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What price a pollies' pension?

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If it seems too good....

- From where does the \$1.6m cap come?
- What happened to risk?
- What if you live past the average age?

The Budget

When I watched Scott Morrison being interviewed on Sky Business TV following the May Budget, it took me less than a second to become suspicious. Since I am in pension mode in my SMSF [which I set up when I was General Manager of Quantitative Research & Investment Strategy – then Chief Investment Office – at CBA (I subsequently retired at 60)]; I am the recipient of a reduced defined-benefits pension [after retiring early (at 55) as the Professor of Econometrics at UNSW]; and I've done my homework as an investment strategist, the discussion of the new Super regulations I saw on the telly did not pass muster.

I will focus on two statements from the Treasurer's speech: "A balance of \$1.6 million can support an income stream in retirement around four times the level of the single Age Pension"; and "Commensurate treatment for members of defined benefits schemes will be achieved through changes to the tax arrangements for pension amounts over \$100,000 from 1 July 2017."

In this first article in a planned sequence I will address these two extracts from the Treasurer at a basic level. Subsequently, I will provide more extensive and detailed analyses to provide further clarity in this uncertain world.

When I was about to turn 60 in 2009 I priced an inflation-protected, reversionary annuity that would mimic my university pension – and something similar in style to a politician's pension (but at a much lesser rate!).

When I was writing a series of articles for *Professional Planner* (an industry magazine for investment advisers) and the *Switzer Super Report* in 2012, I sought a price for a similar annuity from another major provider. I found the two quotes to be sufficiently similar not to cause me headaches.

The price of a reversionary, indexed annuity depends on the ages of the pension owner and any spouse – and current economic conditions. I published seven articles in 2012 related to this topic.

Three pensions are relevant to my current analysis:-

- 1) A \$1.6m cap on a tax-free pension fund that will yield an income stream.
- 2) A \$100,000 pa defined-benefits pension.
- 3) Four times the single person pension of \$22,721 = \$90,884.

Mr Morrison has stated that these three pensions are broadly equivalent. I found that the differences between these pensions are so great that no

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reasonable person could draw that conclusion with the evidence I show below – or similarly motivated analyses.

Risks

Finance is largely based on a trade-off between risk and return. But risk includes far more than the volatility of an asset's returns even though we professionals often use the terms interchangeably when the use is clear. The importance of risk cannot be understated, particularly in a long-term investment when further deposits are not allowed.

When I made my decision to retire at 60 years and 6 months, I had analysed the following risks, among others:-

- 1) For how long may I live?
- 2) For how long may my partner live?
- 3) What average returns might my assets produce?
- 4) What volatility might my assets' returns exhibit?
- 5) What changes might occur in inflation?
- 6) What regulation changes (including tax) might occur in super going forward?
- 7) What changes in healthcare assistance might I need over my life (retirement villages, nursing homes, and care not covered by the government, health funds, etc)
- 8) What prospects would I have to go back to work if economic conditions required it?

From various professional medical advice I received (based on my family history and my GP's opinion) I believe I have a material chance of making it to nearly 100 like a number of my close relatives! Of course, the proverbial bus might be just around the corner or the normal illnesses that people get could greatly limit my possible life span. But with a partner only a few years younger and with no super, I needed more than a single person to last for possibly 50 years! The average life span for a man is of no interest to me. I must consider longevity risk as it might impact me.

The research I carried out in 2012 convinced me that the biggest cost to the annuities mentioned above is not longevity risk but inflation risk. I remember being an economics student in 1968 discussing the merits or demerits of inflation at around 2% as it had been

running below that level. Is a little inflation a good thing, we posed? Five years later, inflation was around 30% so the inflation-adjusted returns on many assets were then very, very negative.

Another one of the big risks in managing a pension fund is the cost of being forced to sell down one's assets to draw a pension when the market is doing badly! Adequately allowing for asset price volatility is crucial.

Defined-benefits pensions

I am the recipient of a NSW government defined-benefits pension. The pension is indexed by inflation each year and, if I die before my partner, she gets a reduced pension for the rest of her life. It can be taken in full at aged 60 and at a reduced rate at 55. Therefore, the younger is the spouse, the more valuable is the pension. From the website I gleaned that politicians' pensions are also indexed and reversionary and at a rate of 5/6 of the pension for any surviving spouse. In this sense defined-benefits pensions should be thought of as potentially funding the retirement of a couple.

Since my pension is indexed, it does not matter what is inflation – the government foots the bill. Inflation risk is expensive to insure against as can be noted from the prices of indexed, reversionary annuities.

The Aged Pension

Senior citizens who have insufficient assets and/or income currently receive a full pension of \$22,721 pa as a single and \$34,252 pa as a couple. There have been changes to the way in which pensions are to be increased going forward. At the moment they are indexed by the CPI twice a year.

It is not clear to me on what basis Mr Morrison said that \$1.6m could create a stream of returns in the ball park of four times the single person's pension (\$90,884 pa). As such I performed a statistical experiment to form my own conclusions.

The experiment

It is my purpose to use reasonable assumptions to benchmark these three pensions. Since possible future returns on the \$1.6m are debateable I have used government sources. However, many are talking about a 'new normal' in which future returns will be lower for longer. Therefore, I consider my approach to be conservative.

Of course the defined-benefits pension and the Aged Pension do not need assumptions about asset returns, inflation, age at death, etc. These pensions are guaranteed against changes in such variables.

What price a polities' pension?

ASIC has made available a spreadsheet calculator called Moneysmart for people to be able to calculate an 'account-based pension' for a given asset pool and the risk profile of the individual. I started out by assuming a \$1.6m fund and annual draw-downs of \$90,884 (four times the single pension). The income stream is indexed in this ASIC calculator.

ASIC provides five risk profiles: Growth, Balanced, Capital Stable, Capital Guaranteed and 'Other'. Few would recommend a growth portfolio in pension mode and 'Other' is too ill-defined to be worthy of consideration here.

The assumed rates of return in the ASIC calculator are 8% for Balanced, 6% for Capital Stable, and 5.5% for Capital Guaranteed. It also assumes a rate of inflation of 2.5% and management fees of 0.55%. The base assumptions also include a 1% 'lifestyle' adjustment to allow for the fact that, over time, wages and 'well being' increase by more than the CPI. All of these base assumptions can be overwritten

I started the calculator at aged 60 – as is coded into the base-case. But any age could be used consistent with the fund being in pension mode.

The calculator output shows that Capital Guaranteed option implies that the pensioner runs out of money after 20 years, the Capital Stable after 21 years and the Balanced after 29 years. So why wouldn't everyone choose the Balanced option? Because there are more risks involved meaning that draw-downs are more likely to be necessary in bad times.

If we follow what seems to be 'conventional wisdom' we should opt for the Capital Guaranteed fund which – of course – is expected to return far more than cash and bonds. Current term deposits and investment-grade long term bonds are returning far less than the ASIC assumption of 5.5% in the Capital Guaranteed fund.

So, in what sense is a \$1.6m self-funded retiree comparable to either the four times aged pension retiree or the far more generous politician's pension if he or she can no longer draw the pension after aged 80 (=60+20) because funds have been spent?

The government defined-benefits pensions I am familiar with start at 60 but the aged pension does not start until 65 – 67 as the new rules transition.

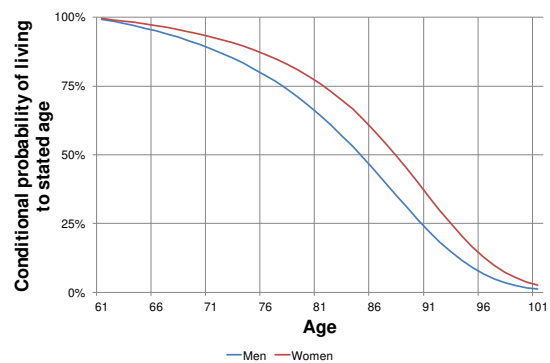
So how long may we live and how does uncertainty make the politician's pension seem so much more desirable?

Life expectancy

The Australian Bureau of Statistics regularly produces 'life tables' that can be used to make some reasonable statements on life expectancy. Of course they are not predictive and so do not take into account improved future health and longevity through diet, medical care, etc.

They show that, for a person who has already reached 60, life expectancy is about 83 for a man and 87 for a woman. For an individual it only matters for how long he or she will live and not some 'average person'. Therefore we must consider the probability of living longer. In Chart 1 I show the conditional (on being exactly 60) probability of reaching certain ages as I calculated from the November 2015 ABS tables.

Chart 1: Conditional probability of life expectancy



To read this table, the gridlines should be helpful. For example, to estimate the median life expectancy (50% of people will live longer) follow the middle horizontal grid-line at 50% until it intersects with the blue line for men or the red for women. By then dropping down to the horizontal axis one can get the 83 and 87 median (conditional) ages at death.

If we repeat the analysis at the 25% grid line, we can see that there is a 25% chance a man will celebrate his 90th birthday and a woman her 93rd. There is a chance of 1.1% that a man will live past 100 and 2.5% for a woman!

So while four times the aged pension and the defined pension politician have a guaranteed pension until death (and possibly a spouse), our \$1.6m man has a 25% chance that he will have no money left in his fund for his last 10 years or more and a 1% chance that he will live for 20 years without his pension but, presumably with the Aged Pension. A woman has about one chance in forty of living with no pension fund for 20 years or more! Of course these results are dependent on the calculator and its assumptions.

But, say, a politician who happens to be a male with a female partner 10 years younger has an indexed pension. That pension may well last for more than 50

years! That is not a fair go compared to our \$1.6m man.

Adding market volatility

Before I go to the next level of complexity, think of someone starting the equivalent of a \$1.6m pension in November 2007 – just before the onset of the GFC. In the next 12 months or so equity markets halved in value while bond markets were also ravaged. And what seemed like sensible financial products like 'Hybrids' also suffered badly not to mention some other structured products and Managed Investment Schemes!

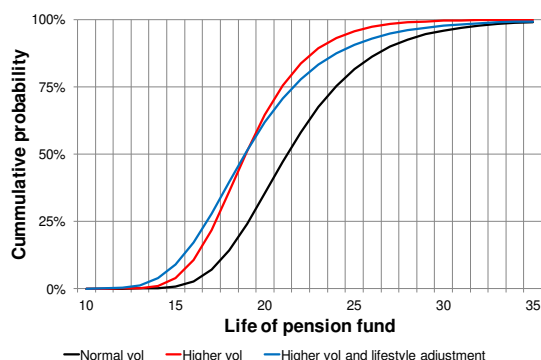
The self-funded pensioner would have been drawing down the indexed \$90,884 pension from a fund with maybe only 75% of its starting value within a year or two. Even though markets have since partially recovered, the monies already withdrawn cannot bounce back since they are then spent.

In order to analyse this type of volatility I have conducted a number of so-called 'Monte Carlo simulations'. While such analysis is beyond the reach of most investors it is commonly used by people in the finance industry.

Instead of assuming the ASIC conditions year after year I created computer-generated random numbers from a bell-shaped curve with an appropriate level of variability. Since the real world is far more complex and scary than this world, I have added an option that also has a chance of 1-in-4 of a more volatile world (better or worse returns). I call this latter option 'higher volatility'.

I assume the fund invests in the ASIC Capital Guaranteed fund at the ASIC-assumed average return. I assume a 'normal volatility' of 5% and a volatility of the 1-in-4 chance of 10%. For reference, the long-term average volatility of the ASX 200 is much higher at about 12.5% and it averaged 25% for the first few years after and during the GFC. I summarise the results in Chart 2.

Chart 2: Life of fund distribution



The black line represents the ASIC assumptions with no lifestyle adjustment and no 1-in-4 chance of higher volatility but only normal volatility. The red line adds in a 1-in-4 chance of higher volatility but not the lifestyle adjustment. The blue line is the 'red-line fund' plus the lifestyle adjustment.

If one were lucky and there were no occasional bad (or good) years (black line), the median life of the fund gets pushed out a year to 21. The other two funds each have a median of 19 years. But the important point is that there is now a 10% chance that the red fund is exhausted after only 16 years and a 1% chance of it being exhausted after only 14 years!

I disagree in the strongest possible terms that a \$1.6m super fund is in any reasonable way equivalent to a pension of four times the Aged Pension. Obviously, drawing down, the defined-benefits assumption of \$100,000 pa would run out quicker than the lesser \$90,884 pa – and that does not even allow for the possibility of a surviving spouse!

If I were presenting to a technical audience I would use more complex assumptions about good and bad years that better reflect reality. For example, big downside shocks are more likely than big upside shocks. And bad years often come in pairs! In that sense, my results are more conservative than I might otherwise have produced.

Conclusions

In my opinion, these results cast serious doubt that there is any reasonable comparability between the \$1.6m cap self-managed fund, the defined-benefits pension of \$100,000 pa and a notional amount equal to four times the single aged pension.

In other work I will present in subsequent reports, I show that a cap in excess of \$3m is necessary for some reasonable degree of comparability.

But Malcolm Turnbull stated on May 25th 2016 that these changes – presumably the cap – only affect 1% of the population. But doesn't that 1% have rights too? But Mt Turnbull's assertion is a gross understatement of the number of these well-funded retirees!

It is not just politicians who may have defined benefits pensions. It also includes people in Treasury, other Federal and State departments, public servants in general, academics etc. If their pensions were priced properly there would be a very much bigger group of people in the \$1.6m dollar/defined benefits group. And that does not allow for recipients of defined-benefits pensions having also funds in superannuation.

What price a pollies' pension?

Why should people in the private sector be disadvantaged when compared to public sector employees and others?

The last pricing of a comparable annuity I did in 2012 for a \$1,000 pw reversionary index-linked pension for a 60 year old couple was \$1,445,000. Do fat cats earn \$1,000 pw? I think not. But \$1.445m is very close to the \$1.6m cap.