

Timeframes

Additional complexity arises when the time frames of investor objectives are considered. Retirees have both long and short term objectives, yet require a long term approach to match the horizon of their funding requirements. This has consequences for how objectives are framed and measured, with a long term mindset being an essential component of the future-proofing objective. The long term focus still needs to take into account near term objectives such as income requirements, without compromising other longer term objectives. A 'multi-horizon' approach to portfolio planning is required rather than the traditional 'single-period' assumption for most investment analysis.

Income: yield or dollars?

The required level of income for retirees is defined on a dollar basis and determined by assessing essential spending needs and discretionary expenditures. While the real needs of investors are expressed in dollar terms, the formulation of the investment strategy to generate the target amount of investment income is commonly undertaken on a yield basis. The portfolio yield target is derived as the current year's investment income requirement as a percentage of the client's accumulated wealth. By construction, the yield is a good measure of the current year's dollar investment income, due to its short term nature. However, because the capital base can move, yield becomes a poor measure of longer term dollar income generation.

Due to the immediacy of the income need, there is a risk that achieving this income requirement becomes the priority investment objective. The challenge when designing an investment strategy for outcomes-based investors is ensuring a focus on the long-term growth and capital preservation objectives is retained whilst addressing near-term income objectives.

Volatility is not risk

The most popular and enduring definition of risk remains volatility, so much so that these two terms are used interchangeably. Many investors only think about risk as volatility, or the standard deviation of investment returns. This is simply a measure of how far returns might deviate from the average. An investment with high volatility is thought to be risky because one might end up with a (large) negative return even when the investment was expected to be sound. The concept that volatility risk is ingrained in popular investment thinking since it was first introduced in Markowitz's Modern Portfolio Theory. The approach has the attraction of both simplicity and intuition.

For traditional investment strategies based upon a long-term strategic asset allocation framework, the use of volatility as a measure of risk may be sufficient in providing an indication of the range of possible outcomes and the frequency and magnitude of negative returns between the end points of an indefinite investment time horizon. The indefinite time frame also results in the simplifying assumption that the underlying range of return outcomes follows a bell curve, or a 'normal' distribution.

These assumptions present a problem when considering the design of outcomes-based investment strategies where the concept of 'risk' needs to be more broadly defined to encompass the risk of not achieving the intended objectives. A predefined time frame is intrinsic to these investment goals.

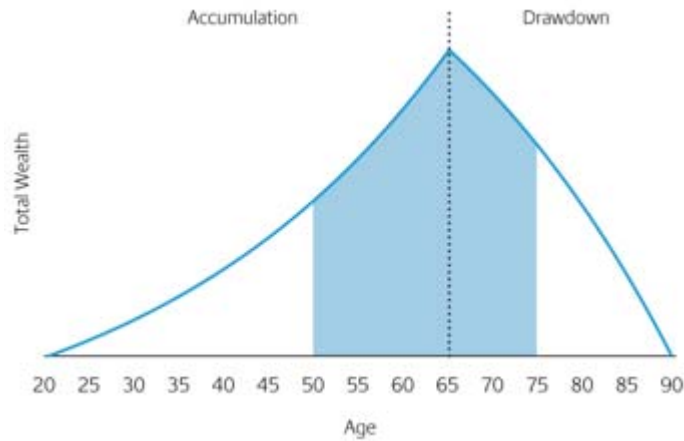
For investors concerned with the long term nature required in future proofing portfolios, volatility is insufficient as a risk measure, when the entire path is relevant. Investors should focus on downside risk measures such as maximum drawdown, value at risk and capital risk charge as through the cycle risk measures that reflect absolute loss expectations and a focus on actively managing downside risks.

Two dimensions of risk

The concept of 'risk' needs to be even more broadly defined to encompass the risk of not achieving the intended objectives. As a result, rather than just assessing the cross-sectional volatility of an investment over a given time horizon, the time series or path of the return also needs to be assessed. This is because the investors' outcome will be a function of both the investment returns achieved and the investors' rate of contributions or drawdowns. As a result, there is a need to consider risk in two dimensions.

Sequencing risk relates to the order in which returns occur and is the observation that returns matter the most when you have the most capital at risk. Investors typically have the greatest aversion to losses in the years around retirement when the portfolio is likely to be the largest.

Figure 9: Critical investment period near retirement and just post retirement



Source: Colonial First State Global Asset Management.

Consider the example in which an investor in their accumulation phase saves \$10,000 each year for 10 years. The two scenarios shown below have the same compounded annualised return and volatility; however, one experiences a large negative loss in the first year while the second experiences the loss in the final year of the investment.

Figure 10: Timing Matters: different outcomes due to different timing of returns



Source: Colonial First State Global Asset Management.

While the annualised returns of the two scenarios are the same, the outcomes are significantly different. Investing for near-retirement or post-retirement requires a consideration of path dependency, meaning the path of the return is relevant. Conventional risk measures such as volatility do not account for path dependency.

In assessing whether potential investment strategies are suitably future proofed, it is essential to have a holistic assessment of the interaction between client's multiple objectives, as well as the time considerations. An outcomes-based framework must consider both the 'journey risk' produced by the frequency and magnitude of potential negative returns and also the 'path risk' as the investment outcomes interconnect with the cash flow requirements of the investor. Alignment requires these objectives to be balanced with existing returns requirements to increase the likelihood of these objectives being simultaneously met.

Pillar 2



Strategy meets client objectives through-the-cycle

Ensures the investment strategy has sufficient flexibility to adapt to changes in asset valuations over time

Ensures that strategies comply with well-established investment principles

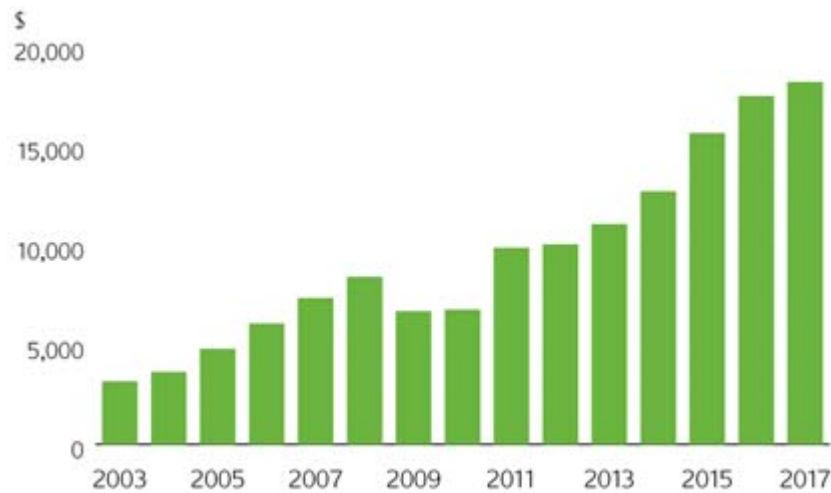
The pursuit of future proofing involves non-traditional approaches to investments. The innovation nonetheless needs to be consistent with rational investing principles to ensure objectives are met without inadvertently creating new risks for clients. This is particularly relevant when seeking strategies that address both short term and long term requirements.

Long-term income generation

Generating a sustainable income stream from investments becomes an important consideration as clients move into retirement, as they are expecting to use this investment income to fund their retirement over the following decades. This makes income a long term concept. In recent years, the expected returns and income from traditional income asset classes has been low following years of global yield compression. As a result, investors have increasingly looked to growth assets like equities to meet their income requirements. The status quo response has been to target an equities mix that tilts towards higher yielding investments to match the desired portfolio yield target. This simple approach is often adopted because the terms 'yield' and 'income' are habitually used interchangeably when describing investment strategies.

Figure 11 below shows the value of dividend and franking credit income generated each year by investing an equal amount in each stock from the current S&P/ASX 100 index in July 2002. It can be observed that dividends from Australian shares have been a resilient source of income, with the income received growing at a rate that exceeds inflation over the long term. Therefore, it is a rational expectation that investors are attracted to the apparent 'stable growth income' characteristics of Australian shares.

Figure 11: Dividend and franking credit income
S&P/ASX 100 index

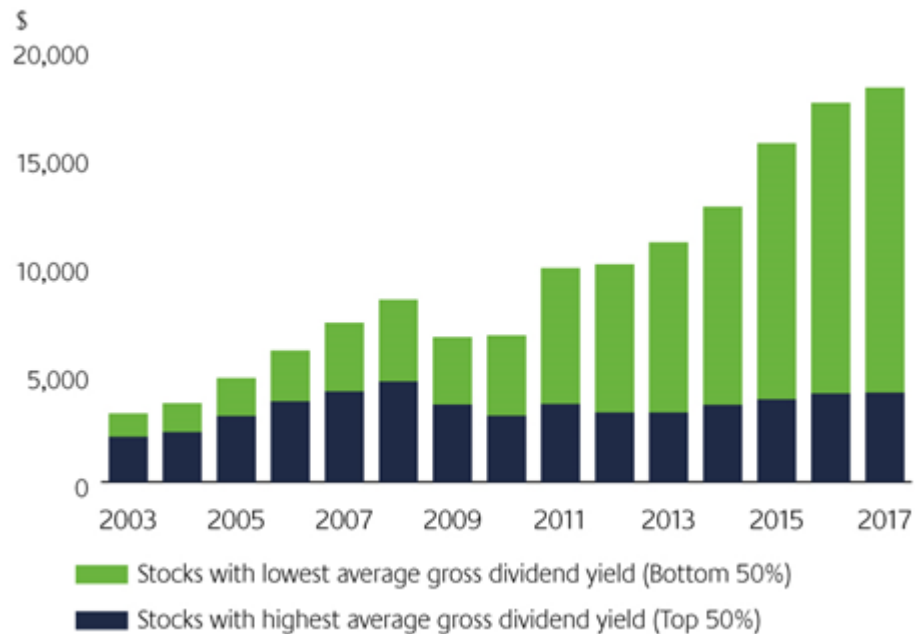


Source: Colonial First State Global Asset Management, UBS, IBES, IRESS. Forecast yield data calculated from consensus IBES data. Average income and capital over 15 years calculated assuming \$1,000 in each stock in July 2002. 66 stocks from the current S&P/ASX100 have the required 15 year price and dividend history. Data to June 2017.

While it is true that an investment in Australian shares has provided a good source of income, investors often extrapolate from this result and conclude that they can increase the amount of income generated each year through limiting their investments only to stocks that pay a high dividend yield. Does this simple approach deliver the desired outcome? If we seek higher income from equities by tilting to stocks with higher yields, we change the underlying portfolio holdings. How does the resultant share price performance impact on income generation? There is a need to understand the role that capital growth over time plays in generating an attractive income stream from shares over time.

It may be counterintuitive, but equity investors aiming to maximise their *dollar* income return over the long term must continue to retain a focus on the growth returns of the equity market. This is best explained by Figure 12 (next page).

Figure 12: Equity market returns
S&P/ASX100 index



Source: Colonial First State Global Asset Management, UBS, IBES, IRESS. Forecast yield data calculated from consensus IBES data. Average income and capital over 15 years calculated assuming \$1,000 in each stock in July 2002. 66 stocks from the current S&P/ASX100 have the required 15 year price and dividend history. Data to June 2017.

Figure 12 splits the attractive long-term income stream generated from Australian shares into two groups depending on their average grossed-up dividend yield over the period. The blue bar shows the income generated from stocks with the highest yields (top 50% of stocks) and the red bar shows the income generated from stocks with the lowest yields (bottom 50% of stocks). This shows investors who only targeted above-average yield stocks would have been worse off from an income received perspective, even after accounting for the benefit from franking credits. Higher dividend yields do not ensure higher levels of income will be generated over the long term.

The reason the lower yield stocks delivered greater long-term dividend income was not the stock's dividend policy or yield, but rather their higher overall total return. When it comes to income generation from shares, each year's capital return provides the base upon which next year's income return is generated. This is the key to long-term dividends. Strong total returns drive the delivery of attractive income from equities over time. This means that the approach taken to select stocks in an investor's portfolio should not be compromised in the pursuit of higher income generation.

Strategies that screen or tilt towards stocks with sustainable yield simply won't hold enough of these types of stocks that generate strong total returns and income over time but have low dividend yields. Considering income on a yield basis can result in investment decisions that deliver poor income on a dollar basis over time. Given that it is the delivery of a growing income stream on a dollar basis that is of most importance to post-retirement investors, a simple approach that targets stocks with the higher dividend yields may not provide the desired outcome. A future-proofed portfolio needs to consider income

generation with a long-term mindset and focus on the dollar value that will be generated from an investment rather than its yield.

Does the above analysis imply that the 'dividend yield' concept is flawed? The answer is certainly not. The 'dividend yield' remains a very useful metric to assess the valuation of a company at the prevailing share price, used in conjunction with other valuation tools such as price/earnings ratios, discounted cash flows or book value multiples. The issue here is that a simple concept such as a 'dividend yield' is being misunderstood and is therefore being applied in the wrong context. The above analysis shows that whilst current dividend yields provide a reasonable indication of current income, they provide a poor indication of long-term income generation. This is an example of the issues that arise when a useful short term metric is inappropriately applied to the long term.

Whilst many investors will find these results surprising, comparing this conclusion to the way bond investors typically assess bond valuations is informative. Two common valuation metrics for bonds are the 'running yield', which is a short-term measure that simply divides the annual coupon by the bond price; and the 'yield to maturity', which is a total return measure that includes assessment of the expected change in capital value and value of all future coupon payments. Bond investors tend to ignore the short-term income yield metric of the running yield (similar to the dividend yield in equities) and focus on the yield to maturity. This demonstrates a focus on total returns even in traditional income asset classes and that the equity income findings are consistent with the investment principles across asset classes.

Through-the-cycle investing – Must maintain a focus on valuations

Some strategies often considered for inclusion in client retirement investment portfolios involve a screening approach to identify stocks with certain characteristics. An example of this includes seeking stocks with 'low volatility' or 'high yield' characteristics. On the surface this strategy can appear reasonable for long term investors by providing the lower risk or high income that many investors seek. The equity market environment over the past few years illustrates that this approach may not be sustainable through the cycle to the extent desired by investors.

The problem arises from the fact that segments of the market can be prone to periods of extreme valuations. This is what has occurred to the low volatility and high yield segments of the equity market over 2011 to 2016. Many investors sought stocks with those characteristics and pushed their valuations to stretched levels. The result is that whilst some of the stocks may certainly be able to support the on-going payment of dividends over the long term, the valuation risk means that clients are exposed to this risk and investment practitioners need to consider whether the client's overall portfolio can handle the potential capital decline if valuations came back to longer term averages.

The issue with investment strategies that are constructed to be dependent on a certain style is that they are likely to fluctuate between phases of being expensive and cheap at various points in the market cycle over time. Certain strategies may perform strongly for certain periods of the market cycle (as has occurred in recent years), however it is critical that investors take a forward-looking assessment of their investment strategy. This is a challenge for long-term investors seeking appropriate solutions that can address the multiple client objectives over a broad range of future potential market environments.

A through-the-cycle mindset should also be applied to other relevant market drivers that may have a material impact on certain investment styles at different points in the market cycle. This includes interest rate cycles, inflation cycles and changes in underlying leverage.

One important point to note is that this future-proof framework does not conclude that these strategies that fail to be effective through the cycle are inappropriate for inclusion in

a client's investment portfolio at any stage. Rather it is argued that those strategies are better suited to being used occasionally as an expression of a desired market theme or style as part of a market timing allocation strategy, which depends on the relative attractiveness of the strategy at a point in the market cycle and reviewed frequently by the adviser. This is a different portfolio construction framework compared to seeking to develop long-term, through the cycle, future-proof portfolios.

Combining/blending strategies in a portfolio

The process of allocating to intra-asset investment strategies in a client's portfolio will require an understanding of the sources of return (risk premiums, betas, alpha sources) and risk contributors to ensure the strategy adds appropriate diversification. Consider different defensive equity strategies that are all designed to deliver lower volatility outcomes.

Whilst each of these strategies is aligned to the desired client objectives of investors near or in retirement, the approach that is taken for each of these strategies is different. It is important to identify the source of the value add and the distinction between alpha and beta of each strategy that is assessed. This is particularly critical for understanding the impact of each strategy on expected long-term return expectations. A future-proofed portfolio implementation process should ensure that objectives are not considered in isolation.

The issues considered when seeking to construct future-proof portfolios highlights a number of limitations when using a mean-variance optimisation approach to construct model portfolios for outcomes-based investors.

Firstly, the optimisation is based upon assuming a single period framework for the investment horizon. This ignores the time/path dependency issue discussed in Pillar 1 and cannot account for the timing and magnitude of cash flows.

Secondly, the composition of returns between income and capital growth cannot be assessed. This is an important consideration for many investors who require a sustainable income stream from their investments.

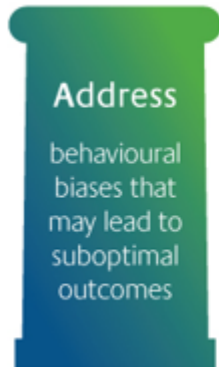
Thirdly, outcomes-based investment strategies are likely to have larger allocations to non-normal asset classes or non-static variable beta strategies, both of which cannot be easily accurately modelled for the optimisation.

Figure 13: Potential defensive equity strategies

Sector	Managed volatility / low volatility smart beta	Absolute return - Market neutral	Absolute return - Market timing	Buy Write
Supporting rationale	'Risk' is mispriced by the market	Stock picking skills exploited for both long and short ideas	Market timing skill exists	Options efficiently price future uncertainty
Source of low volatility	Quant factor	Cash exposure	Cash exposure	Selling upside options (and limited option buying)
Investible Universe	Narrow	Broad	Broad	Broad
Alpha or Beta?	Beta	Alpha	Variable cash (unconstained): Alpha + Beta Cash or CPI plus targeted: Alpha	Alpha + Beta
Features	Low cost implementation	Relatively constant low beta (lower expected return - alpha only) Seeking less correlated returns	Seeking less correlated returns	Relatively stable market exposure Positive carry strategy
Challenges	Crowding risk / exploited away? Tail risks unknown relative to other strategies	Short selling introduces additional costs and risks High degree of manager selection risk	Equity allocation unlikely to be fully invested Non-constant market exposure (variable beta)	Volatility as an additional risk/return source - requires additional expertise

Source: Colonial First State Global Asset Management.

Pillar 3



Acknowledges the existence of an emotional side to investing

Focuses on the 'journey risk' of clients deviating from their long term investment strategy during periods of market stress

Emphasizes a future-proofing mindset is about managing implementation risk, based on more than just investment theory

Investment approaches often focus on theory without giving due consideration to the emotional aspects of investing. Clients retain full control over their investments, and with broadening financial engagement, behavioural factors can play an increasing role in impacting investment outcomes. Investments are ideally implemented with objectivity, allocating capital to the best ideas formed by available facts and information. However, behavioural biases that create an emotional response to an investment outcome can potentially result in sub-optimal outcomes over the long term. A future-proof strategy requires consideration of this interaction between psychological behavioural biases and investment approaches.

Loss aversion

Large losses induce the strongest emotional response from investors. Investors are normally risk averse to begin with, but this risk aversion increases as clients approach retirement and move into retirement. This is due to their reduced capacity to contribute additional capital if markets experience a material decline.

One of the challenges with this behavioural issue is that loss aversion often becomes elevated right after a market fall, despite rational awareness that markets by their nature will be cyclical. The risk is that investors will seek to exit risk assets at this point and lock in permanent losses of capital, potentially risking the achievement of their longer term objectives.

Future proof approaches should seek to incorporate features that are able to help counteract the negative impacts of loss aversion and help keep clients invested through the market cycle, including through inevitable periods of market weakness. This can come from reducing downside risk or through providing a smoother returns path; in effect improving the investors 'path of returns' experience thereby reducing the probability of downside sell triggers.

Recency bias and FOMO

There is a tendency of investors to give greater value and weight recent outcomes disproportionately compared to other market observations. This builds on the premise that the best forecast for what will happen today is what happened yesterday. However this is a generalisation applied in isolation; over history we know financial markets are far less predictable, and recent outcomes are not necessarily good projections for the future.

The distinction between investment styles and genuine future proofed solutions has been established in the previous section of this paper. There may be periods in which investment

styles may appear to work better than solutions, particularly if market conditions are favourable to that specific style. There is also a natural selection bias, in which new products developed as potential client solutions are often designed with the same recency bias to back test well over the immediate history. From the client's perspective, this recency bias can manifest in the form of another behavioural bias: the fear of missing out (FOMO) on strategies that appear to perform well over recent history.

As a result, when developing a future-proof portfolio strategy it is important to investigate on first principles whether the strategy will be robust under different market conditions and appropriately improves the likelihood of meeting client objectives under a broad range of market conditions. This is more critical than reviewing the recent history of an investment products performance.

Pillar 4



Avoids over-simplified strategies that appear attractive over shorter timeframes but may not address all objectives over the long term

Avoids reliance on 'rules of thumb' or 'assumed truths' when developing investment strategies

Acknowledge the complexity

Given the notion of future-proofing relates to identifying appropriate long-term strategies that seek to achieve a balance between multiple objectives over different timeframes, it is inevitable that a future-proof investment strategy is likely to be relatively complex. Delivering simplicity is a benefit to the end investor and seeking to simplify their retirement planning challenge as much as possible is certainly a part of future-proofing, but care is required to ensure issues are not over-simplified and result in costs as opposed to benefits.

Rather than seeking a simple and readily understandable strategy, an important element of a future-proofing strategy will include on-going client education to help them better understand the inevitable trade-offs between their different objectives and how different strategies in their investment portfolio contribute to the achievement of those objectives.

The complexity of designing appropriate long-term retirement investment strategies has implications for asset managers. Objectives-based strategies should be held to a higher level of scrutiny when reviewed by researchers. It is insufficient to simply assess the likelihood that stated objectives will be achieved. Rather, there is a need to examine the appropriateness of objectives themselves on a long-term basis.

Rules of thumb

There is an understandable desire to keep things simple when it comes to implementing client portfolios. As a result, the investment world is prevalent with the use of 'rules of thumb' and simplifications. The problem with many simplifications is that they can often result in satisfying one objective whilst ignoring others and introducing additional issues.

When concepts are simplified, the basic assumptions upon which they are based are often ignored and the concepts are applied more broadly than they were originally intended. The end result can be an investment strategy that appears to address the desired outcomes over a shorter timeframe but may not address some or all of the objectives as originally intended over the long term.

There are numerous simplifications that are commonly made when developing equity solutions that seek to balance multiple investor objectives and the consequences of their adoption need to be carefully considered. One example relevant to the design of retirement investment strategies is: *Chase dividends because dividends make up the majority of total returns.*

It is often reported that dividends make up the largest proportion of the return generated from investing in Australian shares, exceeding the proportion of return generated from capital gains. This fact is used to claim that dividends provide a more reliable source of return than capital gains. This claim can be examined with a simple example shown below.

Figure 14: Illustrative example - income/growth bucketing

	Index weight	Income return	Share price return	Total return
Stock ABC	50%	10%	-8%	2%
Stock XYZ	50%	0%	10%	10%
50/50 Market Index		5%	1%	6%

Source: Colonial First State Global Asset Management

The table shows the income/growth split for two stocks and the constructed index based on the two stocks. Whilst the index reports that the vast majority of the index total return was sourced from income, it can be readily observed that targeting that income would have resulted in an inferior total return outcome. This distortion is a result of the fact that shares price drop when dividends are paid and, at the risk of stating the obvious, there can never be a negative dividend. Even though dividends make up the majority proportion of total returns from share investments should not be extrapolated to justify a simple investment strategy that targets high dividend yield stocks.

Simple implementation

1. **Using 'income' and 'growth' buckets** – one client communication approach used to articulate an investment strategy to clients has been to explain that certain parts of a portfolio are dedicated to 'income generation' and others to 'growth'. However, care needs to be taken with the application of this concept. As demonstrated earlier in this paper, generating income from equities requires a different mindset to traditional income assets, such as bonds. Stocks with strong growth characteristics can generate significant levels of income in dollar terms over the long term.
2. **Systematic derivative strategies** – A common approach to changing the return path of a traditional equities exposure to deliver a smoother outcome has been through the use of derivatives. Equity options provide a way to alter the return path of an investment either through the purchasing of options to protect against downside risk or through the selling of options to generate option premium income, or through a combination of both. However, using options creates additional complexities that need to be managed and addressed. One approach that seeks to simplify this complicated

concept, particularly to address the need for client understanding of the strategy, has been via systematic implementation of derivative strategies.

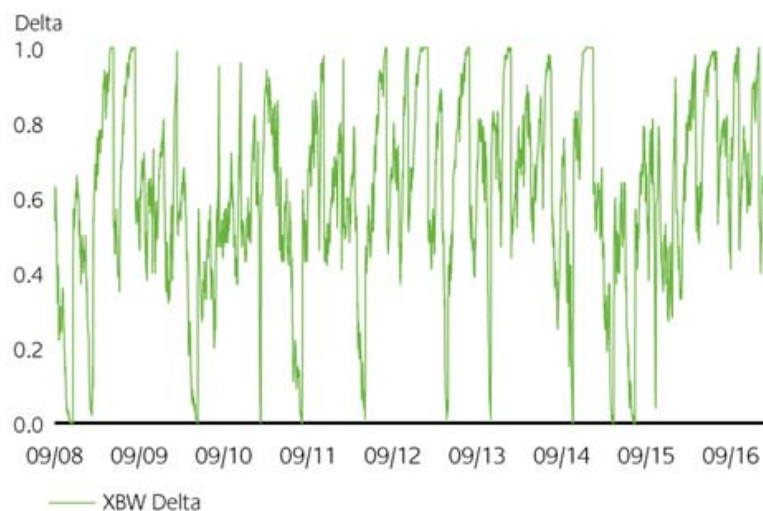
Systematic purchasing of put options to provide through the cycle downside protection can become prohibitively expensive over time. The cost of purchasing the put option varies depending on the market perception of risk at that point in time. Because of this, the time at which investors would most desire protection would generally be when options are at their most expensive and most prohibitive to implement. While using put options does protect investors against short, sharp downward price movements, the cost of purchasing the put options can accumulate over time, and in the long run may outweigh the benefits of the short-term protection they offer.

Related to this is the use of systematic option selling to generate income. These strategies can reduce the exposure to equity risk and deliver a smoother return profile, both key objectives when developing investment strategies for non-accumulation investors. However, the outcomes delivered can be very different depending on how the strategy is implemented.

The risk with adopting a simple rules-based approach to implementing a buy-write strategy can be seen by examining the ASX buy-write index (S&P/ASX XBW). This buy-write index appears to replicate in principle what a buy-write strategy attempts to achieve by combining an index exposure and selling the closest 'out-of-the money' S&P/ASX 200 Index call option each quarter. This option position is held for the three months until expiry, at which time a new option is sold and the process repeated.

Figure 15 below shows the historical market exposure of the S&P/ASX Buy-Write Index (measured by the 'delta'). The buy-write index results in an unmanaged, random, saw-tooth pattern of market exposure and ranges from full market exposure (delta 1) to zero market exposure (delta 0). This unmanaged exposure creates a high degree of market timing risk and it is unlikely to match the desired equity exposure requirements of any investor.

Figure 15: 'Real' exposure of a systematic option writing strategy
S&P/ASX Buy-Write Index



Source: UBS research, Colonial First State Global Asset Management Research. September 2008- May 2017.

Importantly, this issue does not only apply to this index; investors (SMSF's and high net worth investors) often purchase 'blue chip' stocks – such as the major banks or Telstra – and sell a single corresponding call option on that share to generate income. Investors implementing this single option position on individual stocks need to be aware that they are implicitly generating this same unmanaged, saw-tooth exposure profile for their share investments. This highlights the importance of the derivatives component of the strategy being actively managed rather than a simplistic rules-based implementation approach being adopted.

HOW THE FUTURE-PROOF FRAMEWORK BENEFITS INVESTORS

Designing and implementing investment strategies for clients is a challenging exercise. Most investment practitioners would agree that it becomes even more complex when considering strategies for clients approaching or already in retirement. This added level of complexity is the result of seeking to identify a balanced approach to address multiple client objectives simultaneously and the fact that some of these objectives conflict with each other and have different time frames. Trade-offs are an inevitable reality.

A 'future proofing' mindset helps to reduce this complexity by taking steps today to improve the likelihood these objectives will be met in the future. A focus on increasing the resilience of a portfolio to different investment/market cycles will help clients achieve improved end outcomes. To achieve this, this paper has advocated a 'whole of portfolio' approach to future proof client's retirement investment portfolios that supplements asset allocation strategies with appropriate intra-asset level strategies.

This paper has introduced a conceptual framework that can be applied by investment practitioners to assess the suitability and sustainability of different strategies applicable at the intra-asset level. A second follow-up paper is planned that will provide a more detailed study on the effectiveness of different strategies that may be used in client retirement portfolios.

Investment practitioners can realise improved outcomes for their clients through focusing on:

1. Balancing the different objectives to improve the probability of all the objectives being simultaneously met
2. Providing a smoother path of outcomes to minimise the impact of emotional responses to market movements
3. Improving not just the expected outcomes, but also increasing the probabilities of achieving those targeted outcomes

When viewed through this lens, 'future-proof portfolios' are entirely achievable. Given the complexity of developing retirement investment strategies, the 'whole-of-portfolio' approach and framework should warrant consideration by investment practitioners to achieve better long-term outcomes for clients.

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