Guide to the FinDem Retirement Simulator - Version 1.0

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To Run The Simulator

After you have clicked “Retirement SIMULATOR” on the menu or at the Research Centre, you should see a frame with two panels. On the left panel are input fields and drop down selections. You should see at the top of this panel two buttons for accessing the Guide. Pressing the top button will display the guide in the right hand panel. You can then click any of the topics to go to the descriptions. Alternatively you can click the labels next to the input fields in the left hand panel to get more information (displayed in the right hand panel). The left hand panel should end with two buttons, “Take Off!” and “Back to Base”. If you can’t see these on your monitor, you will need to upgrade your screen display to be able to see the full set of frames and run the Simulator. When you are happy with the data and selections entered in the left panel, select the output View you want, then clik “Take Off!” and the results should appear in the right hand panel. The .png results may take longer to appear than the .html. The Simulator runs for a maximum of 100 cycles to find the optimal solution. The calculations are complex so if you think you have found an error please let us know at Contact Us on www.findem.com.au

Thinking in Today's Dollars

This is a tool to help you think about long range planning for savings and retirement. It converts projected dollar numbers back into present day values so you can think in today's money values. For example a sum of $100 invested today at 7%pa compound interest would amount to $1,497 in 40 years time. But what would the average 25 year old think they would be able to buy with $1,497 when they retire at 65? It's a bit hard to get your head around this. The solution is to "deflate" this amount back to current day purchasing power dollars. We do this by dividing $1,497 by the inflation multiplier for 40 years inflation. If inflation can be assumed to be 4%pa over the next 40 years the multiplier is 4.8. This means $1,497 is worth $312 in today's dollars. So if a person could get a dinner for two today at $100, just over three dinners could be funded in 40 years time by investing $100 today at 7%pa, if restaurant price inflation averaged 4%pa.

Tax and Fees

This is a conceptual long range thinking tool. We have therefore tried to focus on the big picture and avoid having to work out all the different ways an individual's might make contributions. These things change year by year so we have adopted the basic rule, which applies to the majority of Super Contributions - it's either voluntary Salary Sacrifice or standard SGC employer paid contribution. In the left hand panel you enter Gross Contribution and the simulator deducts the 15% or 15% plus surcharge tax before it's invested. This means that if, for example you enter $10,000pa against "SuprCont$pa", the net Contribution accumulated with investment return is either $8,500pa (if you are not surcharge material) or $7,250pa if you are over surcharge salary+contribs limit (currently $121,075 for 2004/05). There is no allowance for fees and costs.

When it comes to Investment Return, you also enter the gross figure. The simulator takes off 15% for the super investment tax before retirement, but uses the straight gross number after

retirement. We assume investment management fees have already been allowed for in the number entered. Similarly with Retirement Income, you enter your gross target next to "RetireInc$pa" excluding any age pension and before tax and tax credits. The simulator then works out the age pension and taxes in arriving at "Net of Tax Retirement Income" which is after all income tax (using 2004/05 scales) and any tax credits from superannuation rules, plus the age pension you would be entitled to on current Income Test rules .

We also want to remind you about Superfund Tax because in Australia it's a big issue - most other countries don't have the three levels of tax we have. What we do is show in the Flight Log View, the tax which we estimate would have been paid by your superfund out of contributions and investment income to get the net figures we work with in the simulator. We accumulate this at the investment return so you can see what you would have in your fund account if no front-end tax had been taken out of super. We also show the 15% tax credit assumed in retirement on money drawn from super savings to produce the Net of Tax Retirement Income. These two items are shown in the two right hand columns.

Age Now

The simulator assumes you have just had this birthday. If you select Couple as Sex it assumes the age entered is for the male of the Couple and the female is 4 years younger. This is used for Age Pension age eligibility test (which varies by year of birth for women). The Simulator works only in complete simulation years.

Optimising Radio Buttons

Only one of these buttons can be clicked. The one that is clicked determines the solution that the simulator works out for you. For example if retirement income is clicked it works out how much income you could generate from your own invested assets (Super plus any Reverse Mortgage draw down). The simulator uses the values you have put in the unclicked items to solve for the clicked item. Any data against the clicked item is not used for the calcs when that item's radio button is clicked. The results are shown in the right panel screen after you have clicked "Take Off!". The optimised item has a yellow background.

Sex & Marital Status

If you select Couple as Sex it assumes the age entered is for the male of the Couple and the female is 4 years younger. Age pension entitlement age may be different for men and women. The rate of Age Pension also varies for Single and Married people and by year of birth for women. The simulator allows for these variations when it adds age pension to the income you produce from your own assets. If you are married it uses the total Married rate of Age Pension and uses simulated funded income for the income means test as if this was the married couple's combined income. In retirement income tax is calculated assuming income-splitting, i.e. half the total income, apply the income tax scales, then double the tax - this is an optimistic view as you can't really income split super unless you plan a long way ahead with careers and how you both make contributions.

Gross Salary

This is current annual salary before tax. It is needed to work out superannuation contribution surcharge taxes. If you leave this data item blank, no allowance is made for surcharge tax.

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Age Started Super

This is used to estimate the amount of tax the government has already collected on your contributions and fund income during the past accumulation of your account balance. If you don't enter this age, it does not affect the simulation of retirement income. The past tax amount is for information only and is included in the Flight Log.png and Quickie.html views.

Super Now

This is the amount held now in a super fund which you would be able to transfer to another fund. People who are in government funds or defined benefit funds may have complex formula which determine future multiple of salary benefit amounts and access to these benefits for investment elsewhere may be restricted. The Simulator is not built to handle defined benefits. A more advanced version of the Simulator is under development to allow for Non-Super investments as well as super. The current version does not allow for any other assets other than the Reverse Mortgage on a home after retirement.

Downshift Age & % Full Time

This is the period where some people might ease up on work before full retirement. The simulator will assumes you change down to the '% Full Time' hours during this period if you enter a value below 100%. Your contribution is multiplied by this % during this period. For example if you entered a super contribution of $10,000pa and 60% of Full Time from a Downshift Age of 55 for this period, the contribution used for the period from 55 to Retired Age would be $6,000pa in today's dollars.

Inflation

This is the average rate of change in wages over the long-term. It affects simulation of contributions that we assume to be linked to wages, the age pension and thresholds for tax calculations which are indexed to average wages. Living costs as measured by the CPI tend to average lower long-term increase rates than wages. It is debatable whether the CPI is an accurate measure of living costs over the very long-term (20 to 30 years) given that it is subject to occasional changes in its design and components. Retirement income expectations and age pensions are currently closely linked to increases in average wages.

Young people may expect their Gross Salary now to increase much faster than average inflation over the course of their careers because of promotion to higher grades. The simulator is not built to allow for this, however you could put in a higher Gross Salary that you think might be a better average of your lifetime salary in today's dollars. Gross Salary entered doesn't have much effect on the basic outputs from the simulation.

Investment Return

This is the average investment return over the long-term after fees but before super fund 15% investment return tax. Where the simulation is in drawdown mode after full retirement age, the rate of the investment return is not reduced by 15% tax. If you click the Radio Button against this item, the Simulator works out what average Gross Investment Return you would need over accumulation and retirement based on all the other assumptions.

Super Contribution

This is the amount contributed ignoring fees and BEFORE deducting super contribution tax and surcharge tax. Currently, employees are entitled to a 9% Super Guarantee Contribution rate(SGC). However the standard 15% tax taken out a these contributions when they are paid reduces the 9% to 7.7%. For someone whose taxable income and contributions is over $121,075

in 2004/05, the contribution tax plus surcharge is 27.5% which brings the 9% down to net contribution of 6.525% net. There may be also the effect of fees and insurance costs which you will need to allow for before entering Gross Contribution in the Simulator. If you click the Radio Button against this item, the Simulator works out what Gross Contribution (ignoring fees) you would need based on all the other assumptions.

Retired Age

This is the age you expect to cease work and to rely solely on super fund retirement income and age pension. Contributions cease to be simulated at this age. The simulator applies Home equity draw down (through Reverse Mortgage) at this age if any is specified (but note there generally restrictions on age and amounts of Reverse Mortgage by providers). Age pension starts from this age if the age test and income test qualifies you for it (otherwise later when entitled). If you click the Radio Button against this item, the Simulator works out what age you could retire based on all the other assumptions.

Retirement Income

If you leave the Radio Button ticked against this item the Simulator works out what total gross funded retirement income (excluding any age pension), in today's dollars, is produced from Super and any Reverse Mortgage. The simulator assumes this works like an allocated pension. Alternatively you can tick another item to optimise and enter here the targeted total gross funded income you want to have in today's dollars.

Lasts to Age

This is the age when retirement income stops and your fund account balance has been totally used up (if you click the Radio Button for this option). Alternatively you can optimise one of the other Options and specify a particular age for this one.

Reverse Mortgage

Some people plan on using part of the equity in their home (e.g. by Reverse Mortgage or trading down to a smaller house) to fund extra retirement income. The number entered here is used as the percentage of the value of the house at retirement age which is then invested to support funded retirement income. What usually happens with a reverse mortgage is that people are allowed to live in their house until they die or decide to move to another house. A debt accrues against the house value based on reverse mortgage drawings and interest charged by the institution granting the reverse mortgage. Usually there will be a maximum percentage that can be borrowed in this way. These are very new and complex contracts and need to be handled with care but they are about the only way retirees with inadequate savings can access the equity in their home if they don't want to downscale housing.

If you click the Radio Button against this item, the Simulator works out what Reverse Mortgage you would need to draw at retirement age based on all the other assumptions. The Reverse Mortgage drawn is assumed be drawn as a lump sum at retirement and invested to earn interest at the gross investment return as for super. (This is not realistic as tax is likely to be paid if this lump sum amount is invested - we have made this assumption to keep the maths simple in this version of the simulator. In practice people are more likely to just draw on the Reverse Mortgage by installment when they need it which will be much the same effect as the assumptions we have made. The overall net effect will be similar to what the simulator does)

Home Value

This is the value of your home now and will have today's dollar calculated by increasing it at the House Price increase rate less the rate of Inflation.

House Prices %pa

This is the rate of future increase in house prices applied to the current value of your house and will be deflated by the general Inflation Rate.

Mortgage Rate %pa

This is the rate of interest on Reverse Mortgage debt. So if you have entered a Reverse Mortgage percentage of say 20% and your house value at retirement in today's dollars is $500,000 then interest will accrue at this rate on $100,000. It is quite possible that this debt could eliminate your remaining equity in your house before you die or move elsewhere in retirement. This will depend on the rate of increase in house prices versus the mortgage rate. This is a risk for the institution offering the Reverse Mortgage and because of this the rate charged can be expected to be significantly higher than for normal home lending. The amount of Reverse Mortgage is assumed to be invested in the same way as your super fund.

Views

You can view the Simulator output in a number of ways. **Numbers** is the quickest response and less costly on download time as it is all html and summarises the data you entered and the results for the whole period (you may have to scroll up and down to see all of this). By copying the tables in the results panel you can paste this as tables into Microsoft Word or Excel.

All of the other output options are **.png** graphics images. These are shown as **Pictures, RealityCk and Flight Log**. You can Save these (by right click and Save if using IE6+) locally on your computer or Print and Email them (right click and Print or Email). People who have dial-up modems or who have low download limits on cable might wish to monitor how much capacity the download of .png's adds if you are going to be clicking away at "Take Off!" trying different data all day. We have designed the .png output because of it's ease of graphic display and ease of printing and/or saving output.

Money Mountain & Contours

In the Pictures View, the **Money Mountain** shows the build-up and decline of your invested assets in today's dollars. The 67% and 33% **Contour lines** cut across this Mountain at the point where your invested assets are at two-thirds and one-third of their maximum height. On the left hand side of these lines, we show the number of years between the ages when the assets first reach the 67% or 33% positions and the ages when they pass them on the way down. This is to indicate the **investment time-horizon** you should be thinking about for these assets over these periods. Retirement is about long term investing!