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## New Zealand equities and the KiwiSaver king tide

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NEW ZELAND FOCUS

# New Zealand equities and the KiwiSaver king tide

Sam Faulkner, Investment Analyst

Sam Faulkner

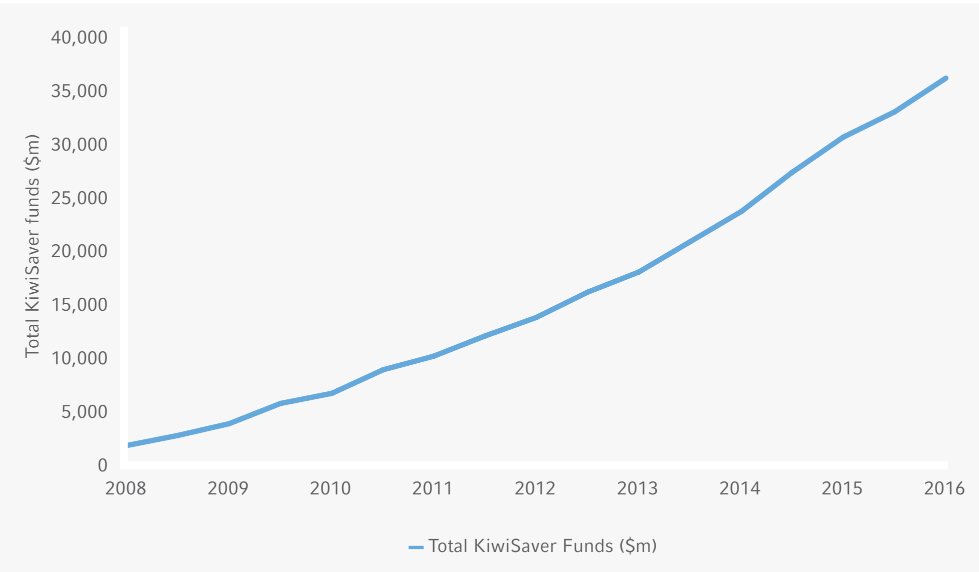
## One of the policy objectives for KiwiSaver was to increase investment in New Zealand's listed equity market. This has certainly happened. However, the rapid growth in KiwiSaver assets has also seen pressure placed on active New Zealand equity managers.

This paper looks at the development of KiwiSaver with a particular focus on asset allocation to the domestic equity market. We also provide some commentary on the potential impact that KiwiSaver may have on the management of New Zealand listed equities.

The rapid growth in KiwiSaver assets has also seen pressure placed on active New Zealand equity managers.

Since June 2008 KiwiSaver assets have grown at a compounded rate of 53% per annum, increasing from around $NZ 1.2 billion to $NZ 35.6 billion as at June 2016.[1]

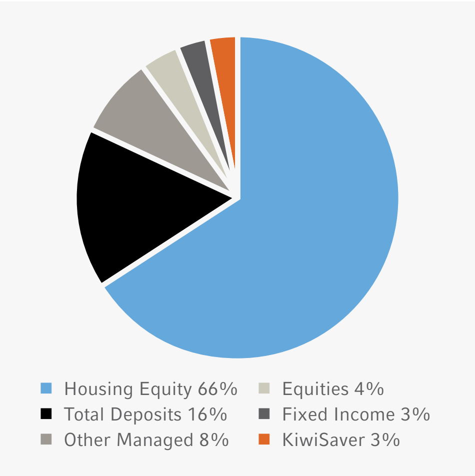
**Chart 1: KiwiSaver total assets ($m)**




KiwiSaver assets are now starting to feature in the make up of New Zealanders' total household wealth. Currently, KiwiSaver funds still represent a relatively small portion of household wealth. If you exclude housing equity, the proportion increases from 3% to 9%.

[1] Morningstar 30 June 2016 KiwiSaver Survey.

**Chart 2: Composition of household wealth**




Source: RBNZ, June 2014

However, KiwiSaver is expected to continue growing rapidly. The New Zealand Treasury forecasts that funds under management will reach $NZ 70 billion by 2020[2] - a compound annual growth rate from the current level of approximately 20%. Assuming the New Zealand residential property market eventually slows down, KiwiSaver funds should start to represent a higher proportion of household wealth and a greater proportion of the capital supplied to New Zealand listed companies.

The increasing importance of KiwiSaver funds to domestic capital markets was pointed out in recent analysis by Treasury.[3] It is challenging, however, to measure the impact of KiwiSaver on domestic equity valuations. This is because stock prices are driven by a number of factors, many of which are not directly observable. Nevertheless, it is useful to consider the changing nature of capital supply and the potential impact it may have on the New Zealand equity market.

## NEW ZEALAND EQUITIES

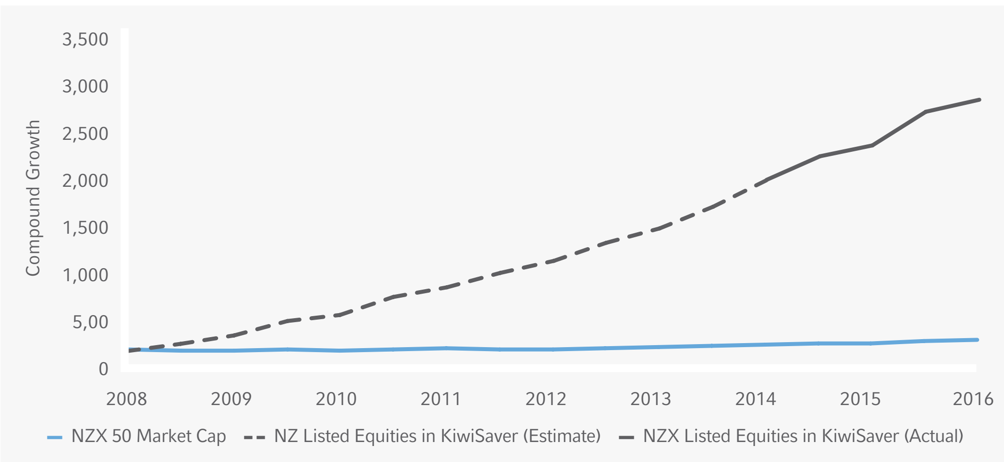
The value of New Zealand listed equities within KiwiSaver funds has mirrored the growth of total KiwiSaver assets. However, the market capitalisation of the S&P/NZX 50 Index has not.

Chart 3 shows the growth (base: 100) in the market capitalisation of the S&P/NZX 50 Index from June 2008 to June 2016 alongside the growth (also base: 100) in the value of New Zealand listed equities held in KiwiSaver funds.[4]

During this timeframe, the market capitalisation of the S&P/NZX 50 Index increased from $NZ31.7 billion to $NZ 74.9 billion, a compound annual growth rate of 11.3%. Meanwhile, the value of New Zealand listed equities held in KiwiSaver

> ...KiwiSaver is expected to continue growing rapidly. The New Zealand Treasury forecasts that funds under management will reach $NZ 70 billion by 2020...

**Chart 3: Market capitalisation of the S&P/NZX 50 Index & KiwiSaver NZ listed equities (base: 100)**



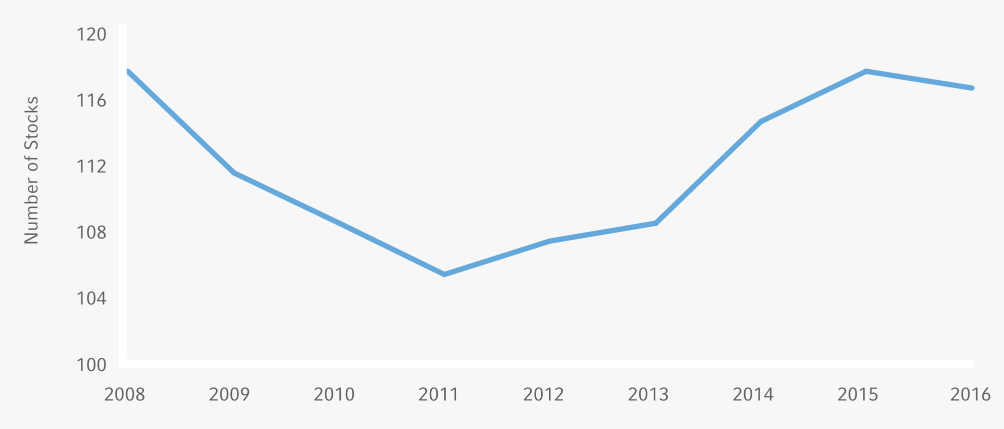

[2] Review of the KiwiSaver Fund Manager Market Dynamics and Allocation of Assets, New Zealand Treasury (2015).

[3] Ibid.

[4] The dotted line is an estimate as the RBNZ survey method changed from June 2014. We estimate New Zealand listed equity holdings based on an allocation of around 7.2%.

> With a significant (and growing) volume of contributions to invest... it will likely become difficult at some level of assets under management to implement an active strategy for New Zealand listed equities.

**Chart 4: Number of New Zealand listed equities**




funds increased from $NZ82.3 million to $NZ 2.4 billion over the same period, a compound annual growth rate of 52.5%. KiwiSaver investors now own approximately 3.4% of the S&P/NZX 50 Index.

At this point, we think it is informative to make a comparison with the development of the Australian superannuation industry. Recent statistics indicate that the average allocation to Australian listed equity in superannuation funds is 23%.[5] This can be compared with an average allocation to New Zealand listed equity of approximately 7% across all KiwiSaver providers.[6]

Total Australian superannuation assets amount to $AU 2,032 billion which implies that about $AU 467 billion is invested in ASX listed companies. This is around 33% of total ASX 300 index market capitalisation. If KiwiSaver assets were to continue to trend toward this level, we believe it would have significant implications for active management in the New Zealand listed equity market.

It is also interesting to note that even though the total market capitalisation of the New Zealand equity market has risen over this time, we see that the total number of securities has remained largely unchanged, despite some new listings in recent years.[7]

If KiwiSaver asset growth continues to outpace the growth in the S&P/NZX 50 Index, as is expected, the proportion of KiwiSaver fund flows relative to the total trading volume will become more material.

This will lead to questions being asked on the appropriate strategic allocation to New Zealand listed equities as well as the merits of active management for such allocations.

## ACTIVE MANAGEMENT OF NEW ZEALAND LISTED EQUITIES

There has been a significant consolidation of KiwiSaver providers since its inception. As at 30 June 2016 the six largest KiwiSaver schemes had approximately 87% of total assets. The largest single provider has just over 26% of total assets.[8] With a significant (and growing) volume of contributions to invest, on top of the usual trading involved in managing an active equity portfolio, it will likely become difficult at some level of assets under management to implement an active strategy for New Zealand listed equities. Above this level the active manager may be considered to be "capacity constrained".

A manager's investment style will certainly influence the capacity constraint level. For example, a small-cap manager would need to invest contributions received into less-frequently-traded stocks. Due to a low level of liquidity, these investments have the potential to move the price of the stock. This is because in order to execute trades, the manager may be required to "cross the spread", which for lower liquidity stocks

[5] Source: ASFA Superannuation Statistics May 2016.

[6] Based on Morningstar 30 June 2016 KiwiSaver survey.

[7] As measured by the number of stocks in the New Zealand All Cap index. Source: FACTSET

[8] Based on AON June 2016 KiwiSaver survey.

tends to be meaningfully larger than for highly liquid stocks. This, in turn, increases the cost of implementing the investment strategy and ultimately reduces its effectiveness and the returns to investors. This effect is magnified as trade frequency (or turnover) increases.

Our current analysis of the institutional market shows that several active New Zealand listed equities managers are already close to, or at, capacity. In aggregate, we estimate their capacity to be around $NZ 10 billion and they currently have assets under management estimated to be around $NZ 9 billion. While it is difficult to determine how much of this money is KiwiSaver related, the growth in KiwiSaver assets has certainly contributed and will continue to put pressure on these managers. It is informative though to consider that institutional New Zealand listed equity assets equate to approximately 11% of the S&P/NZX 50 Index market capitalisation.

Combining our capacity estimate with the market capitalisation of the S&P/NZX 50 Index, we estimate that the average New Zealand equity manager believes it can successfully manage around 1.7% of the total market. Some already manage well in excess of this proportion. By way of comparison, in order to avoid undue negative impact on performance, many Australian broad market equity managers limit their assets under management to 0.75%-1.0% of total market capitalisation. Australian small-cap managers tend to limit their exposure to around 0.5%-0.75% of the Small Ordinaries Index.

## OUR OBSERVATIONS

- Australian equity managers believe it is prudent to restrict their assets under management to a maximum of 1.0% of the total domestic equity market. Australian managers with a small-cap bias, or absolute-return focus, often restrict their assets to a level well below 1.0%.
- Several New Zealand managers already manage in excess of 1.7% of the domestic equity market, and this number is expected to increase as KiwiSaver assets continue to grow.
- This divergence exists despite the fact that the Australian equity market has significantly higher turnover[9] and a lower level of concentration among the largest listed companies[10] compared to the New Zealand equity market.

In summary, New Zealand managers are expecting to manage a greater proportion of a more concentrated market, which has lower overall turnover than their Australian peers.

The first question to ask is whether this is a reasonable expectation on their part? Some managers, we expect, would answer "yes" based on their ability to benefit from poor trading practices and implementation inefficiencies shown by offshore investors. Others might suggest that the highly concentrated New Zealand equity market means that, to be differentiated from other New Zealand managers, they need to explore stock ideas elsewhere. If these ideas are New Zealand small cap stocks, then this further exacerbates the capacity concerns. If the answer is to continue to invest a portion in Australian stocks, then perhaps this is simply an admission that capacity issues are already genuinely of concern. Whatever the response might be, our regular discussions with New Zealand equity managers on this topic indicate that they are very aware of the issues they face around existing capacity constraints.

So what are some of the possible ways to prevent the tide of KiwiSaver's growth from swamping the efforts of active New Zealand equity managers?

New Zealand managers are expecting to manage a greater proportion of a more concentrated market which has lower overall turnover than their Australian peers.

[9] For the year ending 30 June 2016, the ASX300 Index had an average quarterly turnover of approximately A$ 405 billion (29% of market cap). Meanwhile, the S&P/NZX 50 Index had an average quarterly turnover of approximately NZ$ 3.6 billion (less than 5% of market cap) - Source: FACTSET, NZX.

[10] The top 20 stocks in the S&P/NZX 50 Index constitute about 76% of the total index. The ASX Top 20 index is also quite concentrated, but much less so, at around 59% of total index market capitalisation.

| Possible developments | Recent experience |
|---|---|
| The S&P/NZX 50 needs to grow at a faster rate with more new listings. | Since 2008, the number of listed investable New Zealand stocks has been broadly static. |
| New active managers need to emerge. | The number of institutional active managers has fallen and new firms are largely made up of the same names moving around. |
| KiwiSaver providers need to reduce their strategic asset allocation to listed New Zealand equities. | Some schemes have already taken this step. |
| Investors need to move to a passive or semi-passive approach. | Very few viable options for institutional investors are available. |

## CONCLUSION

The growth in KiwiSaver assets along with the uptake by members indicates that the scheme has been a success. But as KiwiSaver continues to grow and the industry structure continues to consolidate, it is worthwhile considering the impact on domestic asset classes and implementation strategies.

One of the policy objectives for KiwiSaver from the outset was to increase domestic investment in the New Zealand equity market. This has certainly happened. However, the rapid growth has seen pressure placed on active equity managers that is not sustainable as more and more of these managers approach capacity constraint levels.

NEW ZEALAND FOCUS

# New Zealand cash returns:

## Having one's cake and eating it as well is nice but how much longer can it last?

Clive Smith, Senior Portfolio Manager


Clive Smith

One of the interesting characteristics of many New Zealand cash funds is that market and regulatory dynamics have, to varying degrees, provided investors with the opportunity to "have their cake and eat it as well". Or to put it another way, to earn the higher returns associated with giving up liquidity while not actually giving up liquidity. Such a situation is nice while it endures but how much longer can it last?

What do we mean by saying that investors have been "having their cake and eating it as well"? Effectively we are referring to the ability of investors to earn a return on more liquid assets which is in line with the return which would be expected from investing in less liquid assets. In the real world, the less liquid cash-like asset most likely to be held by investors is a Term Deposit (TD). In theory these assets are deemed as being less liquid since they can, technically at least, only be redeemed before maturity at a material cost to the holder. The cost of early redemption is, in effect, the cost of liquidity. This can be contrasted to a bank accepted bill (BAB) which can be sold on market for cash at basically the value of the security (i.e., it is liquid as it can be converted into cash at a very low cost). It would therefore be anticipated that, all else being equal, investors in a TD should earn a higher return over a comparable investment in BABs.

Yet interestingly, such a pricing relationship doesn't always hold in practice as the return offered on TDs is driven by different factors to the BAB rate. At a very simplistic level, the return on the BAB is driven by the market interest rate plus an assessment of default risk or expected loss on default. In contrast, for a TD the yield is driven by market interest rates but also, and most importantly, the issuing bank's funding requirements. The result is that the extent to which an issuing bank requires local deposits has a much greater impact on TD yields as the issuing bank, rather than the market, acts as the price setter (i.e., TD yield is determined by how high a yield a bank is required to offer in order to attract the level of local deposits demanded at a point in time). The result is that the different pricing mechanisms can influence the relative pricing of the two instruments. To see the impact of changes in bank funding requirements on pricing relativities it is best to separate the relative yield between BABs and TDs into the pre and post the Global Financial Crisis of 2008 (GFC) environments. Chart 1 below plots the spread (60-day BAB less 60-day TD) from January 2000 to September 2016.

The spread history highlights that BABs yielded more than TDs prior to the GFC as banks increasingly relied upon global debt markets to provide funding rather than local deposits (i.e., there was a lack of demand from banks for local deposits which meant that issuing banks were offering lower rates on TDs). This all changed with the GFC when a range of factors meant that banks needed to start rebuilding local deposit ratios and accordingly started offering

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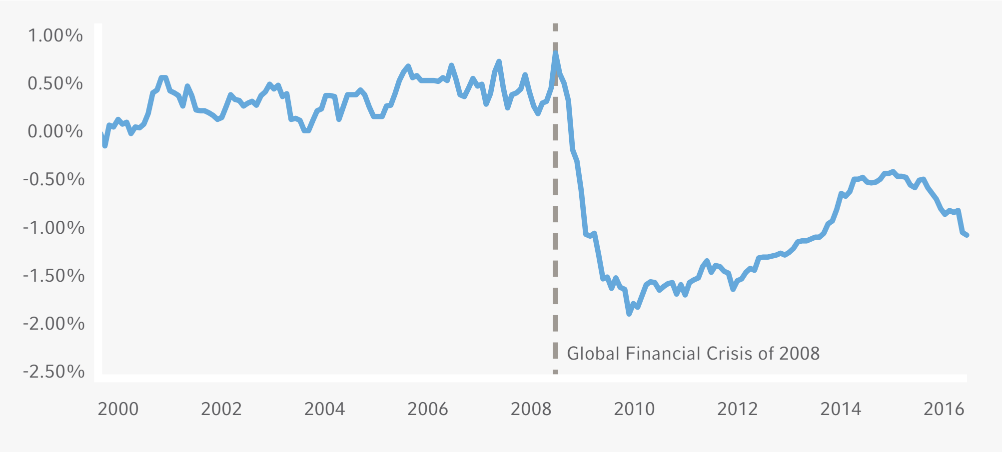
**Chart 1 – Margin: 6 Month BABs less 6 Month TDs**




Source: Reserve Bank of New Zealand Statistics (Tables B2 and B3 Monthly)

materially higher yields to attract funds into local deposits and TDs.

The relative pricing highlights that investors in cash funds, which predominantly invest in BABs to ensure a high level of liquidity, could earn a return comparable to TDs before the GFC (i.e., basically investors could earn TD returns with a greater level of liquidity). But didn't this come to an end with the GFC when TD rates moved appreciable higher than BAB? Not really. The reason for this is in their pursuit of higher deposit ratios, many issuing banks would waive the penalties on early redemption of TDs so as to attract institutional funds. For this reason many cash funds were able to continue offering returns more in line with TDs by investing in TDs even though conceptually the level of liquidity should be materially lower than that for BABs.

The ability for investors to "have their cake and eat it" started to change in late 2014 when the Reserve Bank of New Zealand began making it more onerous for issuing banks to redeem TDs early. With this move it became more difficult for cash funds to earn the TD-like returns without sacrificing some level of liquidity within their cash holdings. To overcome this issue some banks in New Zealand started utilising more structured facilities, such as Constant Maturity Deposits[1], which provided the:

a) longer term funding required by banks,
b) more TD like returns required by investors and
c) option for the investor to access liquidity readily.

While such types of investments currently have regulatory approval, it is unclear for how long this will be the case. Indeed the regulatory changes in late 2014 are, in our opinion, just part of an ongoing global trend among regulators to require issuing banks to be "true to label" when raising funds (i.e., regulators requiring that if a bank wants liquidity relief for raising certain classes of funds then the investors needs to actually be giving up liquidity). This is a trend which we consider will continue within New Zealand and globally as regulators look to provide greater stability to banking systems.

The end result is that due to changing market and regulatory dynamics it is becoming increasingly difficult for investors to earn TD-like returns without giving up some level of liquidity. Put another way, unless the BAB and TD spread relationship returns to pre GFC levels, the days of being able to "have one's cake and eat it as well" may be coming to an end.

In this situation investors may increasingly need to make a choice between higher returns and lower liquidity when investing in cash-related products.

[1] A Constant Maturity Deposit is a rolling deposit with a notional term, of say 90 days, which at any time can be converted into a comparable BAB and sold to the issuing bank to provide liquidity for the investor.

Russell Investments

RUSSELL INVESTMENTS' NEW ZEALAND

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If you have any questions about the conference, please e-mail Jacqui Robertson at:

**jerobert@russellinvestments.com**
**or phone 09 357 6633.**

› Save the date:
**Thursday, 1 June 2017**
**Hilton Hotel, Auckland**

INVESTMENT FOCUS

# Bonds are dead, long live bonds!

Tim Cook, Senior Consultant, Investment Consulting

Tim Cook

Is the multi-decade bond market bull run over? Global yields hit their lowest point in July last year, with the yield of the Barclays Global Aggregate index dropping below 1.1%. By the end of the year the yield had jumped up to 1.6%.[1] In a world where yields are still considered low by historical standards, and in which many investors are expecting yields to rise further, a reasonable investor may ask: what is the role of bonds in a diversified investment strategy?

There are still strong strategic reasons for holding both sovereign and credit exposures in a diversified portfolio.

The base hypothesis to be considered is that bonds remain expensive (yields are still low by historical standards), and the risks are asymmetric (yields are more likely to rise than fall). Furthermore, because the correlation between credit securities and equities is higher than the correlation between sovereign bonds and equities, the former do not provide the same level of diversification benefit.

In order to test this hypothesis one must ascertain the following:

1. Has the role of bonds in a diversified portfolio changed given the current low-yield environment?
2. Does the lower diversification benefit offered by credit securities undermine their role in a bond portfolio?

In this paper, I argue that there are still strong strategic reasons for holding both sovereign and credit exposures in a diversified portfolio. In fact, the strategic rationale for holding bonds is unchanged. Bond allocations have delivered lower-risk returns and diversification benefits (and thus a degree of protection when equity markets declined). Bond exposures have also delivered excess returns over cash and, as such, should remain a significant part of strategic benchmarks.

Nevertheless, tactical considerations (such as current market views and expectations for future performance) might provide an argument for reducing a portfolio's bond exposure. Importantly, however, those expectations need to outweigh the long-term strategic benefits of a bond allocation. As a tactical decision, the size of the reduction would have to be weighed against the inherent risks (be they peer, benchmark or nominal return based) of such a move and scaled by the conviction in the view.

[1] Similarly, yields on US 10-year Treasuries dropped to a low of 1.3%, then climbed to almost 2.6% before settling back at 2.4% at year end.

## WHY HOLD BONDS IN A DIVERSIFIED INVESTMENT STRATEGY?

Traditionally, the reasons for holding bonds in a diversified investment strategy include but are not limited to:

- **Lower risk:** achieved through exposure to lower-volatility securities compared with growth assets (equities in particular).
- **Diversification:** bond securities are not perfectly correlated with growth assets.
- **Protection:** bond portfolios provide diversification benefits when equity markets decline.
- **Strategic benchmarks:** most traditional diversified funds have a benchmark split of growth and defensive assets that defines the relative risk of the total portfolio when compared to other diversified funds along the risk/return spectrum. As such, the benchmark typically defines an allocation to bonds and to deviate from this is to impart a tactical viewpoint.
- **Excess returns:** bond portfolios are, over time, expected to deliver excess returns over cash (cash being the ultimate default defensive asset). The excess return is delivered through a term premium (duration) and, potentially, a credit premium.
- **Peer benchmarking:** there can be significant aversion to peer-relative risk within the defined contribution marketplace (e.g., KiwiSaver). This means there will be a degree of inertia in terms of reducing exposure to an asset class that is expected to underperform as the risk of getting that call wrong is more relevant than the benefit of getting it right.

To justify a move away from bonds (including credit securities), it is necessary to decide whether any or all of the key reasons for holding this asset class no longer hold true. In this paper we consider two of the key reasons for holding bonds in a diversified investment strategy.

Chart 1 illustrates the respective volatilities of equities and bonds over time. Over the period considered, equities have, on average, provided more than twice as much volatility (15%) compared with US Treasury bonds (7%). Bonds therefore remain, and we expect to remain going forward, a less risky asset than equities.

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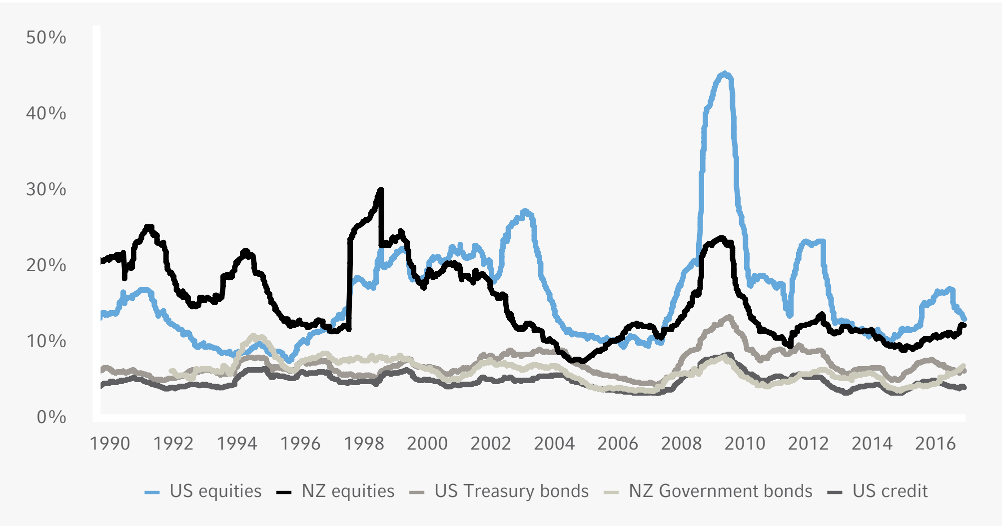
**Chart 1 – Rolling one-year volatilities**



We find that bonds have delivered a lower-risk experience and provided diversification benefits (and thus some protection in equity downturns).

**Chart 2 – rolling one-year correlations**

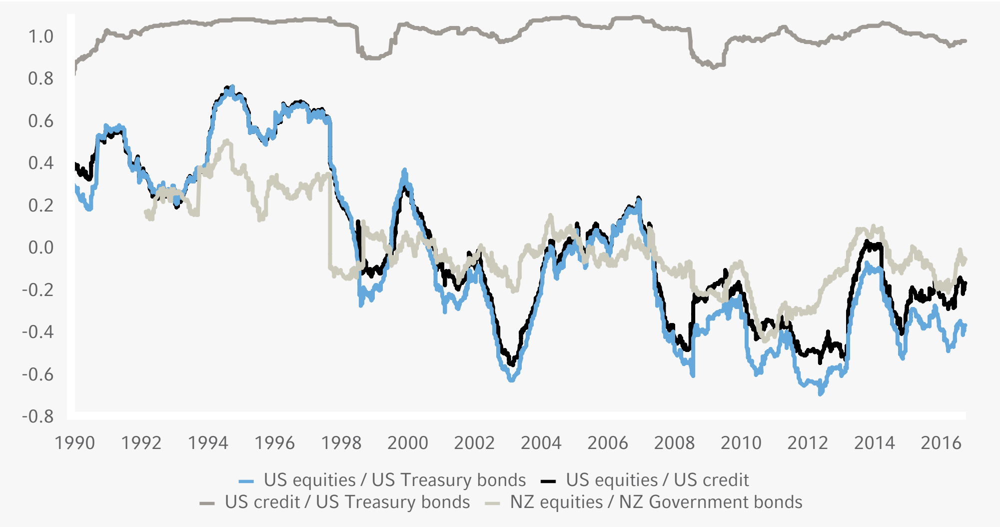



Chart 2 illustrates that the correlation between equities and bonds (both Treasury and credit) has varied from approximately 0.6 to -0.6. Indeed, from 1998 onwards the average correlation between equities and bonds was -0.2. Russell Investments' forward-looking capital market expectations currently assume a correlation of close to zero between equities and bonds.

Analysis of historical returns along with correlations and volatilities (illustrated above), suggests that nothing has changed that would lead us to alter our strategic view for holding bonds within a diversified investment strategy. We find that bonds have delivered a lower-risk experience and provided diversification benefits (and thus some protection in equity downturns).

Bonds have also delivered excess returns over cash and retain a significant role in strategic and peer relative benchmarks. As such, the only rationale for exclusion or reduction must come from current market views and expectations for future performance. Indeed, future performance, and the conviction in that expectation, needs to outweigh the long-term strategic rationale that has been outlined above.

## CURRENT MARKET PRICING

While yields have risen from their lows of July 2016, there is a commonly-held view that yields will rise further, which is having the effect of depressing return expectations for this asset class. An expectation that yields will rise faster than implied by the forward curve (the forward curve demonstrating the extent to which yield rises are already priced into the market) could result in an underperformance of bonds versus cash on a forward-looking basis. This underperformance (if it transpires) may not be uniformly spread over time but rather incurred over a short period. The (unknown) timing of this underperformance determines whether the cash drag will be worth accepting.

In addition, whether bond securities – be they sovereign or credit (or both) – are currently overvalued is only half the question. The flipside is that if they are overvalued, where else could you deploy your capital?

Are there alternative asset classes or sub asset classes that offer relatively better value? If there are more attractively valued asset classes, what is the conviction in this valuation and, more importantly, what is the range around that expectation? If there is greater risk, does the expected return make it worthwhile?

Many other asset classes are, like bonds, also fully valued. This potentially adds greater attraction to an opportunistic cash holding, but this again relies on timing and the investor's objectives and risk tolerance.

## IMPLEMENTATION CONSIDERATIONS

It is important to note that many bond managers target an above-benchmark yield to achieve a higher return (all things being equal). This tilt to credit will provide a greater cushion against rising rates and provide some insurance against the market mispricing the level of yields in future years.

## CONCLUSION

All the above suggests that any decision to reduce exposure to bonds (sovereign and/or credit) is not a strategic asset allocation decision but rather a tactical one. The scale of the reduction should be a function of an investor's risk tolerance, conviction in his or her market views and the potential upside. This is related to a fund's objectives and the answer to the following question: what is the scale of the upside relative to the risks and impact of getting the call wrong?

> ...what is the scale of the upside relative to the risks and impact of getting the call wrong?

RETIREMENT FOCUS

# Gliding on

George Thomson, Consultant
Andrew Johnson, Head of Asset Consulting

George Thomson

Andrew Johnson

Target date options are designed to provide a 'glide path' asset allocation solution to investors saving for their retirement. The defining feature of target date options is that the allocation between 'growth' and 'income' assets evolves through the life of the fund in a way considered appropriate for a typical investor planning to retire at the 'target date'. Investors simply choose an option with an end date that coincides with their expected year of retirement. The evolution of the allocation between growth assets (typically equities – reduces over time) and income assets (typically bonds and cash – increases over time) is known as the glide path of the option. Determining the correct glide path is critical to the success of a target date solution.

## THE KEY ISSUES

The glide path concept is intuitively attractive. It seems natural for investors to accept greater risk in the earlier years of their career and reduce this as they get closer to retirement. However, determining the most appropriate start and end points of the glide path, and the associated shape of that path, can pose challenging questions for trustee boards and investment managers.

[D]etermining the most appropriate start and end points of the glide path, and the associated shape of that path, can pose challenging questions for trustee boards and investment managers.

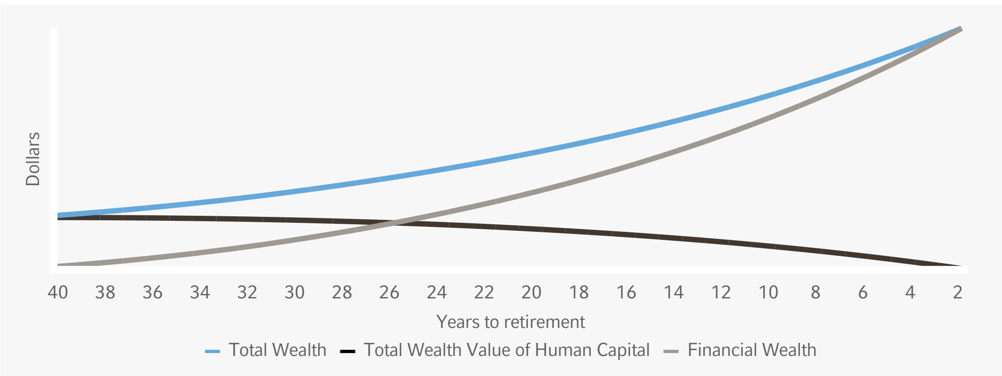
### The objective – aiming to clear the hurdle

The objective is to generate as much financial capital as possible at retirement, subject to minimising the probability that this will fall below some specified level. Russell Investments defines this hurdle level as the amount of financial capital it takes to purchase a lifetime annuity that replaces a given percentage of the investor's income in his or her final year of work. While the annuity market in New Zealand is currently, at best, limited, this framework is still helpful in setting the objective.

### Framework – the 'human capital' model

Under this model an investor's total capital is seen as having two components: financial capital and human capital. This model views an investor's stream of future savings as the cash flows from an asset for which the present value can be calculated – his or her human capital. To illustrate, graduates with many years of savings ahead have significant human capital, and probably negligible financial capital. Conversely, while those nearing retirement may still have many years to live, the value of their human capital in the form of future savings will be much lower than their financial capital. This is illustrated in figure 1.

**Figure 1: Human capital and financial capital**




For illustrative purposes only. Not meant to represent any actual investment.

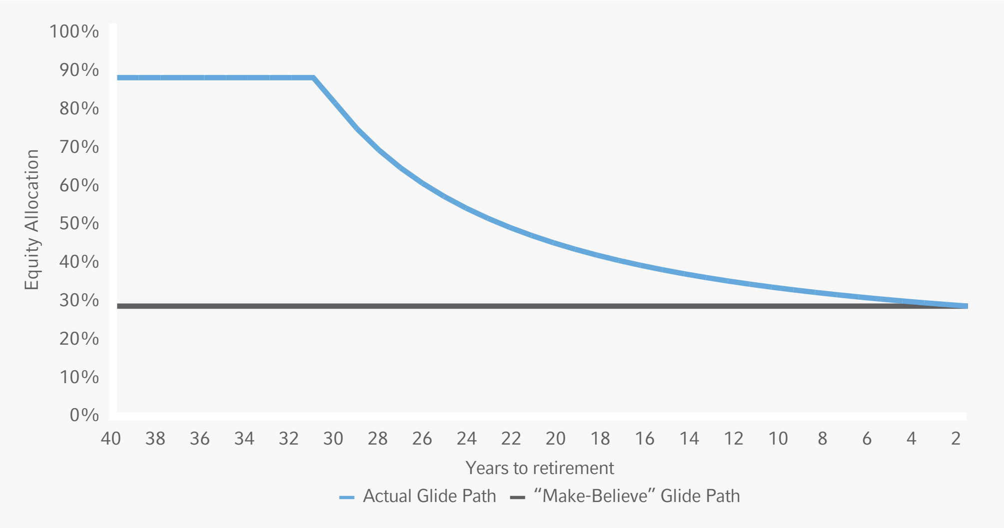
Consider a case where we could swap the stream of our future savings for a lump sum at the beginning of our career and invest this in financial assets for retirement. In the spirit of target date funds, if we had to specify an asset allocation in advance, what would our glide path look like?

Clearly, when a lump sum is invested for a specified period, each period's return has the same influence on final capital as any other. The ordering of returns makes no difference. If we assume the same behaviour of asset returns in all periods, then the only type of strategy that makes any sense is to hold the same portfolio in all periods. Thus, in the case where human capital can be liquidated and invested, the glide path is flat.

Back to our real world problem, human capital is illiquid. Further, for most people, it is more bond-like than equity-like. In this sense, it is akin to an income asset. Given this, we can consider the creation of a glide path as the best mix of assets for an investor's financial capital, given the investor is stuck with an illiquid allocation of income assets (i.e., human capital). The contrast between this and the theoretical case is illustrated in figure 2.

"…[A]n investor's total capital is seen as having two components: financial capital and human capital. … [G]raduates with many years of savings ahead have significant human capital, and probably negligible financial capital."

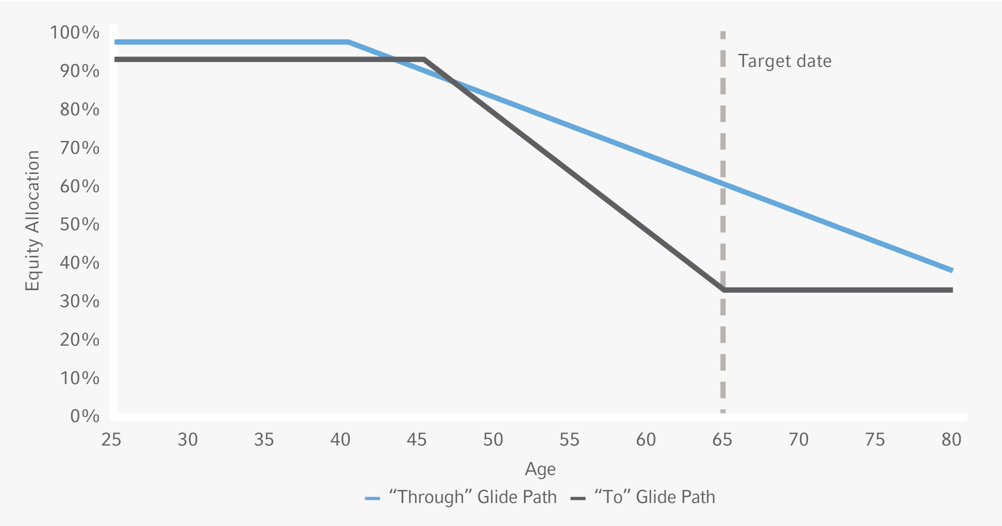
**Figure 2: Actual and theoretical glide paths**




For illustrative purposes only. Not meant to represent any actual investment.

> ...this fact leads Russell Investments to consider that a portfolio should have its lowest allocation to growth assets at retirement.

**Figure 3: ‘To’ and ‘through’ glide paths**




For illustrative purposes only. Not meant to represent any actual investment.

## To or through retirement age?

One of the key questions for those tasked with creating the glide path is as follows: should the investor’s exposure to growth assets reach its low point at retirement or should it remain at an elevated level and continue to reduce after retirement? In other words, as illustrated in figure 3: should our glide path go to retirement age or through retirement age?

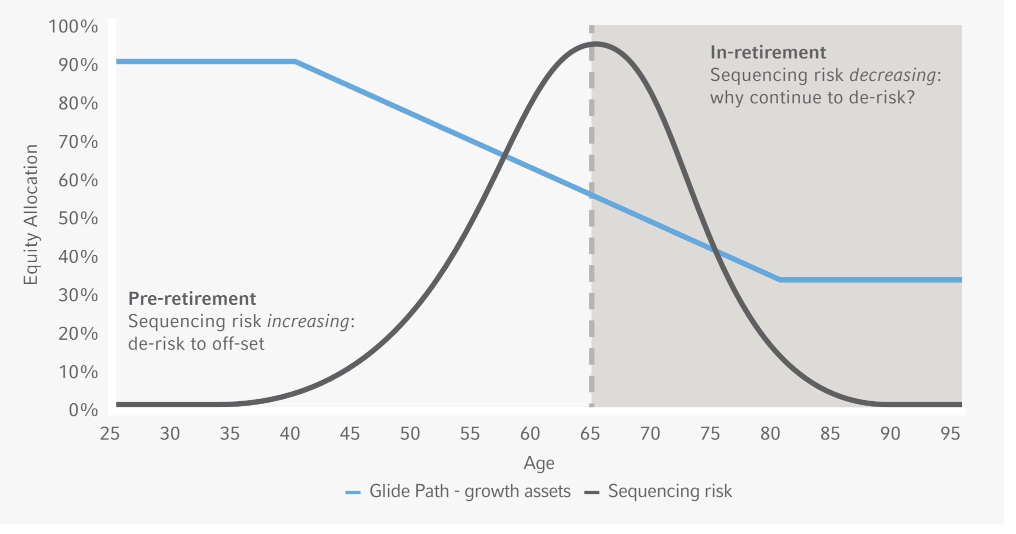
The answer to this question lies in minimising ‘sequencing risk’. Simply put, sequencing risk is about when investment returns occur relative to contributions. For static holdings, the order in which investors receive their returns does not make a difference to the outcome. In contrast, for investors contributing over the course of this period, a large negative return early, when invested capital is small relative to contributions, has a significantly smaller impact on final capital than does that same event occurring later, when invested capital dwarfs ongoing contributions.

This is not simply a matter of time horizon. Sequencing risk is a crucial consideration whenever cash flows matter. That is particularly true when the movement of cash flows changes from incoming (contributions during career) to outgoing (withdrawals post-retirement). In fact, sequencing risk is greatest on the day of retirement (see figure 4). It is this fact which leads Russell Investments to consider that a portfolio should have its lowest allocation to growth assets at retirement. In other words, we are firmly in the to retirement age camp.

## The need for a ‘typical’ participant – one size can’t fit all

A single asset allocation strategy cannot be ‘best’ at addressing every individual situation. For example, factors such as marital status, number of children, general state of health, and home ownership can lead to a wide range of appropriate asset allocations.

**Figure 4: 'Through' glide path and sequencing risk**




For illustrative purposes only. Not meant to represent any actual investment.

That said, appropriately defining the typical participant enables a target date provider to understand better the potential risks and rewards associated with differing strategies. Some key variables that define the investment problem include: target retirement date, pattern of intended contributions, projected ending salary, income needed for 'comfortable' requirements (defined as a percentage of ending salary), and attitude towards risk and return.

## CONCLUSION

Target date solutions offer an attractive and superficially simple solution for defined contribution retirement savings vehicles. However, the devil is in the detail and, in order to achieve the best outcome for investors, there are several critical areas in the design of a glide path which must be considered. These include defining a clear objective, being mindful of the importance of sequencing risk, and having a clear concept of the typical investor.

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INVESTMENT FOCUS

# Demographic changes impacting investors

## The balance of power is shifting

Angie Santo-Walter, Director, Non-Profits and Healthcare Systems

Angie Santo-Walter

Angie Santo-Walter sat down with equity market experts Patrick Kaser of Brandywine Global and James Johnstone of RWC Partners to discuss the impact of demographic changes on developed and emerging markets. In the course of that discussion, four big trends emerged that will impact the kinds of opportunities investors should consider for their portfolios.

For investors, finding companies and sectors that will lead the charge in adapting to these significant demographic shifts is going to be essential to creating value in the future.

### 1. DEVELOPED ECONOMIES ARE GETTING OLDER.

The baby boomers are beginning to retire, and there are not enough younger workers to maintain the level of productivity and economic value this generation created. And because it's so big in size, this ageing population isn't going to go quietly into the night—it is going to drive technological innovation in a wide range of industries such as healthcare, pharmaceuticals, transportation, and financial services.

For investors, finding companies and sectors that will lead the charge in adapting to this significant demographic shift is going to be essential to creating value in the future. For example, the management at one BMW power train plant in Dingolfing, Germany, devised a project in 2007 to enhance productivity while complementing older individuals' needs. The plant's production managers launched a pilot production line specifically designed for older workers—in fact, the average age of workers on this line was 47. The managers introduced adjustments such as increased lighting, flexible magnifying glasses, customisable workstations, and robots that performed harder manual tasks. BMW found that the productivity on this pilot line was similar to that of other lines staffed by a mix of younger and older workers.

Investors could gain access to these kinds of companies and opportunities by incorporating thematic managers into their portfolios. One such theme is called the "ageing west." This theme is primarily expressed through innovative early-stage biotechnology companies that hold promise for developing new vaccines and treatments.

### 2. EMERGING ECONOMIES ARE GETTING YOUNGER.

Population growth in Asia and Africa will continue to put pressure on scarce resources such as food staples and potable water, as well as energy, healthcare, and microfinance infrastructure. In addition, as the populations in emerging economies expand and begin to gain economic power, they are going to spearhead their own technological revolutions. Younger generations are already adopting the time- and labour-saving solutions of more developed markets to move up the value chain without having to go through the same industrial revolution to get there. For example, in 2007, Vodafone's Kenyan subsidiary launched M-PESA, a mobile banking and money transfer service, which millions of Kenyans now use to deposit, withdraw, and transfer money, and even pay for goods and services. This mobile-money revolution has made a dramatic impact in

Kenya, empowering the poor and boosting local economies with access to finance.

These innovations will continue to create investment opportunities in energy, technology, healthcare, infrastructure, and other industries that the burgeoning middle class is going to demand. For example, investors could consider managers with deliberate off-benchmark allocations to frontier markets like Kenya, as well as Bangladesh, Nigeria, and Vietnam. These countries are still very young in terms of economic development, and as such they provide significant diversification and upside to investments in developed and emerging markets. Intrepid investors who venture into these far-flung economies could potentially reap high rewards, as these are typically in the early stages of growth. At the same time, enthusiasm should be tempered; the likelihood of extreme volatility, illiquidity, and political instability remains in these remote markets, which are excluded from standard global indices.

## 3. WORKING WOMEN ARE SHIFTING THE BASE OF ECONOMIC POWER.

In both developed and emerging economies, an increasing number of women in the workforce means more women are taking control over some of the decisions about where money is spent. In emerging economies, women tend to spend their income on food, medicine, and education for children. In Bangladesh, according to Johnstone, four million women now work in the country's growing textile industry, and their resulting surge in purchasing power and choices has contributed to a fall in the infant mortality rate from 100 out of every 1000 deaths to 30 out of every 1000 deaths.

In developed economies, more women in the workforce means dramatic changes in workplace policies and healthcare needs as well as saving, investment, and consumption patterns. For example, women tend to hold a greater share of their portfolio assets in lower-risk investments, and they tend to purchase more services than men. Many are also delaying marriage and childbirth, ascending to senior management positions, and graduating with more advanced business and law degrees than men. Single women also tend to be first-time home buyers more often than single men.

All these changes mean that, in both emerging and developed economies, investors should be on the lookout for opportunities to invest in companies that are adapting to this power shift.

## 4. IMMIGRATION WILL PLAY A CRITICAL ROLE.

Developed economies will need to think long and hard about their immigration policies if they want to retain their economic power over the coming decades. Declining birth rates in these economies means there are fewer workers to feed the economic engine, and immigration is potentially one way to maintain the purchasing power these economies currently have.

Because the tectonic plates of global economic power are shifting, now is a good time to think about where you want to be positioned over the coming decades. Nations that have growing populations, favourable immigration policies, and an increasing number of women in the workforce are poised to be the world's major economic players in the decades to come. This includes markets such as Bangladesh, Colombia, India, Indonesia, Kenya, Nigeria, Peru, the Philippines, and Rwanda. And China, the biggest emerging market of all, is slowly but surely steering its economy's course from low-cost, capital-intensive exports towards services and consumption-driven GDP growth.

Investors should seek to diversify their overweight, developed markets equities portfolios by also investing in leading emerging and frontier markets. That way, a portfolio is truly global and better positioned to help weather uncertainty than those that are more concentrated in their bets. We believe that, over time, the combination of population growth and technological innovation will create lots of new and exciting opportunities for investors.

Because the tectonic plates of global economic power are shifting, now is a good time to think about where you want to be positioned over the coming decades.

GREAT MOMENTS IN FINANCIAL HISTORY

# Circa 1900: George Washington Carver puts the "E" in ESG

Leola Ross, Ph.D., CFA, Director, Capital Markets Research

Leola Ross

### RELATED READINGS

http://agriculture.mo.gov/gwc.php

http://www.acs.org/content/acs/en/education/whatischemistry/landmarks/carver.html

http://nationalpeanutboard.org/the-facts/georgewashington-carver/

http://www.pbs.org/wgbh/amex/reconstruction/sharecrop/sf_economy.html

http://www.biography.com/people/george-washingtoncarver-9240299#tuskegeeinstitute

The post–U.S. Civil War Reconstruction era, which by some counts lasted until the Great Depression, was marked by dramatic changes in agricultural practices in the American South. Agriculture, and cotton in particular, was still a dominant economic driver in the South, the nation's "Cotton Belt." However, these crops faced many challenges, including declining yields.

George Washington Carver, a prominent African-American intellectual and well known for fostering positive change in agricultural practices, was born into slavery, mostly likely around 1858-9, and emancipated in 1863. By 1896 he had earned a master's degree in bacterial botany and agricultural science from Iowa Agricultural College in Ames, Iowa. He is remembered as an acclaimed botanist, inventor, artist, agronomist, teacher and mentor. A longtime professor, director of the Agricultural Experiment Station in Tuskegee, Alabama, and author of an educational bulletin distributed to small farmers, Carver has been credited with revolutionizing agricultural practices in the Cotton Belt to incorporate crop rotation and fallow land periods.

While crop rotation seemed new to the Cotton Belt, the practice actually had origins circa 6,000 BC in the Middle East, and a seventh-year "Sabbath of the Land" is part of Old Testament teachings.[1] The practice evolved throughout the Dark and Middle Ages in Europe. Essentially, what George Washington Carver did was reintroduce crop rotation with the backing of a deep scientific explanation as to why it would increase yields, and identify crops—e.g., soybeans, peanuts, sweet potatoes and pecans—that would be ideal for rotation.

Ultimately, crop rotation is a practice of taking care of the earth, with benefits that include a non-chemical method for balancing soil nutrients, managing fallow periods and controlling pests, weeds, plant diseases and soil erosion. Indeed, crop rotation is a common practice in modern organic farming, with increasing science behind its effectiveness. (Recent research has even linked crop rotation and crop diversity as being vital to honey bee populations and hive health.[2])

An interesting side-note is that Dr. Carver was greatly admired by Henry Ford (the industrialist who put the "S" in ESG). The two men became friends and collaborators in experiments involving, among other things, peanut oil as a potential fuel source.[3] Ford himself dedicated the George Washington Carver Museum at Tuskegee Institute and installed an elevator in Carver's home to aid him in his final years.

While planters benefited enormously from Carver's environmental research, Carver himself did not benefit economically from his work. Indeed, his tombstone reads: "He could have added fortune to fame, but caring for neither, he found happiness and honor in being helpful to the world."

[1] Leviticus 25:2-7

[2] See the Agricultural Defense Coalition website for information and articles on honey bee declines: http://agriculturedefensecoalition.org/content/honey-bees-otherpollinators.

[3] http://www.history.com/this-day-inhistory/george-washington-carverbegins-experimental-

RESEARCH FOCUS

# Russell Investments' research from around the globe


## IT'S NOT PERSONAL, IT'S BUSINESS

**By: Tamara Larsen, Head of Private Markets Research, Alternatives**

We believe that non-financial and financial goals can co-exist. However, implementing such an approach takes time, professional expertise, innovative thinking and deep access to potential investment opportunities that align with investors' desired objectives.

In this paper, we describe our approach and experiences with implementing an impact investment mandate (focused on private asset classes) for an institutional client.


## TWO EFFECTIVE RISK MANAGEMENT STRATEGIES FOR VOLATILE MARKETS: TAIL-RISK HEDGING AND DOWNSIDE PROTECTION OVERLAYS

**By: Tom Fletcher, Managing Director – Overlay Services**

In today's volatile world institutional investors (including superannuation funds) should consider downside risk protection strategies. These risk management tools are designed to reduce the frequency and magnitude of capital losses due to severe market sell-offs.

While hedging generally comes at the price of a reduced expected return, protection from the most problematic outcomes can allow an investor to retain enough investment exposure to meet long-term wealth goals with a lower risk of failure relative to that key objective. This paper discusses two specific approaches for structuring protection programmes: tail-risk hedging and downside protection overlays.

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**Russell Investments**
PO Box 105 191
Auckland
09 357 6633

russellinvestments.com/nz