

## Edition 18, 7 June 2013

### This Week's Top Articles

- **Spending guidelines for retirees and endowments** *Justin Wood*
- **Could your kids accidentally hijack your retirement?** *Alex Denham*
- **How much income tax do you pay?** *Ashley Owen*
- **Surviving in a fat-tail world** *Mariska van der Westen (I&PE Magazine)*
- **What do bond and equity yield differentials tell us?** *Norman Derham*

### Spending guidelines for retirees and endowments

#### **Justin Wood**

Most Australians become reasonably comfortable matching annual spending to annual income with some provision for saving throughout their working life. On retirement they face a very different and frightening problem, how to determine spending each year from a pool of savings that must last 20-30 years?

Investment income is typically far more volatile than wage income and the market value of investments can fluctuate substantially. For example, in 2009 many retirees through a combination of spending and falling market prices ended the year with around 20% less savings than at the start of the year. Some decided to cut their spending significantly, while others kept spending at a similar rate in the hope that market values would recover.

One solution is to pass this risk onto someone else through the purchase of an annuity. A life annuity, a defined benefit pension and the taxpayer-funded age pension all offer retirees the opportunity to continue spending from a reasonably stable annual income. However, most retirees currently drawdown their super as an allocated pension or withdraw their super as a lump sum to manage their retirement spending privately in conjunction with the age pension. This article discusses a spending rule that might help those retirees who pursue these options.

Not-for-profit entities with endowment savings face a similar problem. How should they determine annual spending over a long horizon when investment income and the market value of assets fluctuate substantially from year-to-year. The Yale University Endowment Fund has developed a

spending policy that is a useful model for local endowment funds and also may be useful for retirees.

Under the Yale policy, the target long-term spending rate is 5.25% of the Endowment Fund's market value each year. So if the Fund is worth \$20 billion, the annual target spend is just over \$1 billion. However, in any given year, Endowment spending is determined by:

- \* 80% of the previous year's spending, plus
- \* 20% of the 5.25% long-term spending rate applied to the market value of the Endowment two years prior
- \* The calculated amount is then adjusted for inflation over the prior year
- \* A constraint is imposed of at least 4.5% and no more than 6.0% of the market value of the Endowment two years prior.

This combines some spending stability with some responsiveness to changing market conditions. To quote directly from Yale:

*"The Endowment spending policy, which allocates Endowment earnings to operations, balances the competing objectives of providing a stable flow of income to the Operating Budget and protecting the real value of the Endowment over time. The spending policy manages the trade-off between these two objectives by using a long-term target spending rate combined with a smoothing rule, which adjusts spending in any given year gradually in response to changes in Endowment market value." (Yale University Financial Report 2011).*

Some comments on the spending policy:

- The target long-term spending rate of 5.25 per cent reflects Yale's past 20-year real return from the fund (the return above inflation) and the fact that Yale University has an indefinite horizon. Retirees may want to deplete their capital over their expected lifetime, or they may want to leave capital as a legacy or retain a buffer for risk management reasons. Also, in the current investment climate, they may not have the same confidence that they can earn as high a long-run real return as Yale has done. These factors will change the target spending rate.
- The adjustment for inflation is designed to maintain the real value of spending and hence, for retirees, implies a similar standard of living in the absence of any adverse changes in the market value of savings.
- The weights of 80% applied to last year's spending and 20% applied to the value of the Endowment gives greater weight to spending stability over adjusting more quickly to financial conditions. Yale started with weights of 70% and 30% and a retiree could choose these weights or others to suit their own circumstances.

There is a big difference between the drawdown rate from a pension account and the retiree's actual spending in retirement. Retiree spending depends upon their total resources both within the superannuation system and those held privately. The drawdown rate from the pension account might be set using the ATO's minimum annual payments for super income streams. The spending policy might use the Yale model to identify spending guidelines.

Few retirees will spend just because a model indicates that this amount can be spent. In reality, the Yale policy is not so much a methodology for determining annual spending, but rather a warning flag when the unavoidable spending requirements of the day – food, survival, medicine etc. – force one beyond the guidelines into depleting one's capital faster than planned. It would be a signal to tighten one's belt.

In Australia, the Benevolent Society Endowment uses a rule similar to Yale's in determining the annual distributions from their Endowment to support new Benevolent Society initiatives. The target real rate is the forecast long-term real rate that the Endowment expects to achieve, after investment management fees, and the weightings are 70/30. This provides a relatively stable annual cash flow to fund initiatives with the expectation of maintaining the real value of the Endowment for future generations. Real Endowment growth is achieved through attracting new capital donations, which will support real spending growth on initiatives.

The Yale model has useful elements for Australian entities with endowment funds, for Private Ancillary Funds (PAF) that are used by families, individuals or companies to establish grant-making foundations and also for self-funded retirees. A smoothed, constrained spending policy may even have some applications for governments balancing annual spending initiatives against a background of volatile tax revenues due to rapidly changing economic circumstances!

*Justin Wood is a founding shareholder in Vinva Investment Management and member of the Benevolent Society Endowment Investment Advisory Committee.*

## **Could your kids accidentally hijack your retirement?**

### **Alex Denham**

Picture this: you and your spouse have long dreamed of retirement, and here it is finally. Your offspring have long ago left the nest, living lives of their own. You make plans to travel, buy a boat. You're a self-funded retiree, life is good.

Then disaster strikes. Not to you directly, but to one of your children. Your beloved youngest boy and his wife have had a terrible accident, he's never going to walk again, she didn't make it. They have three little children of their own, now with a disabled father and no mother. This family will never be the same again, and it tears your heart out.

Let's put the emotional side away for a minute and look at the practicalities. If the accident were in a car, Third Party Insurance will not usually cover loss of income, death benefits or mortgage payments, especially for an at-fault driver. See the [Green Slips website](#) for more information. Comprehensive car insurance generally covers damage to vehicles and other property, rather than other personal costs.

This young family has a mortgage and the main breadwinner can't work for the foreseeable future as he is rehabilitating. They had no life insurance, and there is the very real danger they are going to lose their house. Your grandchildren have been through enough, so there is only one thing for it – it is up to you to pick up the pieces.

Cancel your travel plans, you won't be going anywhere for a while. You pay off the mortgage, and become full-time carers of your grandchildren. Your son's recovery is going to be long and painful. And expensive. You will be paying for that too. Welcome to your new reality.

Eventually your son may work again, but chances are he's had a long time out of the workforce and his earning capacity has diminished. He will always need some level of care, the house will need modifications and he will require full-time live in care for his children.

Your retirement is very different to how you planned, and your savings are being depleted by looking after the needs of one of your children. Years pass, your son is working but not earning enough to support the needs of his family. The expenses continue on.

Eventually, your other children are starting to get a bit miffed about the inequity in the situation. Think about the impact this has on your estate planning when your intent was to leave equal shares to your children. They are reasonable people and understand it can't be any other way, but, they say to each other quietly, things would be very different if he and his wife had insured themselves, wouldn't it?

This is obviously a dramatisation, but it can and does happen that when uninsured events happen to adult children, retiree and pre-retiree parents have to step in to help, and often for a very, very long time. It can have an enormous impact on retirement plans and on the entire family.

So how can these terrible situations have a better outcome?

Parents need to open up the dialogue with their adult children about risk insurance. By that I mean the four main types of 'risk' insurance: death, total and permanent disability (TPD), income protection and trauma. It's not something that many retirees think about – their children are independent adults, insurance is their problem, isn't it?

But the scenario above demonstrates that it can very quickly become the entire family's problem. Think about who it is in your life that could pose a threat to your lifestyle in the event of a significant event such as serious accident or illness. This is often described as your 'sphere of risk'.

Death and TPD policies can be purchased through super, so most working families should be able to access those even when their cash flow situation is tight. Just a reasonable level of death and TPD in the above story would have significantly changed the outcome.

Income protection and trauma insurance policies, are *usually* better off being held outside of super, but this should be determined with a financial adviser. Income protection because the premiums are tax deductible if held individually, and trauma because of the preservation rules around superannuation. There are articles written on this topic already on the *Cuffelinks website* ("The Insurance Essentials" by Rick Cosier dated 17 February, 2013) where the ownership question is dealt with in more detail.

Where cash flow is particularly tight, which is very common for a young family, it might seem impossible for them to add to their commitments by paying insurance premiums. Often they understand how important it is and the risk they take by NOT insuring *at least* their income, but keep putting it off. Of course they intend to take insurance out as soon as things ease a bit, but let's face it, that could be years.

An option for you as a retired or retiring parent is to cover the cost of the insurance premiums yourself, at least until the young family can take over. With risk insurance, the younger it is taken out the lower premiums start and stay. As we get older, the starting premiums increase and it gets harder and harder to bite the bullet and take out the insurance.

Whichever way you and your family choose to do it, the important thing is to start talking to your kids and get adequate arrangements into place as soon as possible. Remember this is not about you being an interfering parent; this is about protecting yourself, your spouse, your beneficiaries and your grandchildren. You are their first port of call when things go wrong.

*Alex Denham was Head of Technical Services at Challenger Financial Services and is now Senior Adviser at Dartnall Advisers.*

## How much income tax do you pay?

### Ashley Owen

There's a never-ending debate about income inequality and how much taxes people at varying income levels should pay. This was brought onto the front pages by the Occupy movement, which highlighted in the United States that the top 10% of households had an income 11 times larger than the bottom 10% (sometimes called the 90/10 ratio). In Australia, income inequality is not this extreme, with the top 10% about 4 times larger than the bottom 10%.

This article does not buy into the social or equity arguments about income and tax distribution, but as we approach the end of another financial year where tax has again been high on the agenda, it's interesting to see where personal income tax receipts come from.

A reminder of the current tax scales (from ATO website):

### Tax rates 2012-13

The following rates for 2012-13 apply from 1 July 2012.

Taxable income	Tax on this income
0 - \$18,200	Nil
\$18,201 - \$37,000	19c for each \$1 over \$18,200
\$37,001 - \$80,000	\$3,572 plus 32.5c for each \$1 over \$37,000
\$80,001 - \$180,000	\$17,547 plus 37c for each \$1 over \$80,000
\$180,001 and over	\$54,547 plus 45c for each \$1 over \$180,000

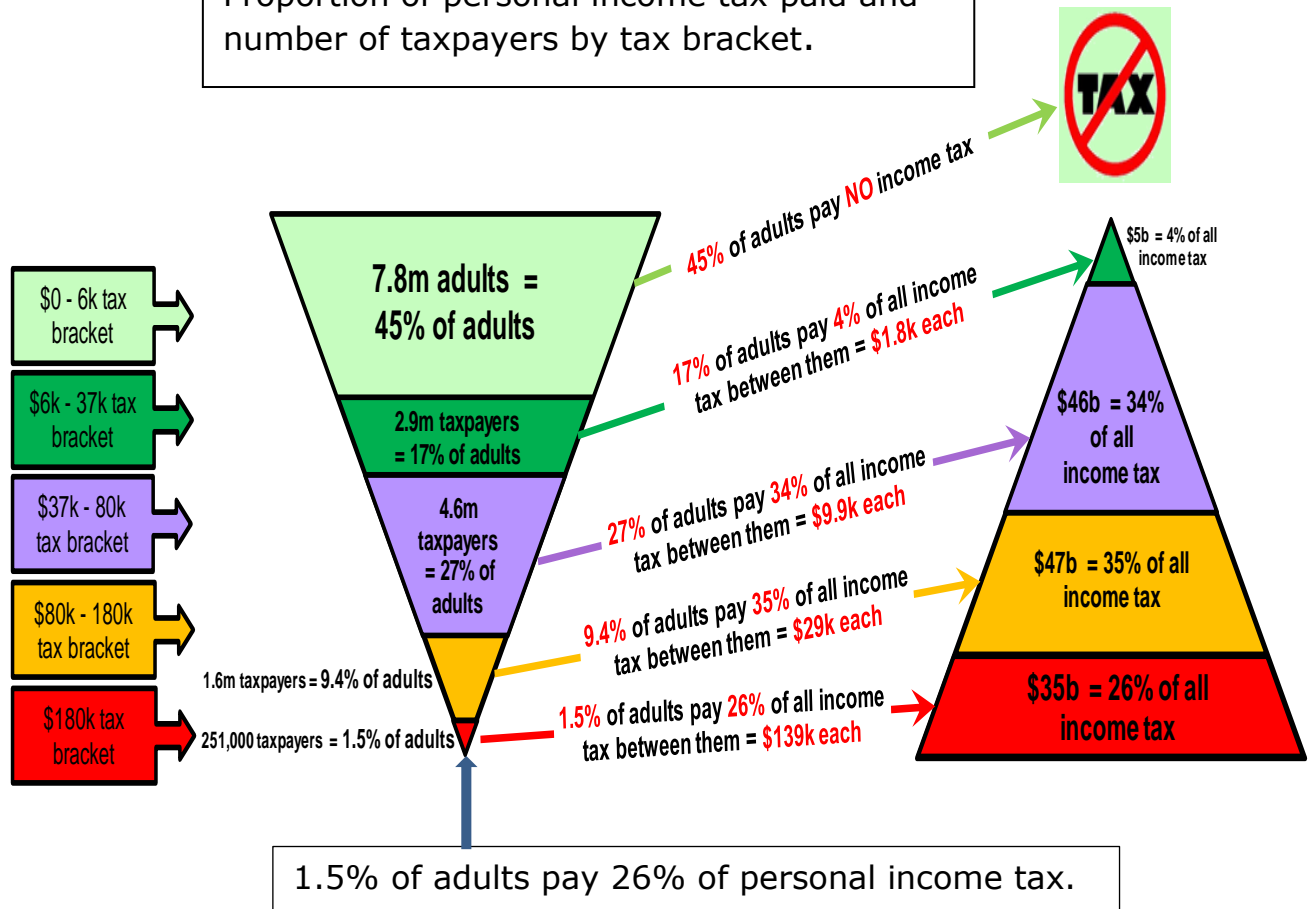
The above rates do not include the Medicare levy of 1.5% (see [Guide to Medicare levy](#) for more information).

The latest available statistics on numbers and amount in each tax bracket are from 2010/2011, when the bottom tax scale cut out at \$6,000. In coming years, there will be far more people paying no tax than indicated in the diagram below. The top marginal tax rate for taxable income over \$180,000 is 46.5%, the same in both reporting periods.

The following graph illustrates the amount of tax paid by tax bracket as at 2010/2011, and perhaps the most surprising statistic is the number of people in the bottom category who pay no personal income tax, even when the cut off was \$6,000:

- 45% of all adults, almost 8 million, pay no personal income tax. Another 17% or 3 million pay an average of \$1,800. Therefore, 62% of Australians pay 4% of total personal income tax revenue
- 26% of personal income tax, worth \$35 billion or an average of \$139,000 each, is paid by the 1.5% of adults or 260,000 people who earn more than \$180,000
- in the middle, 44% of adults or 7.5 million, pay the balance, 69% of income tax.

Proportion of personal income tax paid and number of taxpayers by tax bracket.



Source:  
ATO Taxation Statistics 2010-11 (the most recently published data)  
[http://www.ato.gov.au/content/downloads/cor00345977\\_2011TAXSTATS.pdf](http://www.ato.gov.au/content/downloads/cor00345977_2011TAXSTATS.pdf)



Ashley Owen is Joint Chief Executive Officer of Philo Capital Advisers and a director of Third Link Investment Managers.

## Surviving in a fat-tail world

### Mariska van der Westen

According to Nassim Taleb, author of *The Black Swan*, we are living in a fat-tail world where extreme events are common, while our ability to predict them is nil.

One thing is for certain: to survive in a fat-tail world, relying on traditional concepts of probability or risk management is pure folly, according to Nassim Taleb. Our models structurally underestimate tail risks. "You can't measure them and you cannot compute their incidence," he

told a room full of financial analysts in Amsterdam when he visited late last year on the invitation of CFA Society Netherlands. "Worse: fooling yourself into thinking you can measure tail risk will only give you a false sense of security."

Financial market supervisors and regulators aren't much help either. Regulators are no more likely to see black swans coming than the next guy, and they are easily misled besides. "No regulator will ever know the risks as well as the trader, and it's in traders' interest to hide risks in the tails due to moral hazard. After all, 'Wall Street' is richly rewarded when things turn out well, and when things turn out badly the losses are borne by the taxpayers."

To prevent such excesses we could learn a thing or two from the code of Hammurabi, a Babylonian law code dating back to about 1772 BC, Taleb insists. "King Hammurabi understood exactly how to deal with risk. If a house collapsed, costing the owner his life, then the law dictated the architect be brought to death," he said. "Hammurabi had the right idea. Not that I have anything against architects."

In the case of the financial system, the risk of collapse is all too real, as we have seen a few years ago. Taleb believes financial institutions are especially vulnerable to tail risk, not merely because traders are driven by perverse incentives but also because of the sheer size of institutions. "If you throw a mouse, it will continue on its way as if nothing happened. But if you throw an elephant, the animal will break a leg. Scale doesn't just have advantages; there are drawbacks as well. There's nothing wrong with being big, but be aware of how fragile you are in times of stress."

Large-scale, overly efficient and over-optimised systems are more sensitive to shocks than are relatively small, decentralised systems that allow plenty of room for trial and error, Taleb believes. A system in which small mistakes occur frequently is less vulnerable than a system in which huge catastrophic events occur rarely.

### **Measuring fragility**

We live in a world of increasing tail risks – both in terms of frequency and impact – that can be neither measured nor predicted, while slick financial players continue to take risks at others' expense with impunity. A sobering thought. Given this bleak world view, what is a pension fund with AUM of, say, between €10bn and €15bn to do?

"That is a tough question," says Taleb. "But there are some things you can do." It may not be possible to predict the occurrence of a shock, but its impact can be charted. "Fragility can be defined as 'short volatility'. And short volatility can be measured."

Short volatility refers to an option position where the holder incurs losses if volatility rises. At the other end of the spectrum, 'long volatility' benefits if volatility goes up – a phenomenon Taleb has called 'anti-fragility'. Anti-fragile systems are not merely robust in the sense of being able to withstand shocks, they actually benefit from shocks – similar to the way muscle strength is built through exercise.

At the behest of the International Monetary Fund Taleb has developed what he calls "a simple, heuristic method" to measure fragility, based on methods to detect hidden exposures to volatility in option trading portfolios. The approach adds an extra dimension to the existing stress tests. According to the IMF Working Paper presenting this method, most stress tests tend to focus on point estimates for a limited number of scenarios, without examining the change in impact if the scenario gets just a tiny bit worse. The method Taleb proposes explicitly takes this 'change of the change' into account. For fragility does not depend on the losses incurred after one specific shock, but on the accumulation of losses when the situation aggravates.

The idea is, in fact, very simple: run stress tests with various measure points instead of just one and compare the results. Plot the outcomes in a graph. If the line has a concave curvature, this points to fragility. "It shows that you will be hit disproportionately if the shocks get just a little bit stronger. That is what I call fragility," he explains. "What makes this testing method attractive is that the accuracy of your measuring tool does not really matter."



An example: it is all right to measure the height of your child with a household measuring tape that is half a centimetre off the mark." It is not the exact measuring result at a specific point in time that counts; the differences between the measurements are key. All you have to do is put the child against the wall each month, mark its height and write down the number of centimetres. Draw a line through the points of the monthly measurements and as long as it is a straight line, the child is growing steadily. But if the line curves up, the child has a growth spurt. "You are in fact measuring the acceleration."

In Taleb's opinion, a pension fund should measure its fragility in the same manner. "Run these kind of stress tests using three stress factors, and repeat for every driver in your portfolio. I admit that is not easy for a sizeable portfolio. It is a lot of work." Moreover, the method he offers is anything but perfect, but that should not stop us from using it, in his opinion. "After all, life is incremental too, it is bit by bit. At the end of the day, my method is better than what we used to have. This approach may be 'quick and dirty', but it does help you to survive."

### **Adultery as a strategy**

Realising that we are living in a fat-tail world and understanding the fragility of systems can be very useful for investors. Particularly interesting are opportunities that are concave to only one side. "Take air travel, for example. It happens all too often that some incident affects the travel time. But that will always lead to a delay. You never arrive somewhere an hour earlier than planned," according to Taleb. "Arrival times have a fat tail on only one side. If you inject uncertainty into such a system, the mean will rise."

You can take advantage of this situation using what Taleb calls a barbell strategy. The idea is to reduce the impact of adverse events, without limiting the upside potential. This is done by combining the extremes (eg, buying long-term and short-term bonds), while avoiding the vulnerable middle. This makes you more shock-proof: "A barbell approach will make yourself less fragile."

"Nature provides us a good example of this – just look at the so-called monogamous animals, like some birds and the human species. In reality they are not very monogamous at all. And for a good reason: it is very sensible for a woman to marry a dull but reliable bookkeeper, while having a bit on the side with a muscled superstar." The first will be a suitable and reliable husband, while the second will offer top-quality genetic material.

This bipolar approach also applies to portfolio construction: "Marry the accountant. Invest 80% of your portfolio in dull, risk-free assets, but allocate the remaining 20% to aggressive investments. That is much better than investing all your money in average-risk assets. And it leaves you with a far more robust portfolio."

*This article originally appeared in I&PE Magazine (Investment & Pensions Europe), the leading monthly publication for institutional investors and those responsible for running pension funds in Europe. It is reproduced with permission. The original article is [linked here](#).*



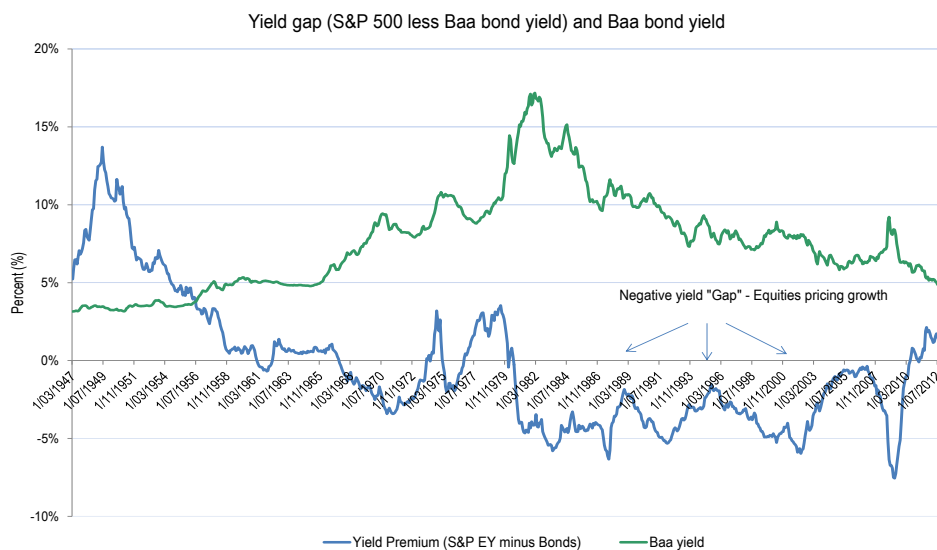
## What do bond and equity yield differentials tell us?

### Norman Derham

With the exception of the immediate post World War II period, history is not kind to equity markets when interest rates are low and not falling. Either interest rates remain low, in which case we have a Japan-type situation, or interest rates rise and we finish up with negative equity risk premiums (that is, the return that the equity market provides over the bond rate is negative). Either way the outcome is not good for equities.

The chart below shows the yield gap or margin between the earnings yield on the S&P 500 and the Baa bond yield since 1947 (when equity yields exceed bond yields, the margin is negative). The chart also shows and the outright level of Baa bond yields. When the yield gap is positive, Price/Earnings are relatively low. When the yield gap is negative (line below the horizontal axis) investors are buying equities at lower yields (higher P/Es) than Baa bonds because they are anticipating economic and earnings growth. Note that earnings yield (E/P) is the inverse of the P/E ratio.

Two trends are apparent. Firstly, interest rates have been falling steadily for the past 30 years and secondly, over much of the same time frame the US has experienced a negative yield gap (i.e. investors are pricing in earnings growth).

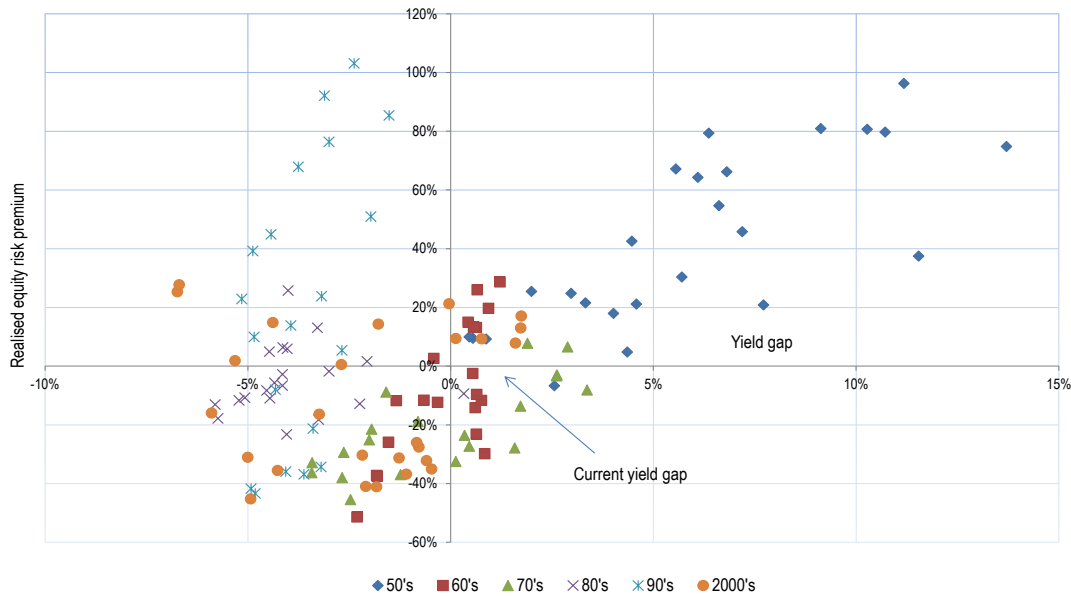


### Does the yield gap matter?

In the following chart, we have compared the yield gap on the horizontal axis and subsequent realised equity risk premiums on the horizontal axis. A positive yield gap results from either relatively low Baa bond yields or low P/E's with the realised equity risk premium being the difference between the Baa bond yield at the time and the subsequent 5 year equity returns.

If equities outperform Baa bonds, a positive equity risk premium exists. A position in the top left hand quadrant indicates negative yield gaps (expensive P/E's or high bond yields) and equity markets performing better than bonds, while the bottom right hand quadrant indicates positive yield gaps where bonds outperformed equities.

Yield gaps and realised equity risk premiums (US by decade - Bi-annual observations)



## A bit of history

There were two decades where equities outperformed Baa bonds: the 1950's and the early 1990's. In the case of the 1950's, it was after a 15 year period when there had been a global depression and a world war. Not surprisingly, there may have been some pent up investor pessimism, but despite this both GDP and earnings grew strongly contributing to the excellent equity outcomes.

The early 1990's was another interesting case where a combination of good GDP growth, after the 1991 recession, produced explosive earnings growth and there was some P/E contraction. Interest rates fell strongly over the period which would have affected both the economy and P/E contraction. Sadly, most other decades haven't been as rewarding.

## What are the lessons?

If history repeats or even rhymes, it's not looking particularly positive for equities despite the low absolute level of interest rates and undemanding P/E's. This is because it is the direction of interest rates rather than the absolute level of interest rates that seems to be a substantive driver of equity returns. Prior to the 1970s, rising interest rates meant poor future equity market returns.

We have just experienced a 30 year bull interest rate market and have no more recent parallels. Within the last 30 years most periods when equities outperformed bonds have occurred when interest rates are 'falling' rather than when interest rates are 'flat'. Interest rates are currently at emergency lows and are more likely to rise than fall from this point. Based on past evidence, equities are unlikely to outperform bonds in this case.

And if interest rates don't rise? The only parallel we can find for a case of sustained low interest rates is Japan and that is not a pretty outcome for equity markets. Equity markets in Japan have underperformed bond markets in 12 of the 15 rolling 5 year return periods since 1993. This translated to a gross equity underperformance of the bond market by a staggering 70%.

*Norman Derham is on the executive at Elstree Investment Management. Elstree is a boutique fixed income fund manager.*

Disclaimer

*This Newsletter is based on generally available information and is not intended to provide you with financial advice or take into account your objectives, financial situation or needs. You should consider obtaining financial, tax or accounting advice on whether this information is suitable for your circumstances. To the extent permitted by law, no liability is accepted for any loss or damage as a result of any reliance on this information.*

*For complete details of this Disclaimer, see <http://cuffelinks.com.au/terms-and-conditions>. All readers of this Newsletter are subject to these Terms and Conditions.*