So how much should the superannuation cap be?

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What is the cost of running out of funds?

> ➤ Well over $3m is necessary to give similar comfort that public servants enjoy at $100,000 pa.
> ➤ Around $3.2m is necessary to achieve a retirement income of around four times the Aged Pension – the Treasurer's benchmark in the budget.
> ➤ The cap does not have a simple relationship with the pension draw-down and longevity.

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What is the cost of running out of funds?

When planning for retirement with an SMSF one should consider the prospect that one might outlive one's pension plan and have to fall back on the Aged Pension.

That fate does not befall the government's comparator fund recipients – the $100,000 pa defined-benefits pension – as it never runs out. Indeed, the reversionary index-linked pension copes with any and every burst of price inflation; current investment returns and they leave only a slightly reduced pension for any remaining spouse on the death of the pension holder.

In my previous paper in this series, "What price a pollies' pension?" (*Woodhall Investment Research*: June 2nd 2016) I showed that in no way was $1.6m cap equivalent to a $100,000 defined-benefits pension – like politicians and public servants might get. So what is the magic number? $1.6m isn't even equivalent to four times the Aged Pension for single people as the Treasurer's speech would have us believe.

Given that the Aged Pension and government defined-benefits pensions are free from the risks of longevity, inflation, and the return on assets, no risky asset such as a typical SMSF fund can match on those grounds alone. But, to a reasonable

person, there is likely to be a trade-off that would have some merit.

Of course, those who cannot tolerate any such longevity risk can purchase a reversionary, index-linked annuity on the open market. My investigations suggest that the price of such risk aversion is too high for many people but that would be one way to define the appropriate SMSF cap. However, such an amount is greatly affected by the ages of both partners and economic conditions at the time the annuity commences. This age and economic-conditions dependency would make a cap defined by these variables unworkable.

I consider that the SMSF owner invests in possibly managed funds and other assets. In this paper, I take the most conservative investment option from the government (ASIC) calculator called *Moneysmart* I used in my previous paper. I am reporting the results from a risk analysis for varying amounts of a starting pension fund.

I conclude that to provide anything like the comfort a defined-benefits pensioner receives at $100,000 pa, the superannuation cap should be at least double the government's proposal!

Around $3.2m would be needed to put an SMSF pension on a similar footing to four times the Aged Pension and not $1.6m as the Tresurer stated in his budget speech.

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The experiment

I use here the same reasonable assumptions as I did to evaluate risk and return in the first paper of this sequence.

I follow the conservative assumptions from the government calculator labelled Capital Guaranteed. The fund has an expected return of 5.5% pa, fees are 0.55% pa, inflation is 2.5% pa and the lifestyle assumption is 1% pa. I allow for 5% volatility which is low (hence conservative) for the calculator's assumptions but I also allow for a 1-4 chance in any year of a good or bad annual return of double that volatility.

I show the results for five initial fund values (excluding tax): the government's $1.6m current recommendation, double that at $3.2m and three 'round numbers' in between at $2m, $2.5m and $3m. I do this because there is not a simple relationship between the starting fund and the longevity of the fund. A big draw-down when the fund is depleted from market forces has a far more detrimental impact than at other times.

I have collected the basic results from a simulation study in Chart 1. I do not fix the age of retirement so the life of the fund can be added to the investors age when the pension begins. I think it is prudent to consider a start date of 60 as some people cannot work past that age for a number of reasons and it is seemingly the start date for the 'politicians defined-benefits pension' which also reverts to any surviving spouse that the cap fund does not.

To read Chart 1 I would like to start with an example. For a $2.0m fund – the green line in Chart 1 – one can see that there is a 50% chance that the fund will be exhausted where the 50% cumulative probability grid line on the vertical axis cuts the green line – and we then drop down to the horizontal axis at about 25 years. In other words a woman who retires at 60 with $2.0m in a Capital Guaranteed fund has a 50% chance that she will run out of funds at 85 (= 60 + 25) – or two years less than her life expectation was at aged 60.

At 85, the *Australian Bureau of Statistics* 'Life Tables' show that she then has an expected life span of 7.2 more years. That is she has a 50% of living more than 7.2 years after her SMSF has run out. I have not taken the Aged Pension into account but that's all she might be left with after 85.

If I arbitrarily consider doubling the government cap – at $3.2m (black line), the fund has a chance of running out before 32 years of 10%. They are not odds I would like to deal with when my public sector

neighbour over the garden fence is still living well on $100,000 pa (indexed). Again from the Life Tables a woman has an expected 30% chance (at age 60) of running out of funds in her lifetime even with a $3.2m fund!

Chart 1: Life of fund distribution
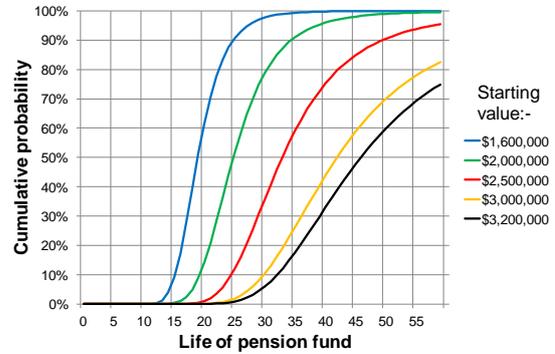
I have also presented the same information contained in Chart 1 in tabular form for those who find that an easier format to follow. For example, the row labelled 95% and the column headed $2m yields a value of 39 (rounded to the nearest whole number). That means that there is a 95% chance that the fund will run out in 39 years (or less) – or a 5% chance that the pensioner will have to live after 39 years with no pension from that source.

Table 1: Life of pension fund with selected probabilities

	Starting fund value				
Percentile	$1,600,000	$2,000,000	$2,500,000	$3,000,000	$3,200,000
1%	11	14	17	20	22
5%	14	18	23	27	29
10%	15	19	24	30	32
50%	19	25	33	42	46
90%	25	34	49	>60	>60
95%	27	39	58	>60	>60
99%	33	50	>60	>60	>60

Notes: life spans are rounded to the nearest whole number and >60 means greater than 60 years.

Conclusions

But what is clear – at least to me – is that to guard against running out of funds too soon – the risk is that people will be forced to invest in riskier investment options which do increase the chance of not outliving their pensions but they also increase the risk of running out at an earlier age.

Obviously the government should have a much higher cap than $1.6m – even more than double that is not quite enough – to put such retirees on a similar footing to the defined-benefits pensioner. Should the SMSF pensioner die with some funds

remaining, the government currently reaps a tax benefit on part of the residual if it goes to someone other than a dependent. If it goes to a surviving spouse – possibly outside of super – that situation is not much different in principle from the benefits that spouse would get from a defined-benefits fund.

In my next paper I will take a look at how hard it is to save $1.6m in an SMSF. 'Spoiler alert' it's very hard and nearly impossible to keep up with the defined-benefits crowd after you retire.