



**Actuaries
Institute**

10 Good Practice Principles for Retirement Phase Modelling

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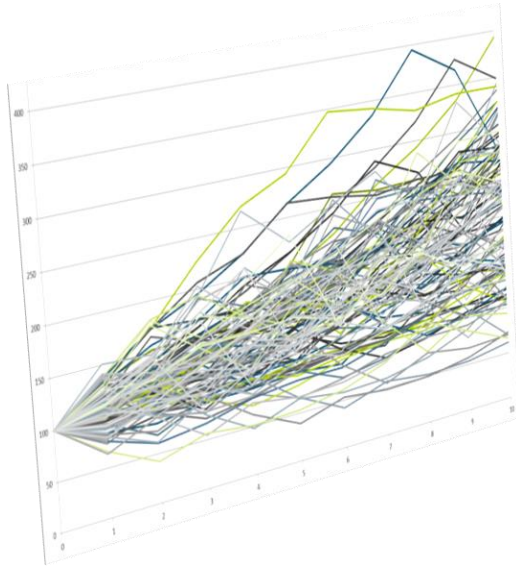


Purpose

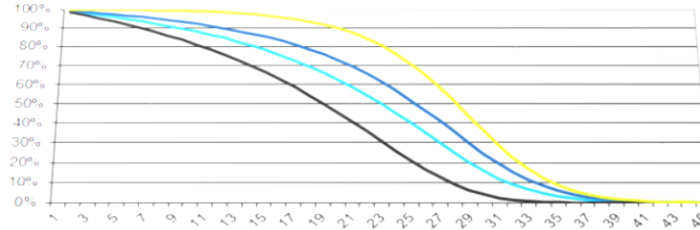
- 10 Good Practice Principles
- Rethink what is required to model the retirement phase properly
- The SPD is seeking feedback on these principles, with a view to producing professional guidance



Retirement decisions?



SURVIVAL PROBABILITIES



Income test for pensions

Your income can affect the amount of payment you receive from us.

on this page

- How the income test works
- Single, couple combined
- Transitional rate pensioners
- Disability Support Pension
- Cut off points

How the income test works

Financial assets are **deemed** to earn income, while there are different ass

What decisions do retirees have to make?

- The 8 key drivers of a retired household's financial outcomes are:

Within the retiree's control:	Retiree has some influence:	Outside the retiree's control:
Investment mix (including home equity)	Timing of retirement	Market performance
Spending level and 'shape'	Undertaking part time work	Inflation
	Lifespan	Tax & social security rules



Principle 1: Models should provide information and outcomes that relate to the household's financial goals: their lifetime consumption needs and wants

- Retirement goals are at household level
- The ultimate outcomes for a retired household are:
 - The lifestyle they can afford whilst they are alive
 - The value of their estate on death



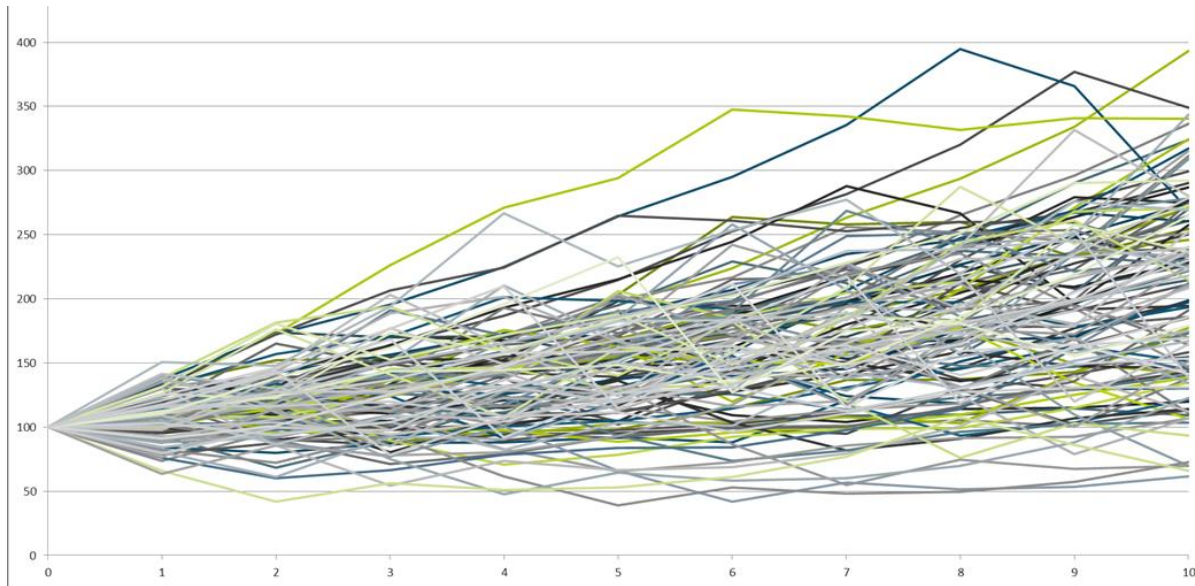
Principle 1: Models should provide information and outcomes that relate to the household's financial goals: **their lifetime consumption needs and wants**

- Retirement advice needs to manage and optimise these



The flaw of averages

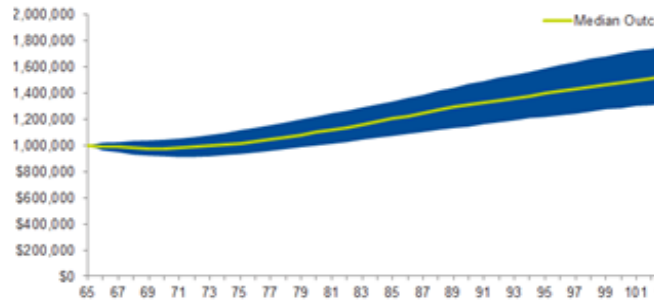
Real returns on Australian equities over every 10-year period 1883-2015



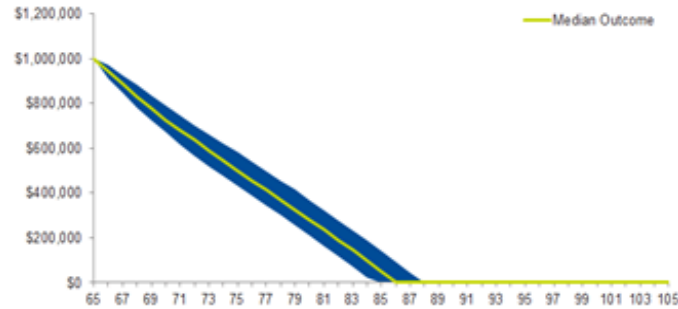


The impact of drawing on a portfolio

Defensive mix, no drawdown

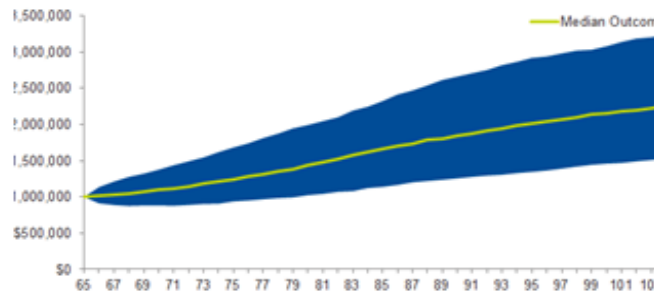


Defensive mix, \$50k p.a. drawdown (indexed)

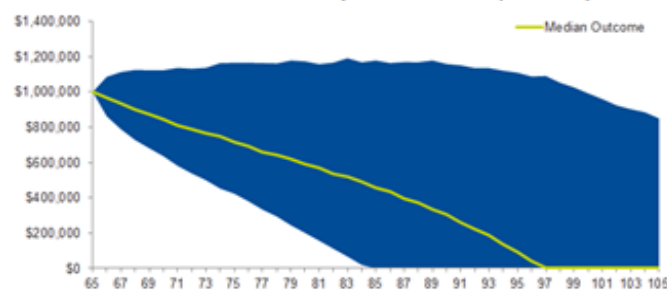


(excluding Age Pension income)

Balanced mix, no drawdown



Balanced mix, \$50k p.a. drawdown (indexed)





Principle 2: Models should be able to demonstrate the variability of future outcomes to facilitate informed trade-offs

- Retirees need to trade off short term lifestyle decisions against the risk of not affording essential living costs in old age
- Using fixed assumptions for returns and age of death is misleading
- 1-year mean-variance optimisation is not sufficient !
- Scenario testing or stochastic modelling is required



Consumption priorities

- It's important to acknowledge that some aspects of a person's lifestyle are more important to them than others
- Items such as luxury holidays and new cars might be acceptable to forfeit in the event of poor market performance
- Every household will have their own form of 'essential' lifestyle they cannot do without
- Once their essential needs are known to be secure, retirees can then explore their ability to afford discretionary items as well.



Principle 3: Models should allow for the fact that some expenditure needs are more important than others, and should be able to confirm that a household's essential lifestyle needs are secure for life

- Lifestyle plans can be time varying. E.g. Active, Passive, Frail phases
- They also change on first death



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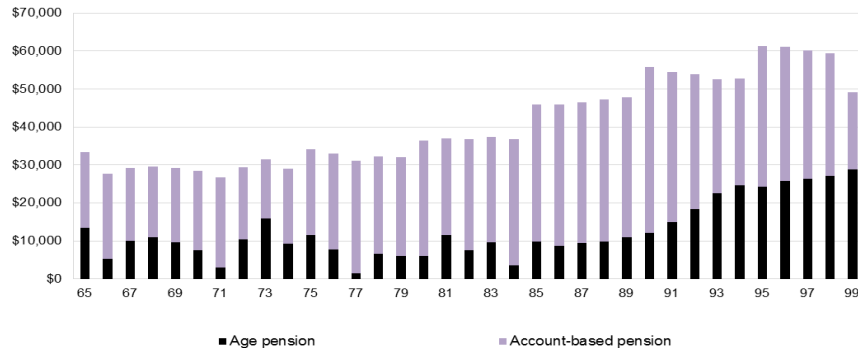
- Where a household's essential spending needs are higher than what's provided by the Age Pension they will need very careful management of their retirement capital to ensure it doesn't run out.



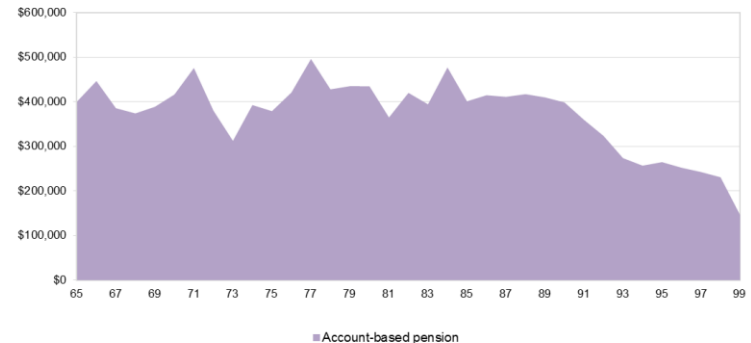
Peculiarities for Australian retirees

- Our Age Pension produces highly irregular cashflows for those impacted by means testing
- Example of the Age Pension (in real terms) if historic returns and inflation since 1975 were repeated (Single female with \$500,000 in a balanced superannuation fund)

Projected retirement income



Projected capital value





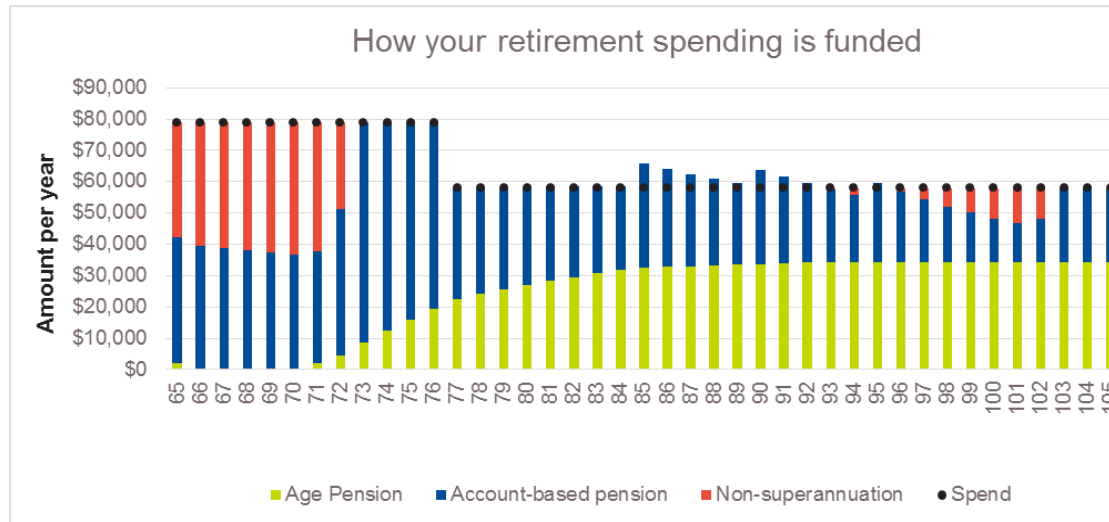
Segment	Description	Most important decision
1. Low assets at retirement	Those with low levels of assets who are totally dependent on the Age Pension	Maintaining some capital for lumpy expenditures and use in emergencies
2. Modest assets at retirement	Those whose essential spending needs are covered by the Age Pension but have assets they can use to optimise their discretionary spending	How to optimise their enjoyment of their assets before falling back on the Age Pension. When to release equity from the home and what this can achieve.
3. Comfortable assets at retirement	Those who want to secure lifestyles that cost more than the Age Pension. Some of that expenditure will be considered essential and some discretionary.	How to balance their discretionary spending against the risk of outliving their assets and not being able to sustain their essential lifestyle needs at older ages. When to release equity from the home and what this can achieve.
4. High assets at retirement	Fully self funded retirees who can comfortably afford expensive lifestyles as well as leave a bequest. Note this is likely to require \$3m+ in assets (over and above the home) to sustain an inflation linked lifestyle over \$100,000 per year.	Generating high returns and balancing their expensive lifestyles with the amount of bequest they leave their children

Depending on how much the Age Pension meets your needs, your focus & required decisions will be very different



Segment 3: Essential lifestyle exceeds the Age Pension

- Most retirees will receive some Age Pension at some stage unless they still have more than \$541,300 on their death bed (over and above the home)

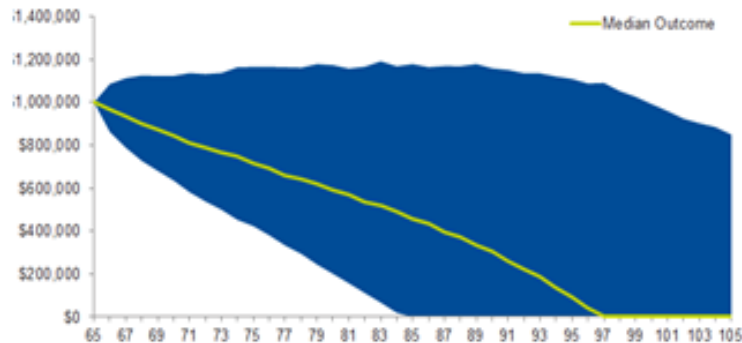




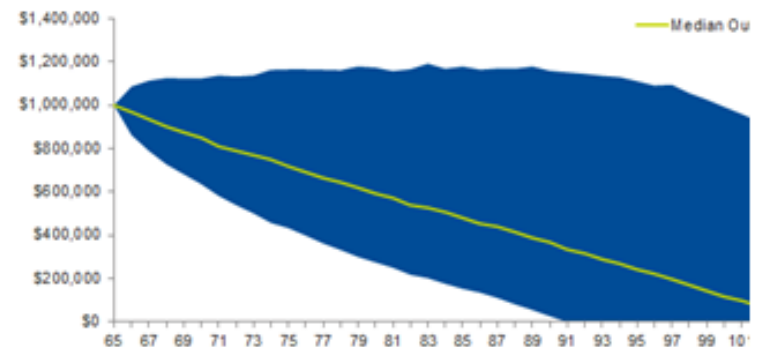
Principle 4: Models should be able to project all significant assets, liabilities and incomes at the household level (including the Age Pension)

- Impact of the Age Pension on our example

Balanced mix, \$50k p.a. drawdown (indexed)



Balanced mix, \$50k p.a. drawdowns reduced by Age Pension Received





Principle 4: Models should be able to project all significant assets, liabilities and incomes at the household level (including the Age Pension)

- Total household assets impact on the Age Pension
- Expenditure needs for two partners is lower than for two individuals



Principle 5: Models should ensure that they take into account all issues that will have a material impact on future outcomes so that informed decisions can be made

Retirees need to see, and be able to change	Retirees need to see, but just trust	Retirees need to trust, but only see if interested
<ul style="list-style-type: none">• Their retirement age• Their consumption goals throughout retirement (profiles of spending)• Their assumed investment mix	<ul style="list-style-type: none">• The range of outcomes they could experience• The likelihood of achieving certain outcomes	<ul style="list-style-type: none">• Fee assumptions• Tax & legislative rules modelled• Asset model assumptions



Principle 5: Models should ensure that they take into account all issues that will have a material impact on future outcomes **so that informed decisions can be made**

- Most retirees will have to make expenditure choices. Each retiree has to have enough information to make sure they optimise their standard of living during retirement.



Principle 6: Models should provide year-by-year projections of expenditure and assets and be able to allow for changes in personal circumstances and expenditure levels in any future year to allow for dynamic behaviours



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Principle 7: Models should use best estimates for all required assumptions. These can be time varying and should take into account current market conditions to the extent possible



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Principle 8: Models should be able to demonstrate the range of uncertainty for the household's lifespan.
Mortality rates should be appropriate for clients of the model and include mortality improvements

- Using capital to support spending requires 'self annuitisation'.

**Age to which different proportions of retirees are likely to live from age 65
(including improvement factors)**

Likelihood of survival	Males	Females	Couples (at least one alive)
90%	73	76	85
75%	81	84	89
50%	88	90	93
25%	93	95	96
10%	96	98	99



Principle 8: Models should be able to demonstrate the range of uncertainty for the household's lifespan.
Mortality rates should be appropriate for clients of the model and include mortality improvements

- Idiosyncratic risk – the risk to which only specific agents (i.e. retirees) are vulnerable
- Systematic risk – the risk our mortality table & improvement factors are incorrect
- Health factors



Principle 9: Models should be able to facilitate annual reviews to take into account the household's actual experience

- Retirees are going to achieve returns that are below average about half the time
- 20% chance doesn't mean it *probably won't happen*. It means it will happen, to 20% of us
- Retired households need to make decisions that are adaptive depending on the experience
- Need to hold buffers to allow for risk but can release these over time and if performance is good



Principle 10: Models should be able to be updated as required to take into account changes to assumptions and legislation

- Market conditions and expectations
- Mortality tables and improvement factors
- Legislation which impacts the financial situation of retirees



Why actuaries?

- Modelling expertise
- Ability to explain complex financial matters
- The Actuaries Institute: professional standards & disciplinary process
- Ability to apply a control cycle
- International connections



Conclusions

- Shield retirees from the complexity but focus on the decisions they have to make and their goals & outcomes
- Risk is a key part of their decision making
- Retirement is very 'actuarial'
- Further work
 - Feedback
 - Sophisticated scenario testing techniques
 - Health factors
 - Metrics to nominate how important different futures expenditures are to them



Feedback

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**Financial
Services
Forum**



Reimagine The Future

16-17 May 2016
Grand Hyatt Melbourne

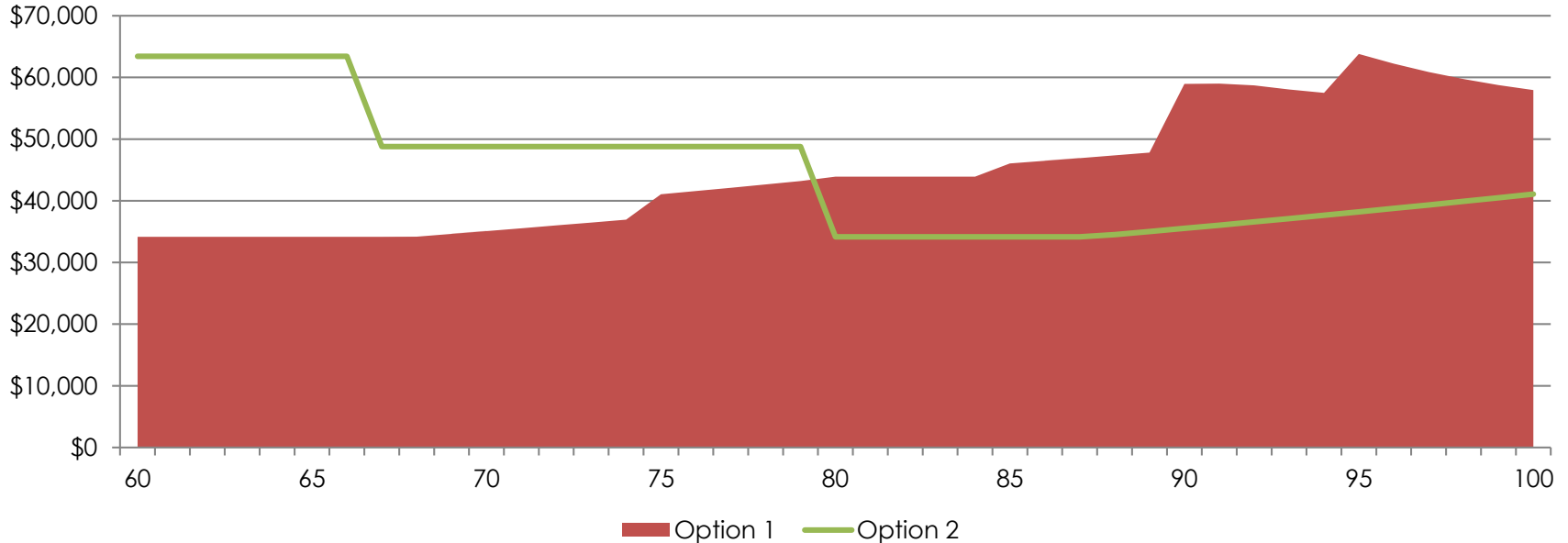


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A Deterministic Approach

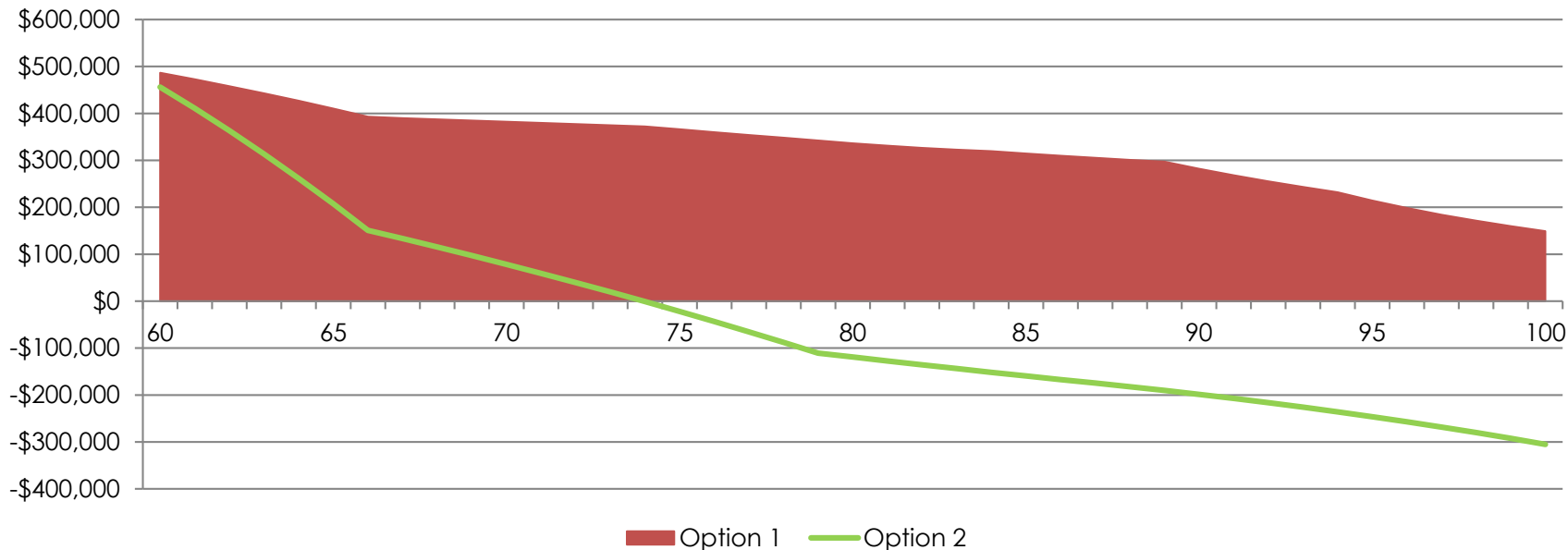
Discounted Total Income





What happens to other assets?

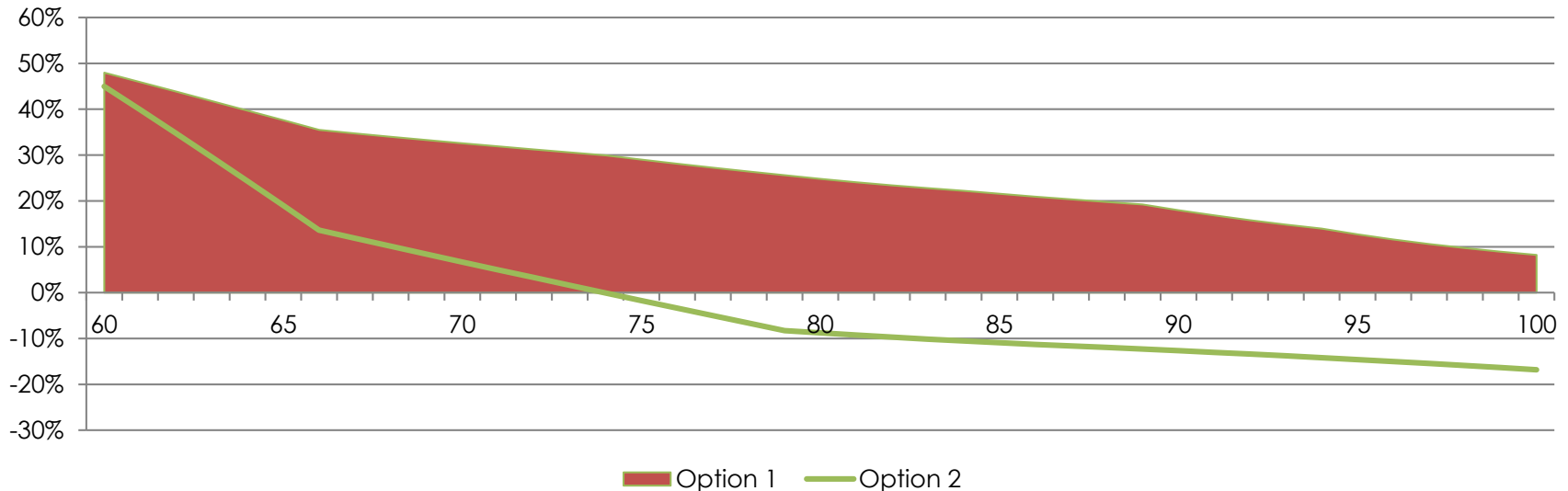
Discounted Other Assets Value





What happens to total assets? - 1

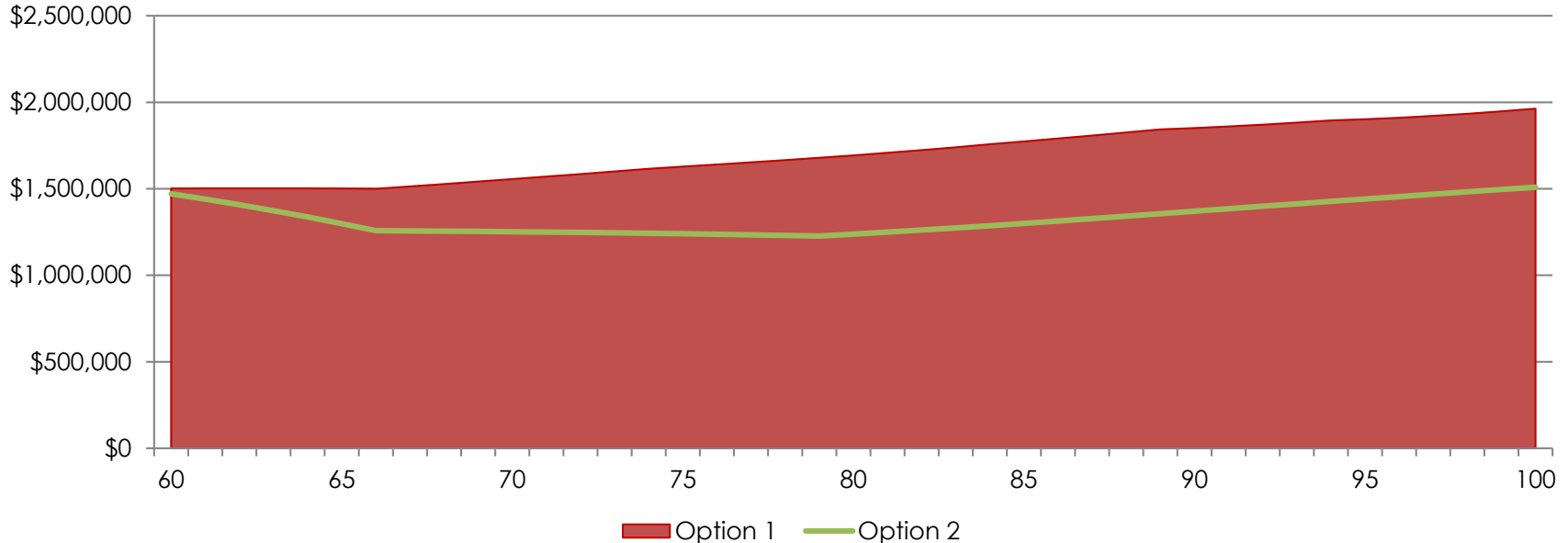
Ratio of value of Other Assets to value of Home





What happens to total assets? - 2

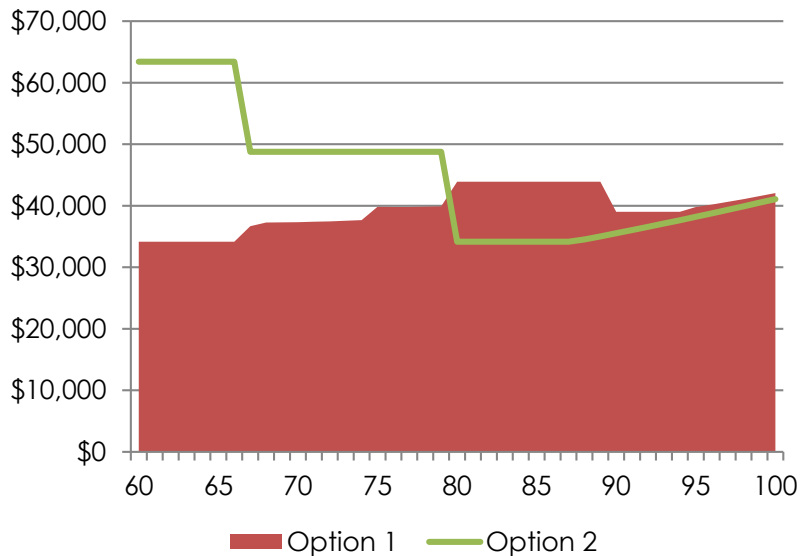
Discounted Net Assets Value





Scenario testing

Discounted Total Income



Ratio of value of Other Assets to value of Home

