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How long will my savings last?

As a general proposition most people don't have a feel for either their life expectancy or how long their superannuation will last. In this short article we look at life expectancies and how long a retirement fund could last in principle.

The bottom line is this: the more money you have the better you are able to deal with longevity risk - so save as much as you can. While growth assets such shares can assist you in generating greater wealth you cannot control markets. The one thing you can control is your expenditure in retirement and some realistic budgeting can help in making the money you have last longer. Believe it or not, some people actually manage to live on the age pension!

The following table shows the life expectancy rates for men and women between the ages of 55 and 70 years.

Table 1 – Life Expectancy Rates – Australian Life Tables 2005 -07

	Male	Female	Age	Male	Female
55	26.95	30.53	63	20.14	23.35
56	26.08	29.61	64	19.34	22.48
57	25.20	28.70	65	18.54	21.62
58	24.34	27.79	66	17.76	20.76
59	23.48	26.89	67	16.99	19.92
60	22.63	26.00	68	16.24	19.08
61	21.79	25.11	69	15.49	18.24
62	20.96	24.23	70	14.76	17.42

The full life tables can be accessed here

Table 2 shows how long a retirement fund will last given a fixed annual drawdown rate and a fixed effective annual rate of return ie the rate of return is after all fees and taxes. If the effective annual rate of return is greater than or equal to the drawdown rate the fund can last in perpetuity, however, this is not realistic so the relevant parts of the table are left blank.

Table 2 is independent of the amount of money in the fund – all that matters is the percentage of the fund drawn down each year.

Table 2: How long will my savings last?

Effective earning rate (pa)	**1%**	**2%**	**3%**	**4%**	**5%**	**6%**	**7%**	**8%**	**9%**	**10%**
Drawdown rate (pa)										
4%	28.9	35.0	46.9							
5%	22.4	25.8	31.0	41.0						
6%	18.3	20.5	23.4	28.0	36.7					
7%	15.5	17.0	18.9	21.6	25.7	33.4				
8%	13.4	14.5	15.9	17.7	20.1	23.8	30.7			
9%	11.8	12.7	13.7	15.0	16.6	18.9	22.2	28.5		
10%	10.6	11.3	12.1	13.0	14.2	15.7	17.8	20.9	26.7	
11%	9.6	10.1	10.8	11.5	12.4	13.5	15.0	16.9	19.8	25.2
12%	8.7	9.2	9.7	10.3	11.0	11.9	12.9	14.3	16.1	18.8
13%	8.0	8.4	8.9	9.4	10.0	10.6	11.4	12.4	13.7	15.4
14%	7.4	7.8	8.2	8.6	9.1	9.6	10.2	11.0	11.9	13.1
15%	6.9	7.2	7.5	7.9	8.3	8.8	9.3	9.9	10.6	11.5
16%	6.5	6.7	7.0	7.3	7.7	8.1	8.5	9.0	9.6	10.3
17%	6.1	6.3	6.6	6.8	7.1	7.5	7.8	8.3	8.7	9.3
18%	5.7	5.9	6.2	6.4	6.7	7.0	7.3	7.6	8.0	8.5
19%	5.4	5.6	5.8	6.0	6.3	6.5	6.8	7.1	7.4	7.8
20%	5.2	5.3	5.5	5.7	5.9	6.1	6.4	6.6	6.9	7.3

Effective earning rates of 4% or even 5% sound low but the historical record suggests they are quite realistic. Thus if someone had $200,000 to live on and they needed to draw down at 10% pa to have sufficient income with the age pension to live on , the fund would run out after 14.2 years if the effective earning rate could be maintained at 5%pa. If they are a male aged 65 their life expectancy at that age is 18.54 years.

It is also important to remember that the life expectancy is an average for a group of people – there is a significant chance that a particular person will outlive their life expectancy. For a 55 year old male there is about a 54% probability that he will outlive the stated life expectancy of 26.95 years. For a 65 year old male there is about a 50% chance he will

outlive his life expectancy.

A drawdown rate of 4% equates to the minimum annual payment from an account-based pension for someone under age 65. A drawdown rate of 9% equates with the minimum annual payment from an account-based pension at age 85.

Technical References:

(1) Probabilities of survival beyond life expectancy based on 2005-07 Life Tables and appropriate multiplication of relevant values for p_n.

(2) Drawdown rates for account based pensions come from Schedule 7 of the Superannuation Industry (Supervision) Regulations 1994

(3) Derivation of the table
Let:
- the available assets be A
- the drawdown rate be d%
- the effective earnings rate be i% pa
-the number of years be n
If the payments are at the end of the year the following equation holds:
$A = dA [1 – (1+i)^{-n}] /i$
Solving for n gives LOG(i/(d-i)]/LOG(1+i)