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MLC's scenario insights & portfolio positioning

MLC Horizon, MLC Inflation Plus and MLC Index Plus portfolios

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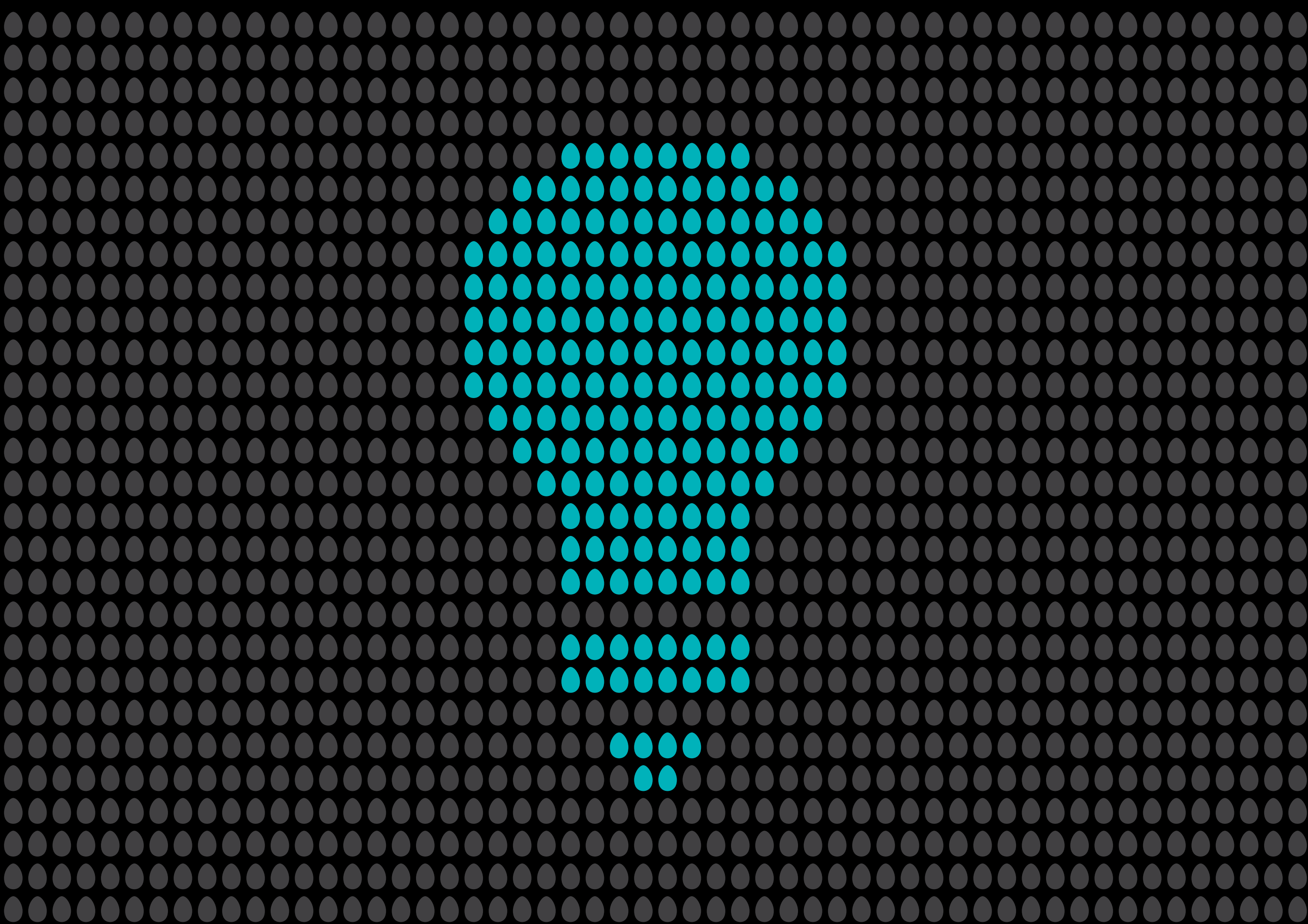

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Update for the quarter ending 30 June 2019.

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Quarterly insights

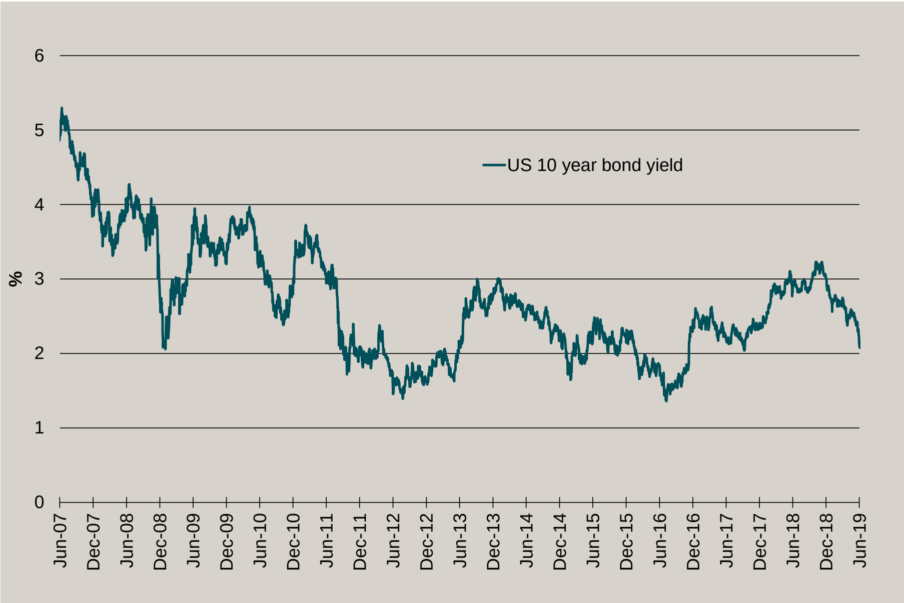
The past six months have seen monetary policy once again propelling share and fixed income markets higher. Lower rates are forcing investors up the risk spectrum. We are seeing this effect clearly in Australia as retirees, reliant on interest income, are facing an unenviable choice of lower income or increasing the risk of capital losses. This has been challenging for our portfolio positioning in the MLC Horizon and Index Plus portfolios. In Inflation Plus too, cash holdings are being brought down as we seek higher return potential while managing risks with a combination of offsetting positions, defensive growth exposures and cash-backed derivative strategies.

As we have been saying for some time, bond yields are at low levels which make them risky and unattractive in many future environments. But bond returns over the past year have been strong with yields continuing to tumble (chart 1). Our traditional portfolios, Horizon and Index Plus, have been underweight all maturities bonds and therefore have not captured all this return potential. Our long positioning in foreign currency has been an important offset for the Horizon 4 and 5 portfolios, and has added significant value for the Horizon 6 and 7 portfolios too. However, particularly for the Horizon 2 and Index Plus portfolios, the underweight bond position has reduced returns.

MLC'S ACTIVE INVESTMENT APPROACH

- Key to MLC's market-leading investment approach is our unique Investment Futures Framework.
- In an unpredictable world, the Framework helps us comprehensively assess what the future might hold. By taking into account the many scenarios that could unfold – positive and negative – we gain continuing insight into return potential, future risks, and opportunities for diversification.
- The information from the Framework gives us a deep understanding of how risks and return opportunities change over time for both individual assets and total portfolios.
- We can then determine the asset allocations that will help achieve our portfolios' objectives with the required level of risk control, and adjust the portfolio if necessary. We'll generally reduce exposure to assets if we believe risk is too high. We prefer exposures with limited downside risk compared to upside potential.
- More information about MLC's investment approach is in Appendix 2.

Chart 1: US 10 year bond yields have been tumbling over the past year



Source: FactSet.

The environment has also been challenging in terms of stock selection. The exception has been private equity which has been a strong performer and, together with value adding foreign currency positions, has meant that the Horizon super and pension portfolios have generally performed well versus benchmarks. However, for the non-super portfolios which do not currently have exposure to private equity, a combination of short duration positioning and stock selection underperformance has resulted in benchmark underperformance.

Our underweight to bonds was put in place at yields not far away from today's levels, since then yields have fluctuated but have generally been higher, supporting the position. However, after a significant rise in yields last year, the strong rally in bonds this year has meant that the underweight position has reduced portfolio returns over the past year. This has led the investment team to carefully reflect on portfolio positioning and whether there is a fundamental change in the investment environment. A significant underweight was in place because of the strength of the signal from our scenarios modelling. Our modelling is primarily fundamentally based, whereas policy settings have been the driver of bond pricing.

Quarterly insights

Policy makers rather than market fundamentals are determining market pricing. This has caused pricing to go to extreme levels.

When market pricing moves to extremes, positioning signals across scenarios tend to converge – the lower bond yields produce a greater range of scenarios in which yields are expected to rise. I have seen a similar convergence in scenario signals only once previously in my career. In the late 1990s global share prices went to extraordinary levels – the (much simpler) set of scenarios I was working with then provided a strong signal that risk was very elevated. While that signal was correct, the time taken for that to be reflected in market pricing was extremely challenging. The strength of the signal to underweight global shares was extraordinarily strong, but an underweight position reduced returns for a long time – it was hard for fundamentally driven investors to survive that journey. I feel parallels today, which means the environment could be of very long duration. During the tech bubble there were arguments that 'it's different this time', ultimately it wasn't, but is this a possibility that we should consider today?

The phrase 'it's different this time' may be the most dangerous in investment management. It's used to justify asset pricing which is outside what's been previously experienced. Bond yields are very low relative to history. There are always reasons for extreme market prices and today these reflect deflationary forces (too much debt, globalisation, technological change). Following the bond rally, markets are now discounting significant further monetary easing (where rates are not already at zero). The assumption priced into markets is that monetary policy will remain easy for the next decade. While growth in the US has moderated, it is still growing around the potential rate – and the growth rate is higher than it has been going into past easing cycles. Given trade uncertainty and low inflation, it may be prudent to have easier policy than would generally be appropriate. But there is now clear scope for easing expectations to be disappointed and that there is a policy tightening relative to expectations. However, we cannot be sure that bond yields will not move lower still. The obvious trigger is an escalation of trade tensions leading to declining global growth and potentially a recession. To provide greater participation in the returns resulting from even lower bond yields we have been moderating our positioning. This is uncomfortable because it risks locking in value that has been missed. To offset this we are examining the use of derivative strategies to protect against higher yields.

We have been questioning whether our perspective that yields are ultimately unsustainably low is valid, or at least how long we might have to wait before we are right. Our scenarios look across at least a three-year time frame. In an environment in which we continue to see rapid market repricing, this arguably leaves some opportunities underexploited and portfolios vulnerable to market prices moving in the opposite direction to their ultimate destination (which, in extreme cases, can make it difficult to maintain positioning across the journey). There are two questions implied here. First, *might the current environment be very prolonged with bond yields remaining at low levels (perhaps even lower) for the indefinite future?* And, secondly, *what is the right process response to rapid market repricing?*

In answering the first question, I have been reflecting that generally, in investment management, experience provides important insights for future portfolio positioning. As Mark Twain insightfully commented, history does not repeat, but it rhymes. But what if the future is so different to the past that experience is a hindrance? The longest serving members of our investment team have been investors through inflationary episodes, a long disinflationary period and repeated stages of the economic cycle – but not a generalised prolonged deflationary slump. The longer sweep of history does include deflationary episodes, though it is hard to assess the relevance to today given dramatically different geopolitical, financial, economic and policy frameworks. Nevertheless, we are reflecting on the possibility that it is different this time. While a global deflationary downturn has long been an important risk scenario in our analysis, portfolio positioning has been more oriented to control inflation risk (because it is a bigger threat to preservation of capital). History has also taught us that deflationary slumps can exacerbate socio-political tensions within countries and between countries. This is not an insignificant risk, given prevailing geopolitical tensions. The deficit funding of the Vietnam War was a key driver of the inflation rise in the US in the late 1960's.

We are not experiencing a deflationary slump, but that is what policy makers' fear - they would prefer an inflation problem because they know how to respond to that. Deflation can become entrenched with expectations becoming engrained and difficult to reverse. That is not the environment that we are experiencing, but inflation that is lower than policy makers prefer increases the risk that a recession could lead to a prolonged slump. While bond markets are pricing a very weak economic outcome, share markets are not. To date, lower bond yields have supported higher share prices in two key ways. Firstly, as the discount rate applied to future earnings (ie bond yields) has fallen, the present value of future earnings streams (ie share prices) has risen. Secondly, lower bond yields have forced investors to increase the risk in their investment portfolios to achieve their investment targeted returns. Share prices have benefitted from this risk appetite shift. This means that absolute returns to investors have been robust. In a deflationary slump share prices will decline, meaning that bond exposures become more important. As we have been saying, today's low yields limit the return offset, but should we be less grounded in the past in terms of how low yields could go? And can lower yields mean that share markets can continue to move higher?

It is possible that the combination of falling yields and rising share prices could persist for some time longer. A key question is whether central banks, most notably the US Federal Reserve (Fed), can continue to offset market volatility with increasingly stimulative monetary policy (the Fed's 'put option'). Further US interest rate cuts are already priced in, and there is limited scope to go further. Also, tighter lending standards mean that the impact of lower rates on growth is smaller. Quantitative easing (QE) could resume, and there are now views that QE could continue indefinitely. There are suggestions that the government could issue an unlimited amount of debt and that if there was insufficient investor demand, the Fed could buy it. This is the essence of 'Modern Monetary Theory' (MMT) according to which the size of government deficits and the amount of government debt do not matter - at least not if used to expand the productive capacity of the economy and there are sufficient workers. US politicians on both sides of the debate appear increasingly inclined to increase spending and ignore deficits. With the US labour market close to full employment such a policy suggests higher inflation, though that may still take time. In Europe, the appointment of the International Monetary Fund's (IMF's) Christine Lagarde to head up the European Central Bank (ECB) is expected to see a more dovish European Union central bank. A dovish ECB would be more prepared to lower rates and use QE to respond to any downturn. They could also encourage more counter-cyclical measures, such as more fiscal spending to counter slowdowns. The IMF under Lagarde's leadership has been quite vocal in calling for policy makers to use all tools available to them to address economic downturns, including monetary and fiscal policies.

The bottom line is that policy makers do have a tool to combat deflation - it is sustained fiscal stimulus. This is where Japan failed, the stimulus was insufficient to offset lower private sector spending. The opportunity for Japan to use fiscal policy to generate inflation is still there (though harder because deflationary expectations are so entrenched), as it is elsewhere. While higher spending (or lower taxes) increase the budget deficit, if the growth (real growth plus inflation) rate is higher than the interest rate on the debt, the debt to GDP ratio can be stable or even decline. Paradoxically higher spending could have led to a lower public debt to GDP ratio. It is in the self-interest of politicians, particularly in the age of populism, to increase spending and support the economy. We should also note that some of the structural factors that have produced lower inflation are weaker today – particularly globalisation and the shrinking ratio of workers-to-consumers (though technological change is an offset). The implication is that whether the current environment is of long duration is in the hands of policy makers. With a US election next year, this seems unlikely to be overlooked by President Trump.

Turning to the second question posed above, *"to respond to rapid market repricing"*, we are mapping out a set of shorter-term scenarios which constitute paths that ultimately feed into our primary scenarios. For example, economic weakness could see adoption of MMT or looser fiscal policy which initially could mean lower bond yields, but later higher inflation. Key questions for the future include:

- how will share markets react to the expected rate cuts if they do and don't eventuate?
- to what extent are these priced in already, or will growth concerns weigh on share prices?
- if growth fears subside will central banks raise rates to provide more firepower later?
- if inflation rises, can interest rates remain low and how will bond yields react?
- if inflation rises, can it be regionally contained or does the highly interconnected nature of the global economy mean that a price breakout will necessarily spill outward from above-trend economies causing stagflation in the weak economies?

On the other side of the coin, monetary conditions are increasingly global as liquidity flows outward from stimulative funding centres toward tighter regimes in search of carry (such as from Japanese life companies into Australian bonds). Does this jeopardise the ability of domestic policy to control inflation, or other policy responses required (ie capital controls) that bring with them other distortions? These are among the issues we need to weigh in determining the most appropriate portfolio positioning. A key factor though is the extent to which central banks can continue to be effective in supporting share market confidence.

Current market pricing implies confidence in the ability of central bankers to come to the rescue when things go wrong. This creates investor complacency. In the 2018 December quarter they were slow to respond; the consequences provided a clear illustration of this vulnerability. This policy is encouraging risk taking behaviour which increases downside risks, notably there are investors selling volatility (receiving a payment for writing options against declining markets). If policy makers step in to limit or reverse market declines this is a winning trade. (This does have the benefit of making options protection relatively inexpensive, which we have been exploiting.) This tends to dampen volatility (but makes it more reactive to sell-offs), which means that volatility-targeting funds (used by insurance companies) and value-at-risk strategies (used by hedge funds) and other risk-based trading algorithms have higher risk exposures than would otherwise be the case. This means that higher market volatility triggers more forced selling, which implies that the reaction to sell-offs can be rapid and steep. Again, we need to temper the possibility of ongoing policy driven support for share markets (which is unlikely to persist indefinitely) against the understanding that this environment has created some clear vulnerabilities.

Efficient portfolio construction is always the mainstay of investment returns. Yet, the prevailing combination of low yields (high valuations) and limited opportunity for diversification makes an absolute laser focus on the efficiency of risk control paramount in the investment decision making process. This means that now more than ever, we are assessing the total explicit and implicit costs of downside protection to control downside risk and leaving no stone unturned in our search to maintain as much market exposure as possible without compromising our core focus on downside risk control. We recognise that hoarding cash is not necessarily the optimum way to protect the funds from a rise in risk sentiment and are pursuing non-cash risk control to the extent that we can. Equity and interest rate optionality plays a role, but only where cost can be contained and upside retained without extending downside beyond the risk tolerance. Credit too remains important as does real duration where we believe that the yields on offer in shorter-dated securities are useful low-risk sources of return for the portfolios.

Embedding defensiveness in Australian shares

The Inflation Plus portfolios have a unique exposure to Australian shares to improve its alignment with Inflation Plus's risk-focussed objective. While top-down modelling has highlighted the potential attractive returns on offer from Australian shares, risk specific to particular large sectors like banks had limited our allocation. In recent years we have solved this by building our own Australian shares exposure which is focussed on delivering share-like returns, while reducing drawdowns, rather than beating the benchmark.

To do this we utilise three main levers:

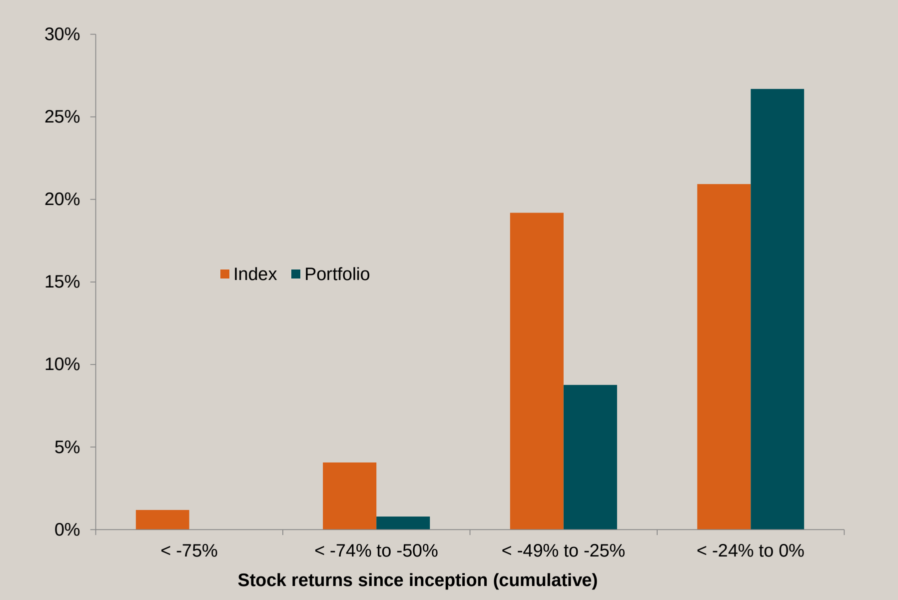
1. *Minimise our exposure to companies with fundamentals that suggest challenging conditions.* We achieve this primarily through screening the investment universe, based on the work of Stanford

University's Accounting Professor Joseph Piotroski. The team also overlays factors like industry structure (avoiding concentrated customer bases etc), corporate governance and valuation in identifying suitable stocks from the ASX200 for investment. Currently 124 stocks are eligible for investment - while this has been reducing in recent periods it is still relatively high versus history given the historically robust Australian economy. Since the launch of the strategy in late 2015 this approach has been very successful in avoiding most of the largest losses on the ASX200.

2. *Weight stocks in the portfolio on their potential to diversify (ie reduce risk) rather than market cap* (charts 2 and 3). The portfolio is constructed from positions that are impacted far less by market cap, and more by their ability to reduce portfolio risk. This results in a much more diversified portfolio than the index, and one where the portfolios' expected risk is significantly lower than the index. Measured by volatility the portfolio is 10% less risky than the market, and by beta 20% lower. Importantly, this is not achieved by avoiding the high-risk sectors like mining. The portfolio still has a significant allocation to that sector – rather it doesn't hold a weight as large as the index because an allocation of that size is no longer diversifying.

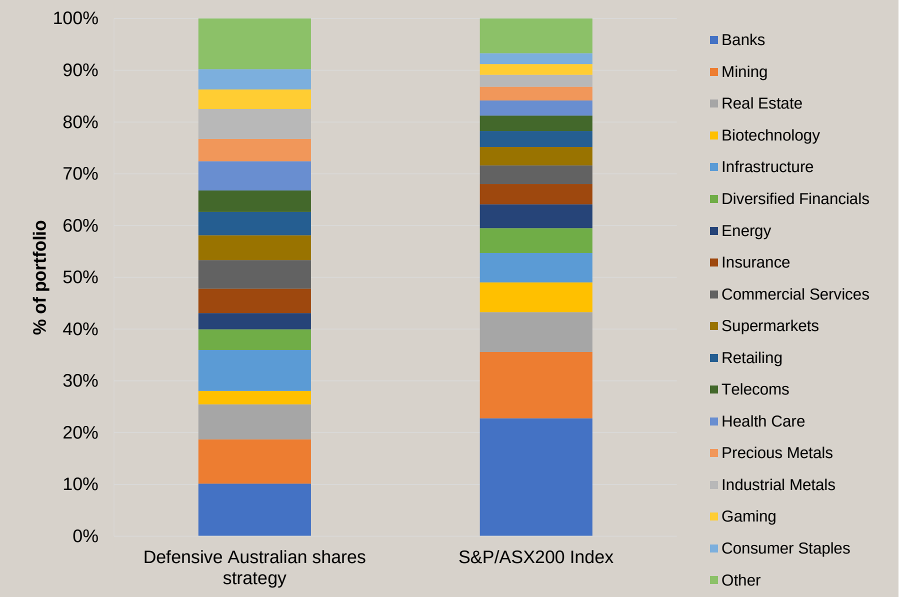
3. *Utilise derivatives where available to control significant, but unlikely, events.* Australia enjoys access to an extensive exchange traded single stock derivatives market. Given the portfolio's focus on reducing drawdowns, the team uses put options to protect against sudden adverse changes that may have a significant impact on the portfolio rather than avoiding investment in those companies all together. Good examples include the Australian banks during the Royal Commission and Australian energy companies in the lead up to the last election. Both sectors offered significant franked dividend yields, but given the potential for dramatic changes to the regulatory environment, there could have been significant impact to their potential profits. As part of each quarterly rebalance the team tries to identify the possibility of these events ahead of time so the protection is in place when it's needed.

Chart 2: Percentage of securities delivering negative total returns



Source: NAB Asset Management Services Limited.

Chart 3: Our defensive Australian shares strategy is much more diversified across sectors than the index



Source: NAB Asset Management Services Limited.

Finally, when all else fails – use cash. While the team tries hard to manage as many of the risks and remain fully invested, when all the levers have been pulled and the risks appear very unfavourable, the flexibility is there to invest in cash. While in the last 12 months this has been relatively low at ˜5%, it has been as high as 20%. It should be emphasised that this is viewed as a last resort for this particular portfolio – but it remains an important option for some investment environments where the bottom-up paints a bleak picture.

The Investment Futures Framework: Scenarios and changes in return potential

In managing MLC's multi-asset portfolios we assess potential future risks and opportunities. We invest by understanding what could happen as opposed to picking the single future that will unfold. The future is not predetermined; it depends on what policy makers do, how companies behave and how these things compare to investors' expectations.

By understanding the different ways in which the future might unfold we make informed choices about the trade-offs between risk and return. A higher exposure to shares will increase returns in some scenarios, but reduce returns in others. Where there are assets that generate positive returns when share markets decline, we can have a higher share market weighting. Nominal bonds played an important diversification role through the GFC. But today, low starting bond yields mean they are at best poor diversifiers of share market risk and are outright risky in some circumstances.

Looking forward from today, valuations are again as extended as at the end of third quarter 2018. However, it remains possible that robust returns continue. Volatility in May provided an opportunity to have a small increase in share allocations, but the future of share market returns remain very dependent on policy decisions as well as the robustness of earnings.

Our aim is to understand the key things that could happen and then identify the most appropriate trade-off of risk and return, given the objectives and constraints for each portfolio, to find at least an acceptable outcome regardless of what happens.

Our promise, particularly to our Inflation Plus portfolio investors, is to maintain the risk control discipline - this means that in a worst-case scenario we must avoid significant negative returns over each portfolio's time horizon. However, our awareness of the possibility of ongoing volatility means we need to be nimble and rapidly reassess positioning - though we still suspect further strong rises have a declining probability, we recognise that animal spirits can mean that challenging news is ignored.

Our tailored scenario set is consistent with previous quarters' and we have been developing some shorter-term scenarios to examine more closely the dynamics of a changing and more volatile environment. We continue to be vigilant with respect to a coincident inflation pick-up across major economies. Another important issue is the strength of the forces supporting a continuing depreciation in the Australian dollar (AUD). Refer to Appendix 1 for the current tailored scenarios set.

Due to the prevailing distortions and policy uncertainty, the tailored scenarios contain more complexity and cover a wider range of outcomes for assets than would be the case from a less distorted starting point.

The Investment Futures Framework scenario sets explained

Our approach assesses and analyses a comprehensive set of possible future scenarios – this is referred to as the Investment Futures Framework. This thorough assessment of the different ways in which the future might unfold provides us with detailed insight into return potential and, most importantly, the sources and the extent of risk and the means of efficiently controlling risk. We track how future risk and return potential changes through time. The process provides a deep and detailed understanding of future risks, return potential and the opportunity for diversification. Risk is not a statistic; it arises from a range of real economic, political and business events. Using our Framework's comprehensive assessment of the potential sources of future risk we are equipped to position portfolios to extract return potential while maintaining the required risk control.

The Investment Futures Framework comprises both our **generic** broad set of 40 scenarios which pivot around the main drivers of returns – the macroeconomic drivers and investor behaviour (swings in the level of optimism or pessimism, and rational changes in risk perception) – and a **tailored** scenario set which includes as many primary distinctive scenarios as is necessary looking forward from the current starting point.

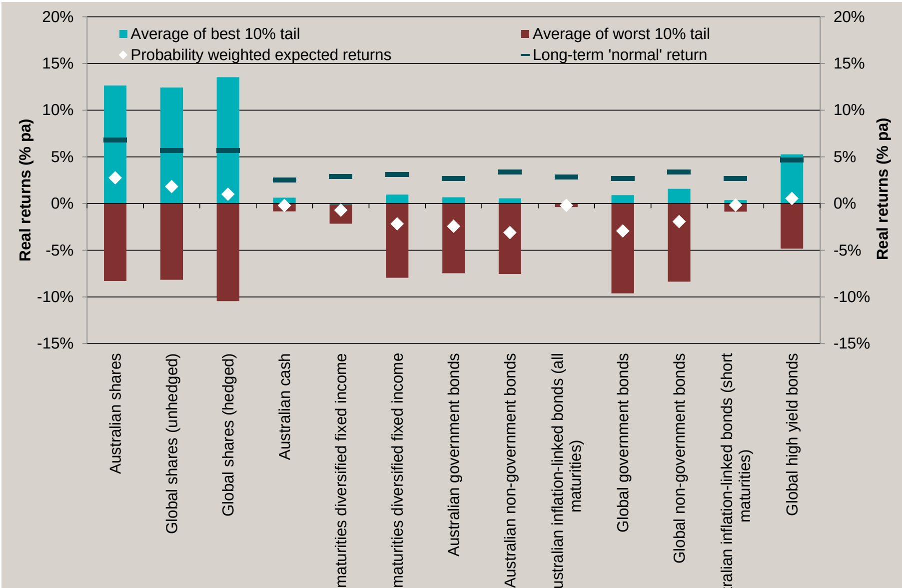
The generic set of scenarios is designed to have relevance from any starting point and provide a consistent barometer of risk and return through time. The smaller tailored set of scenarios pivot around the key characteristics and uncertainties in the current environment. The tailored set might be seen as consisting of the most obvious potential futures, though we are aware that what seems most obvious today may not be after the event – the future is only ever obvious once it has become the past.

These two scenario sets in combination are used to assess portfolio positioning. Both sets of scenarios are updated as asset prices change – as asset prices change, future return potential and possible future risks change. We take this evolution into account in positioning our portfolios.

As explained above, the fundamental underlying challenge remains widespread high debt loads. This means that outcomes will not just pivot along inflation and growth paths, but will be heavily influenced by decisions to either save or borrow in both the private and public sectors and by the direction of policy that might or might not foster an improvement in efficiency and a pickup in potential growth, and the ways in which this could impact. Credible outcomes range from favourable improvements in nominal prices and improvements in capital productivity (ie **Inflationary debt resolution** scenario) through to the **Stagflation** and **Extended risk aversion** environments that we expect would eventuate should today's unorthodox policies fail and fiscal stimulus disappoints or fails to materialise. The political pressures that arise from what are now multiple displays of voter discontent with the status quo reinforces the need to change the policy agenda. This is a risk point to watch closely, particularly as it has coincided with changing perceptions about monetary policy efficacy.

The potential real returns for each asset class are shown in chart 4.

Chart 4: 40 scenario set (generic scenarios) potential real returns (June 2019) – 5 years, 0% tax with franking credits, pre-fees, pre-alpha



Source: NAB Asset Management Services Limited.

Following strong returns this quarter, the probability weighted return potential of Australian shares has reduced and it no longer appears as superior to both hedged and unhedged global shares. Looking within global shares, what stands out today is the relatively high return potential of UK shares. However, while UK shares look attractive from this point of view there is an obvious risk scenario which suggests caution, in the same way we have concerns around the Australian share market's concentration, in particular the large exposure to banks. ANZ, Commonwealth Bank, NAB and Westpac collectively account for around 25% of the market value. Our concern has been that the banking sector could be vulnerable in some scenarios. This is based on very high average Australian household debt, elevated property market and valuations, and, reliance of Australian banks on sources of offshore funding. The defensiveness embedded in the Australian shares portfolio in Inflation Plus has allowed us to gradually raise the exposure.

Global shares don't have the same concentration risk as the Australian share market. We've also been able to access a global shares manager for the Inflation Plus portfolios which aims to outperform the global market index via stock selection as well as providing risk control via the flexibility to hold cash and other assets if market opportunities are unattractive. We have however been disappointed that our portfolio has not performed as well as expected, this is an important issue which we are well advanced in addressing.

The probability-weighted real returns shown in chart 4 (diamonds) have deteriorated over last quarter. For comparison, we've provided long-term 'normal' return expectations which are set by considering a stable fair value world - these are shown by the horizontal lines. Also, as an indicator of how uncertain these returns are, we've taken the bottom (and top) 10% of the scenario real returns and calculated the probability-weighted average in those 'tail' outcomes. These are shown in the bars. Asset classes with wider ranges could have more extreme return outcomes than those with narrow ranges.

Performance expectations

Chart 5 shows return potential for the MLC Horizon, Inflation Plus and Index Plus portfolios based on our generic (40) scenario set looking forward from the end of June 2019.

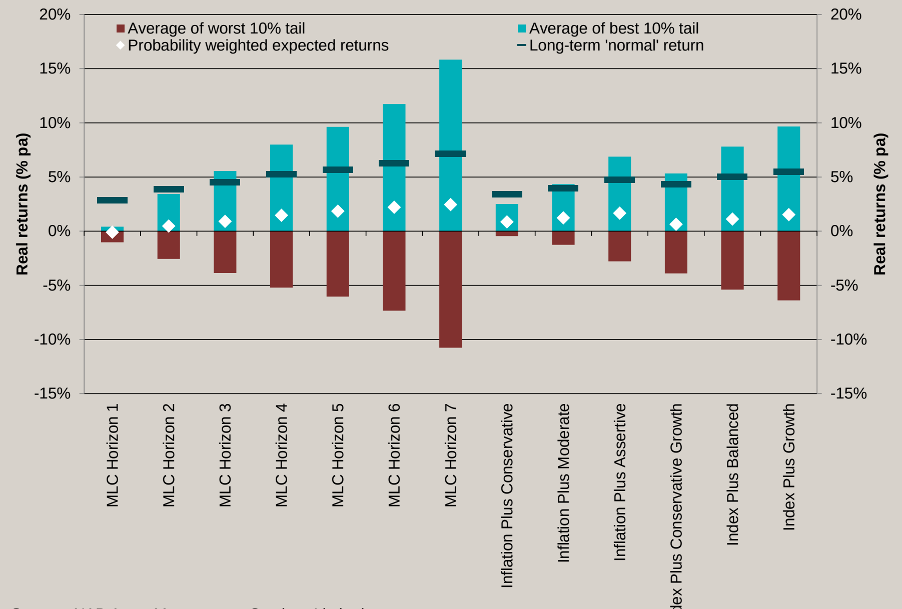
As with previous quarters, the chart shows that on average, looking across the whole scenario set, the potential reward for taking risk has declined. In the event that a scenario with relatively higher returns occurs, the returns of those portfolios with larger share allocations will be sharply higher. However, looking across the range of future possibilities and using our assessment of their probabilities, it is clear that the reward for risk-taking could disappoint investor expectations.

Comparing the MLC Inflation Plus to the MLC Horizon and Index Plus portfolios, the stronger risk focus of the Inflation Plus portfolios is evident. Consistent with their objectives, these portfolios have responded to shrinking return potential and weakening risk diversifiers by reducing exposures to riskier assets. This reduces the return potential in strong scenarios but provides tight risk control in the event that an adverse environment occurs.

In positioning the MLC multi-asset portfolios we take into account outcomes in all our scenarios. For the MLC Inflation Plus portfolios, our focus is on strictly limiting both the probability and most importantly the extent of negative real returns over each portfolio's time horizon in the event that an adverse scenario occurs, while extracting as much return potential as possible subject to this risk constraint.

Also, in relation to the MLC Inflation Plus portfolios, the chart suggests that with a single static asset allocation, a particularly positive scenario is required to meet the return hurdle. Of course, in practice the portfolios' asset allocations are not static. We actively evolve the MLC Inflation Plus portfolios' allocations through time to control risk as required and exploit opportunities as they arise. However, we will not chase returns to meet the return hurdle if that requires too great a risk exposure. If a higher level of volatility persists, this may result in new opportunities to enhance returns in an appropriately risk controlled manner.

Chart 5: 40 scenario set (generic scenarios) potential real returns (June 2019) – 5 years, 0% tax with franking credits, pre-fees, pre-alpha



Source: NAB Asset Management Services Limited.

The probability-weighted real returns are shown in chart 5 (diamonds). For comparison, we've provided long-term 'normal' return expectations which are set by considering a stable fair value world - these are shown by the horizontal lines. Also, as an indicator of how uncertain these returns are, we've taken the bottom (and top) 10% of the scenario real returns and calculated the probability-weighted average in those 'tail' outcomes. These are shown in the bars. Portfolios with wider ranges could have more extreme return outcomes than those with narrow ranges.

MLC Inflation Plus portfolios

The MLC Inflation Plus portfolios have flexible asset allocations with few constraints which enable us to target tight control of risk over each portfolio's time horizon. In particular:

- we limit vulnerability to negative returns to preserve capital in above-inflation terms over the defined time frame – if there is higher prospective risk this triggers tighter risk control
- in other scenarios, we aim to deliver attractive inflation plus returns over the defined time frame, and
- we will not chase higher returns if the risks of doing so are inconsistent with capital preservation over each portfolio's investment time frame.

Returns over the past year have been very modest, particularly relative to those generated in prior years. The past 12 months have been challenging for our defensive positioning. We are seeking to extract higher returns by taking greater advantage of market declines, exploiting low market volatility which reduces the cost of options, keeping a focus on risk moderation in the defensive Australian shares portfolio (which permits a higher allocation), and carefully reviewing manager allocations and expected outcomes from those strategies across a range of scenarios. We are also responding to lower cash rates by reducing exposures while seeking to maintain adequate risk control.

Here is a summary of the positioning of the MLC Inflation Plus portfolios. As we made a number of changes to the portfolios' target allocations during June and July, the positioning is provided over the four months ending 31 July 2019.

Asset class	**Change in target allocation to asset classes in the MLC Inflation Plus portfolios (in MLC MasterKey's super and pension products) over the 4 months ended 31 July 2019**			**Comment**
	Conservative	**Moderate**	**Assertive**	
China A-shares with downside limit of -20% (through derivative strategies)	Zero allocation	Steady allocation	Steady allocation	We maintain a small exposure to the on-shore China-A share market using the combination of a Total Return Swap (TRS) and a 20% out-of-the-money put. As the put is completely funded by the fee received from the TRS, the payoff profile for this exposure is performance of the China-A share market (AUD unhedged) with a downside limit of -20%. Due to the high growth potential and volatility of Chinese shares, this type of exposure has a favourable prospective payoff profile. This strategy has performed strongly during the past quarter.
Defensive Australian shares	Steady allocation	**Higher allocation**	Steady allocation	Our defensive Australian shares investment process directly takes into account the risks identified in our scenarios analysis. By investing in defensive Australian shares we're able to have a higher exposure to Australian shares than we otherwise would.
Global shares (through derivative strategies)	Zero allocation	**Higher allocation**	**Higher allocation**	Exposure to individual share markets has been achieved through the use of index futures. Using futures in this way allows the strategy to adapt its positioning quickly and cheaply should the need arise. Current positioning includes exposure to Japan, Europe, UK and emerging market shares.
Defensive global shares (unhedged)	**Reduced allocation**	**Reduced allocation**	Steady allocation	Primary global shares exposure is defensive through managers biased to absolute, not index-relative, shares.
Defensive global shares (through derivatives strategies)	**Increased allocation**	**Increased allocation**	**Increased allocation**	This strategy aims to gain a long exposure to shares with some defensive characteristics ie have a limited and predefined downside exposure. It seeks to achieve this by using a combination of bought equity index call options and sold equity index put options.
Foreign currency exposure	Call options protection maintained	Call options protection maintained	Call options protection maintained	The portfolios have foreign currency exposure for diversification as global shares and the AUD tend to move in the same direction. Exposures continue to be reduced as the AUD:USD has declined under 70 cents. The exposure is also partially protected (using options) from a significant rise in the AUD.
Gold exposure (through derivative strategies)	Zero allocation	Zero allocation	Steady allocation	Gold helps protect the portfolio against a range of shocks and inflationary scenarios. However the gold price can be volatile and the concept of fair value is nebulous. Exposure to gold is through our derivative strategies using futures.

MLC Inflation Plus portfolios

Asset class	Change in target allocation to asset classes in the MLC Inflation Plus portfolios (in MLC MasterKey's super and pension products) over the 4 months ended 31 July 2019			Comment
	Conservative	**Moderate**	**Assertive**	
Low correlation strategy	Steady allocation	Steady allocation	Steady allocation	High quality, transparent hedge fund strategies are a relatively important source of return potential in a world where it has become more difficult to generate returns with reasonable risk. However, these strategies are exposed to a variety of risks, and allocations are sized accordingly.
Real return strategy	**Reduced allocation**	**Reduced allocation**	**Reduced allocation**	Allocation to our multi-asset real return manager, Ruffer, maintained.
Global private assets	Steady allocation	Steady allocation	Steady allocation	Within the private equity strategy some rebalancing is underway which reduces the venture capital exposure. This locks in what have been very strong returns in this part of the market and reduces the overall risk profile of the strategy.
Australian inflation-linked bonds	**Increased allocation**	**Increased allocation**	**Increased allocation**	Maintaining emphasis on short duration inflation-linked bonds which help protect against rising inflation and interest rate risk.
Insurance-related investments	Zero allocation	Steady allocation	Steady allocation	Insurance-related investments are uncorrelated to other asset classes though it's a risky exposure that we believe is appropriate in portfolios with a sufficient investment time horizon.
Bank loans	Steady allocation	Steady allocation	Steady allocation	Floating rate loans offer some exposure to diversifying income-based risk premia without as much capital risk as fixed coupon bonds. While this exposure has been attractive in the current environment, tight spreads increase price risk and a tendency for low liquidity in adverse environments limits the degree to which portfolios should have exposure.
Global short-maturity credit strategy	**New allocation**	**New allocation**	**New allocation**	Introduced this quarter to add diversity and return enhancement with an acceptable level of risk.
Australian non-government bonds (short duration)	Steady allocation	Steady allocation	**Reduced allocation**	These short-duration bonds offer some return enhancement while limiting additional risk.
Cash	**Reduced allocation**	**Reduced allocation**	**Reduced allocation**	Cash provides a robust defensive allocation in an environment where most asset classes are expensive relative to their risks. Cash also provides optionality to swiftly adjust exposures to other asset classes. However, lower cash rates erode the positive aspects of this exposure and we've therefore reduced allocations.
Borrowings	Borrowing not permitted	Borrowing not permitted	No borrowings	Reward for risk is too limited.

MLC Horizon portfolios

For the active management of the MLC Horizon portfolios, risk is primarily benchmark-related. Benchmarks have been designed to efficiently generate above-inflation outcomes on the basis of long-term investment assumptions and taking into account that over time, a broad range of scenarios could play out. For setting our benchmark asset allocations we use our comprehensive 'generic' set of scenarios which comprises a broad set of distinctive potential futures which are not grounded in current conditions. Target allocations deviate from the benchmark when (as is typically the case) the prospective medium-term investment environment differs from these long-term assumptions.

Our scenarios analysis (taking into account current starting conditions) is used to identify target allocations which are more risk-return efficient than the benchmark which, because these portfolios must remain true to label, have constraints on the extent to which they can deviate from the benchmark. In particular, these traditional multi-asset portfolios have constraints to the mix of fixed income and shares which they can hold. This provides a level of certainty to investors about where their money will be invested, however it also means that portfolio risk is primarily a function of market risk.

As the riskiness of assets changes through time, we vary the asset allocation to position the portfolios to achieve a higher reward for risk than the benchmark. The risk aware nature of our investment process tends to mean that value is added via the adoption of defensive positioning when risk is high, which reduces loss exposure.

For MLC Horizon portfolios we are maintaining a relatively defensive orientation partly from exposures to Inflation Plus, but also through deviations from benchmark fixed income allocations though these have been reduced in size. We continually test our thinking, and we retain high conviction in the appropriateness of this positioning but recognise that the period of compressed bond yields could be prolonged. While the flexibility is more limited and exposure lower, we are utilising similar derivative strategies as for Inflation Plus portfolios, to enhance the defensiveness of share exposures and manage exchange rate risk. We are starting to reduce foreign currency exposures recognising the strong terms of trade and significant improvement in the current account.

Here is a summary of the positioning of the MLC Horizon 4 Balanced Portfolio. As we made a number of changes to the portfolios' target allocations during June and July, the positioning is provided at 31 July 2019.

	MLC Horizon 4 Balanced Portfolio (in MLC MasterKey's super and pension products) target asset allocation at 31 July 2019			Comment
	Under	**Benchmark**	**Over**	
Australian shares	•			This is a small underweight position.
Global shares (unhedged)			•	We continue to be modestly overweight foreign currencies (underweight the AUD), with an overweight allocation to unhedged global shares at the expense of hedged global shares. Foreign currency provides diversification as global share markets and the AUD tend to move in the same direction. Not hedging some overseas assets can help insulate the portfolio from losses if share markets fall. This overweight has added value and we have recently reduced exposures. The latest step was taken in July when the AUD:USD dropped to around 68 cents.
Global shares (hedged)	•			
Global property securities		•		Retained benchmark allocation - the benchmark allocations are underweight versus peers.
Cash			•	To reduce interest rate risk we've maintained an overweight to cash and underweight exposure to Australian and global bonds. Cash also provides optionality to swiftly adjust exposures to other asset classes. However, lower cash rates erode the positive aspects of this exposure and we've therefore reduced allocations.
Fixed income - all maturities	•			Underweight to longer duration bonds to reduce exposure to interest rate risk. While the potential for further falls in bonds yields is less than the potential for yields to rise, this position has been challenged this year and underweights have been moderated. We're continuing to review and positions may be re-set if yields move lower.
Fixed income - short maturities			•	
Australian inflation-linked bonds		•		This allocation to inflation-linked bonds includes exposure to both short and all maturities duration inflation-linked bonds. The portfolios are underweight all maturities exposure, and overweight the short duration exposure which protects against rising inflation through less interest rate risk.

MLC Horizon portfolios

	MLC Horizon 4 Balanced Portfolio (in MLC MasterKey's super and pension products) target asset allocation at 31 July 2019			Comment
	Under	**Benchmark**	**Over**	
Global non-investment grade bonds (high yield bonds and loans)		•		Retain benchmark allocation.
Global private assets		•		Retain target benchmark allocation.
Real return strategies (including Inflation Plus)			•	Overweight to real return strategies (ie Inflation Plus) is in part a response to low return potential for risks of investing in fixed income assets. The defensiveness of Inflation Plus has enabled the portfolio to maintain shares at around benchmark weight. We're reviewing the 'optimal' level of defensiveness in the current environment.
Low correlation strategy		•		This fund of hedge funds strategy aims to generate a return above cash and deliver returns that are mostly independent of share market performance.

MLC Index Plus portfolios

Risk is primarily benchmark-related for the Index Plus portfolios. Benchmarks have been designed to efficiently generate above-inflation outcomes on the basis of long-term investment assumptions and taking into account that over time, a broad range of scenarios could play out. For setting our benchmark asset allocations we use our comprehensive 'generic' set of scenarios which comprises a broad set of distinctive potential futures which are not grounded in current conditions. Target allocations deviate from the benchmark when (as is typically the case) the prospective medium-term investment environment differs from these long-term assumptions.

Our scenarios analysis (taking into account current conditions) is used to identify target allocations which are more risk-return efficient than the benchmark which, because these portfolios must remain true to label, have limitations in the extent to which they can deviate from the benchmark. In particular, these traditional multi-asset portfolios have constraints to the mix of fixed income and shares which they can hold. This provides a level of certainty to investors about where their money will be invested, however it also means that portfolio risk is primarily a function of market risk.

As the riskiness of assets changes through time, we vary the asset allocation to position the portfolios to achieve a higher reward for risk than the benchmark. The risk aware nature of our investment process tends to mean that value is added via the adoption of defensive positioning when risk is high, which reduces loss exposure.

For MLC Index Plus portfolios we are maintaining a relatively defensive orientation, this is through adjustments made to the fixed income strategy (which have been reduced in magnitude) and allocation to the real return strategy. We continually test our thinking, and we retain high conviction in the appropriateness of this positioning but recognise that the period of compressed bond yields could be prolonged.

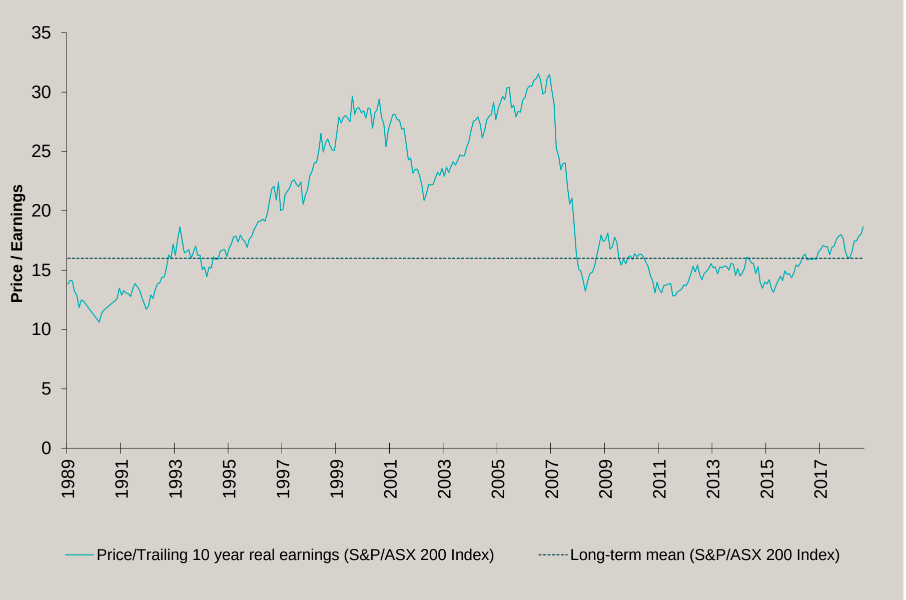
Here is a summary of the positioning of the MLC Index Plus Balanced Portfolio. As we made a number of changes to the portfolios' target allocations during June and July, the positioning is provided at 31 July 2019.

	MLC Index Plus Balanced Portfolio target asset allocation at 31 July 2019			**Comment**
	Under	**Benchmark**	**Over**	
Australian shares	•			This is a small underweight position.
Global shares (unhedged)			•	We continue to be modestly overweight foreign currencies (underweight the AUD), with an overweight allocation to unhedged global shares at the expense of hedged global shares. Foreign currency provides diversification as global share markets and the AUD tend to move in the same direction. Not hedging some overseas assets can help insulate the portfolio from losses if share markets fall. This overweight has added value and we have recently reduced exposures.
Global shares (hedged)	•			
Global property securities		•		Retain benchmark allocation – the benchmark allocations are underweight versus peers.
Cash			•	To reduce interest rate risk we've maintained an overweight to cash and underweight exposure to Australian and global bonds. Cash also provides optionality to swiftly adjust exposures to other asset classes. However, lower cash rates erode the positive aspects of this exposure and we've therefore reduced allocations.
Fixed income – all maturities	•			Underweight to longer duration bonds to reduce exposure to interest rate risk. While the potential for further falls in bonds yields is less than the potential for yields to rise, this position has been challenged this year and underweights have been moderated. We're continuing to review and positions may be re-set if yields move lower.
Fixed income – short maturities			•	
Australian inflation-linked bonds		•		This allocation to inflation-linked bonds includes exposure to both short and all maturities duration inflation-linked bonds. The portfolios are underweight all maturities exposure, and overweight the short duration exposure which protects against rising inflation through less interest rate risk.
Real return strategies			•	Overweight to the real return strategy (ie simple real return strategy) is in part a response to low return potential and high risk of mainstream asset classes. The defensiveness of the real return strategy has enabled the portfolio to maintain shares at close to benchmark weight.

Asset class indicators

Commentary on the main asset classes follows.

Chart 6: Australian shares

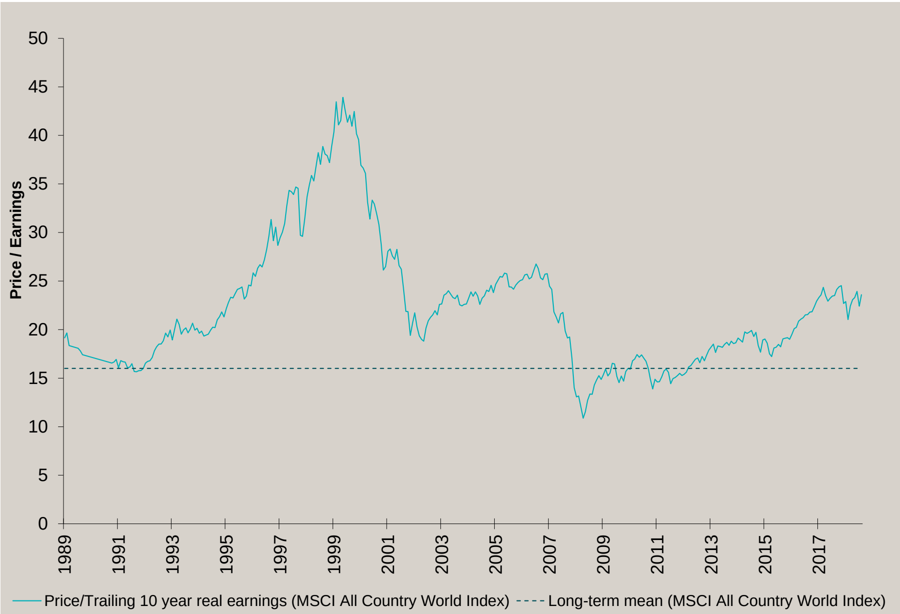


Source: Global Financial Data.

Australian economic data has been subdued. A weak housing market and slow retail spending have been the key concerns. Australia's economic growth came in at only 1.8% in the year to March 2019 while consumer inflation was only 1.3%. Given this soft activity and inflation data, the Reserve Bank of Australia (RBA) cut the cash interest rate by 0.25% to 1.25% in June. Another RBA interest rate cut followed in July.

Australian shares posted an exceptionally strong return of 8% for the quarter. Essentially the benefit of lower interest rates countered the key concerns over the health of the Australian consumer and the housing market. A rebound in the Communication Services (12.7%) and Financial (10.9%) sectors were notable contributors.

Chart 7: Global shares



Source: FactSet.

Global shares (unhedged) made a very strong return of 5.1% over the past three months to June 2019. This was an encouraging performance but came with considerable turbulence during the quarter. There were robust share gains for April and June which managed to counter May's sharp declines. The positive quarterly global share returns were primarily driven by soothing comments from the American and European central banks suggesting the potential for lower interest rates over coming months.

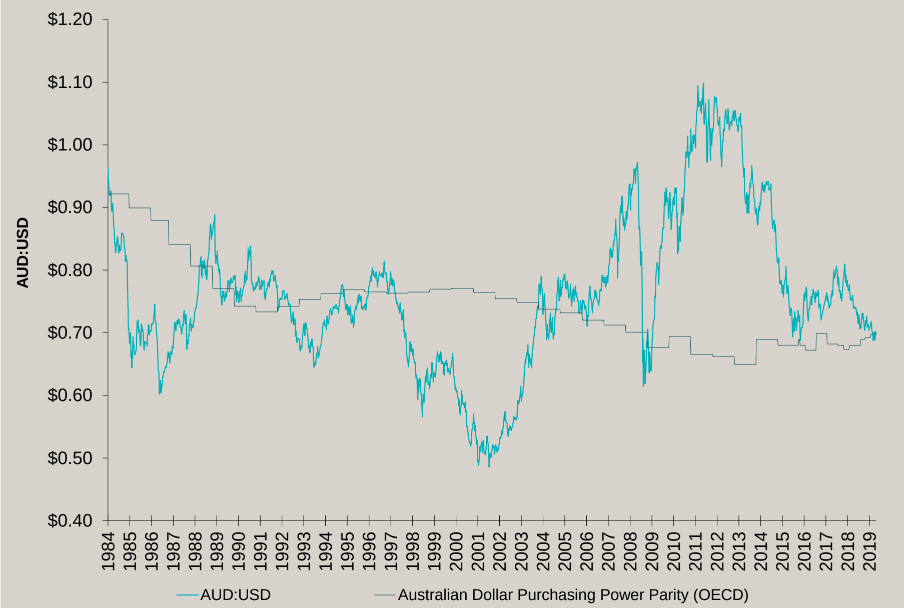
US shares made record highs in June with expectations that slowing global growth and muted inflation pressures would allow the Fed to lower interest rates. Trade tension between the US and China moderated at the end of June with US President Donald Trump and China's President Xi Jinping signalling a truce on tariffs and a resumption of negotiations.

European shares also benefitted from the signal that lower interest rates are likely. However political concerns over Britain's pending exit from Europe (Brexit) and subdued economic data have constrained European shares compared to Wall Street.

Emerging market shares posted a solid 2% return for the three months to June. More promising signs that the US/China trade issue could be resolved did help emerging markets, although slowdown signs in China and South American economies constrained share returns.

Asset class indicators

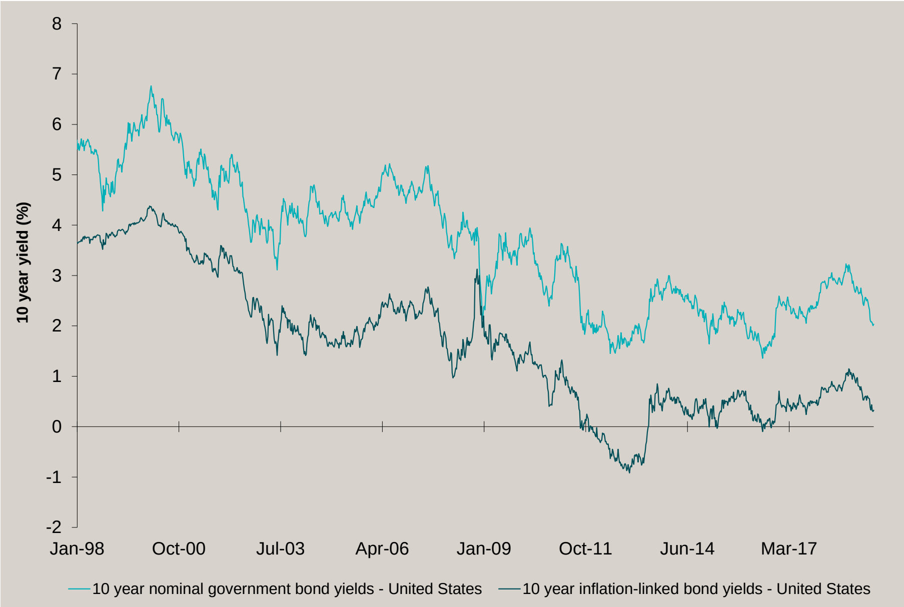
Chart 8: Australian dollar



Source: Bloomberg.

The AUD drifted lower in the June quarter with concerns that a slowing Australian economy would require interest rate cuts by the RBA. The RBA did finally cut the official cash interest rate by 0.25% to 1.25% in June. The negative impact on the AUD of the RBA's decision proved only modest given expectations for an imminent US interest rate reduction. The strong performance by select commodities such as iron ore and gold also provided some support for the AUD.

Chart 9: Global government bonds



Source: Bloomberg.

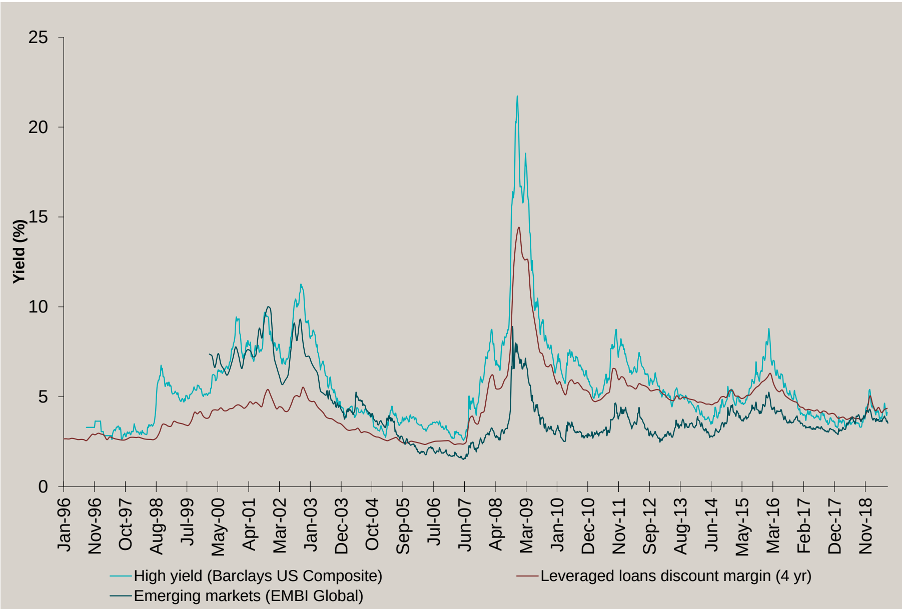
Global bonds (hedged) delivered a strong return of 2.7% for the quarter. Softer economic activity and business survey data in Asia and Europe as well as mild inflation results generated a sharp downward shift in bond yields.

Chart 10: Australian government bonds

Source: Bloomberg.

Australian bonds managed a strong return of 3.1% for the quarter. Soft Australian economic activity data and mild inflation have been particularly supportive of lower bond yields and interest rates.

Chart 11: Non-investment grade bonds



Source: Credit Suisse, Barclays and Bloomberg.

Global high yield bonds (hedged) delivered a solid 1.5% return for the June quarter. Credit markets were buffeted by global growth and trade concerns but managed to remain resilient.

Appendix 1 – Tailored scenario set

Scenario	Probability ranking (previous rank)	Description
Inflationary debt resolution	1 (1)	Forces tending to push inflation higher include monetary and fiscal policy, demographics and populism. Central banks prefer inflation over deflation, and are increasingly signalling a tolerance for inflation above target levels. Fiscal stimulus is the most reliable way to increase inflation. Higher demand for labour where labour markets are tight puts upward pressure on wages which supports demand but squeezes profit margins. Where interest rates (on debt) are lower than the rate of nominal growth, debt burdens can decline.
Three speed global economy (China soft landing)	2 (2)	The world continues to split into three distinct economic growth zones. Emerging markets led global growth with some rebalancing and moderation in China; the US and UK (if orderly or no Brexit) grow at or above trend; while Europe continues to stagnate. Japan struggles to escape stagnation with inadequate fiscal stimulus – the value-added tax (VAT) increase is implemented. Strong USD and AUD vs JPY and EUR.
Extended monetary stimulus *(previously 'Negative nominal interest rates')*	3 (12)	Central banks reduce rates in response to growth weakness. Asset prices rise. Escalation of trade concerns could see increase in fiscal stimulus additionally which is the most effective policy for targeting higher inflation. The mix of real growth and inflation that results are pivotal for market returns. Initially asset prices rise, but nominal growth recovery proves challenging for bond markets.
Slow global growth deleveraging	4 (4)	A prolonged and slow consumer deleveraging. Slowing consumption growth and falling nominal prices extend the deleveraging cycle. There is persistent slow growth and further disinflation in the developed world which spills over into the now highly indebted emerging world. An escalation of trade concerns results in weak confidence and growth.
Inflation shock	5 (6)	Economic growth recovers and the inflation rise (in the US in particular) surprises prevailing inflationary expectations.
Synchronised moderate growth	6 (3)	Japan's and Europe's growth approach trend levels, while the US, UK and China moderate, resulting in a synchronised modest global growth scenario. This scenario may rely on increased fiscal stimulus – this seems least likely in the eurozone at present.
Reform (path to growth normalisation)	7 (5)	A growth upside scenario contingent upon coordinated reforms that address inefficiencies that are idiosyncratic to particular economies (eg labour in the many European economies and Japan, infrastructure in the US, sector contribution to growth in China and structural issues in the eurozone). In light of recent policy initiatives, the US and UK (if there is no disruptive Brexit) grow at or above trend; reforms and stimulus in Japan boost growth to above trend; reforms continue in the eurozone which start to increase growth potential and easing of austerity reduces growth constraints.
Brexit & risk of Eurozone slow disintegration (possibly leading to reform)	8 (13)	Brexit happens. Rising risk of anti-eurozone politicians gaining power, most notably in France with consequent loss of confidence in the stability of the eurozone periphery. A worst-case version of this scenario is most likely expressed in the form of withdrawal of cash from banks in countries where an exit is feared, potentially prompting capital controls and raising questions about the union. The path a **Eurozone slow disintegration** might take is highly uncertain. A positive version of this scenario occurs if existential fears lead to a meaningful policy change including on the contentious issues of closing the output gap which requires a significant shift from Germany, and external immigration. In a best-case situation there is - this possibility is captured in the **Reform** scenario.
Extended risk aversion	9 (8)	A generic scenario to capture prolonged aversion to risk. The probability of a **Eurozone slow disintegration** scenario was previously included in this generalised risk aversion scenario. Potential triggers now include policy disappointment, in particular, a protectionist Trump presidency with rising tension with China.
Australian stress	10 (7)	This vulnerability increases as China's growth slows - a more pronounced slowdown is a potential trigger for this scenario. A consequence of moderating demand for Australia's mineral exports is deteriorating terms of trade which erodes national income. In this scenario, positive real growth could disguise an income recession. Since interest payments must be made in nominal rather than real terms, this stress becomes more acute at higher levels of foreign debt. Where this occurs, coincident with an unravelling of the overextended residential property market, a worst-case scenario is loss of confidence in Australia, which causes funding stress to banks, requiring central bank intervention.
Rise in USD risk premium	11 (9)	Low starting yields are a valuation risk for bonds. Yields could rise to more normal levels even in the context of low growth/inflation expectations. High government debt burdens (UK/core Europe/Japan/US) provide the potential for a bond-vigilante style rerating of sovereign yields that undermines key safe haven currencies including the USD. This is not a likely near-term scenario, but given the low yields and high level of indebtedness as a starting point, there is a risk that the environment could progress to one where apparently safe paper becomes compromised. This in turn increases the cost of funding and reduces corporate activity. At the same time, government spending is curtailed by enforced austerity in an effort to limit yield increases, remain liquid and stay solvent.

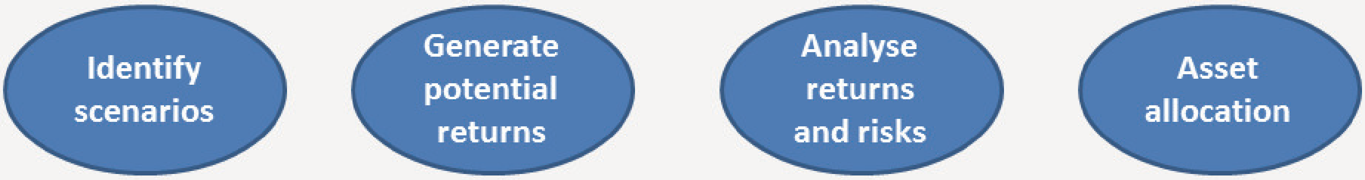
Scenario	Probability ranking (previous rank)	Description
		This may be a precursor to a prolonged stagnation scenario. AUD strong but does not re-visit highs vs USD.
Stagflation	12 (10)	With no clear roadmap for the withdrawal of policy stimulus, the inflation risks from QE may be much bigger than are currently appreciated. In this scenario, policy stimulus is not withdrawn fast enough, perhaps coupled with increased policymaker tolerance for an inflationary workout (due to a much stronger aversion against deflation than inflation) which gets out of hand. Runaway inflation in this scenario is likely to be negative for real growth, which could in turn lead to **Stagflation**. The scenario is likely to involve monetary policy reversals reminiscent of the 1970s. The US economy is getting closer to the point at which an inflationary policy mistake could occur.
Early re-leveraging	13 (11)	Low yields and a period of policy stability prompt a resumption of credit growth in developed economies. Economic growth picks up more quickly than expected and employment rises. Debt imbalances begin worsening again as the developed world quickly re-levers and Asia focuses on investment. This scenario could precede an **Inflation shock**, a second crisis or, if policy makers are nimble enough, a transition to a mild **Inflationary debt resolution**.
Monetary failure	14 (14)	A distinctive and hence important scenario that accounts for the possibility of unorthodox monetary policy to fail. Ineffective or stop-go policy, in the absence of meaningful fiscal stimulation, could result in this scenario that could lead to global stagnation, recessionary or even inflationary conditions. In this scenario investors and consumers lose faith in the ability of monetary policy to resolve critical imbalances within the global economy. Developed market economic expansion is negligible and emerging markets slow down significantly, running the risk of a crash. Shares perform poorly. Commodities fall. Nominal yields rally further and remain low.

Appendix 2 – MLC's market-leading investment process

Step 1

Scenario analysis and portfolio construction

The Investment Futures Framework



- We can never be certain what the future will hold. To adequately understand risk we must take into account the things that *could* happen.
- We do this by building a comprehensive understanding of the possible future investment environments or scenarios that could occur. This includes not just those things most likely to occur, but also unlikely but very distinctive environments (such as financial crises and other 'tail risk' environments).
- The Investment Futures Framework builds a detailed understanding of how returns vary in each scenario. This also provides detailed information about the nature and extent of investment risks, the means to diversify those risks and how these change through time.
- Understanding how returns and risks can change over time means we can determine the best combination of assets, strategies and managers to generate returns while controlling risks in all scenarios - the asset allocation.

Step 2

Implementation

We implement the asset allocation as efficiently as possible to minimise costs.

Step 3

Review

We continuously apply our Investment Futures Framework to determine if portfolio adjustments are appropriate.

We welcome your feedback on this document.

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