Australian Government

Australian Government Actuary

DFRDB COMMUTATION ANALYSIS

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1 INTRODUCTION

1.1 The Commonwealth Ombudsman (Ombudsman) is investigating past practices by the predecessors of the Commonwealth Superannuation Corporation (CSC) in respect of the commutation option for retirees from the Defence Force Retirement and Death Benefits Scheme (DFRDB). In order to inform the Ombudsman's view, the Ombudsman has requested the Australian Government Actuary (AGA) provide an analysis of financial outcomes relating to 12 individuals who elected to commute part of their retirement pay (pension) for a lump sum.

1.2 This report presents the outcomes of the analysis using the assumptions requested by the Ombudsman.

1.3 It should be noted that this report has been specifically prepared for the Ombudsman and third parties are not entitled to rely upon it for decision making purposes. We understand that the Ombudsman may append a copy of this report to the Ombudsman's report for information purposes. We have no objection to this provided that this report is appended in its entirety. If the Ombudsman does not append a copy of this report or otherwise makes this report publicly available, then if this report is quoted in the Ombudsman's report, any quotation that is attributed to the AGA should be cleared with the AGA prior to publication.

2 DFRDB COMMUTATION OPTION

2.1 Where serving ADF personnel in the DFRDB retire after 20 or more years of service, they are entitled to retirement pay (pension). Part of the retirement pay can be converted for a lump sum. Appendix C provides details of the commutation factors (termed expectation of life factors in Schedule 3 of the *Defence Force Retirement and Death Benefits Act 1973*) per $1 per annum of pension commuted.

2.2 When DFRDB initially commenced in 1973, the maximum lump sum available as a result of commutation was four times the pension before any commutation. The initial design of the DFRDB was such that there was a strong financial incentive for retirees to take the maximum lump sum. The component of the pension (before commutation) that was being commuted for the lump sum was unindexed pension. The balance of the pension was indexed pension. As would be expected, virtually all retirees elected to commute the unindexed pension for the maximum lump sum.

2.3 From 1982 to 2002, the amount of the maximum lump sum that could be taken was gradually increased from four times the pension before any commutation to five times the pension before any commutation. It is important to note that while the commutation factors did not change, the component of any lump sum that is in excess of four times the pension before any commutation is an exchange for (commutation

of) indexed pension. Following these changes, the vast majority of retirees continued to commute their pension for the maximum lump available.

2.4 The pension increases for indexed DFRDB pensions were initially based on the Consumer Price Index (CPI). In 2014, there was an improvement to the indexation arrangements for those aged 55 or more. These increases are based on a methodology that essentially replicates the increases to the Commonwealth Age Pension allowing for the different pension indexation dates for DFRDB compared to the Age Pension.

2.5 The reversionary pension payable to a surviving spouse following the death of the pensioner is unaffected by whether or not members retiring elect to commute part of their pensions.

3 DATA

3.1 The modelling used actual data from the DFRDB membership database extracted by the Commonwealth Superannuation Corporation (CSC) at the request of the Ombudsman and subsequently provided to the AGA by the Ombudsman.

3.2 The CSC data contained information that would enable the comparison between the commuted lump sum and the pension forgone for the commutation, including:

- date of exit,
- age at exit,
- commutation factor,
- gender,
- rank,
- final salary,
- effective years of service,
- pension as a percentage of salary,
- notional retirement age and associated reduction, if applicable,
- commutation multiple,
- commutation lump sum; and
- annual pensions at the date of discharge and at 1 July 2019.

3.3 We have performed checks on the data provided based on our understanding of the legislation governing the DFRDB.

3.4 CSC also provided the pension indexation factors that applied to DFRDB pensioners from the July 1976 increase to the January 2019 increases. The pension indexation percentages for the July 2019 pension increases are available on the CSC website. The indexation rates used are set out in Appendix B.

3.5 We performed a check by comparing the initial pension payable on retirement increased in line with the pension indexation factors provided by CSC with the actual current day pension provided by CSC. This check found that the projected pensions were within 0.5% of the current pension provided by CSC.

3.6 Based on our checks, we are comfortable that the data supplied is reasonable for the purposes of this analysis. Relevant details for the 12 individuals are set out in Appendix A.

4 METHODOLOGY

4.1 The Ombudsman requested that the analysis be based on the DFRDB legislation as it stands. The Ombudsman has further requested that the outcomes analysed should be based, as far as is practicable, on actual economic outcomes after retirement rather than those that might have been expected at the time of retirement.

4.2 The methodology used in this analysis has been developed by AGA. In doing this, AGA consulted with the Ombudsman regarding the general principles underlying the AGA methodology.

4.3 The approach that the AGA has taken to this exercise is to firstly consider the options available to a member retiring at the time of discharge in accordance with our understanding of the legislation governing the DFRDB, that is to either:

- take a lifetime pension consisting of indexed and non-indexed components, or
- commute or exchange all of the unindexed component plus part of the indexed component (post 1982) for an upfront lump sum payment, with the residual indexed pension continuing to be paid for the life of the member. This option does not involve the reinstatement of the commuted pension at any time.

4.4 Under either option, the member will always receive an indexed pension relating to the component of retirement pay that is not able to be commuted. Thus, in performing the comparison analysis, this component can be ignored. For analysis purposes, it is only necessary to compare the lump sum from commutation with the unindexed and indexed pension forgone as a result of commutation.

4.5 In performing our analysis, we have adopted the concept of determining a “break-even age” for the 12 individuals being analysed. The break-even age for each individual is the age where the value derived from the commutation lump sum equals the value derived from the forgone pension payments. If the individual lives beyond

the break-even age, then with the benefit of hindsight, the individual would have been financially better off by not commuting part of their pension. Conversely, if the individual does not live to the break-even age, then the individual would have been financially better off commuting part of their pension.

4.6 Based on the concept of a break-even age, we have then compared the value of the commuted benefit that a member elected with the value of ongoing pension payments that were forgone in the commutation. It should be noted that as none of the 12 individuals being considered have yet reached their break-even ages, it was necessary to make assumptions about future interest rates to calculate break-even ages for these individuals.

4.7 While the Ombudsman has requested the analysis be done based on actual economic outcomes, it should be noted that an individual would have had to make a value judgement regarding his/her break-even age at the time of retirement based on economic conditions at that time and their expectations of longevity.

4.8 As our analysis has been performed using interest rate related assumptions, this approach could be argued to be conservative from the perspective of comparing the value of the commutation lump sum with the pension forgone. This is because most individuals at the time of retirement would not have foreseen the substantial falls in interest rates that have applied in recent years and would have based their decisions assuming higher interest rates. Higher interest rates increase the attractiveness of the commutation lump sum relative to the pension forgone.

Valuation Approaches

4.9 Discussions with the Ombudsman indicated that its investigations found that it was likely that the majority of those who elected to commute for the maximum lump sum used the lump sum either as a deposit for a house or used it to reduce the amount of money that needed to be borrowed for a house. Given this, the Ombudsman requested that the AGA should incorporate some sort of analysis which considered this scenario given it was a common theme.

4.10 We also considered what would be a worse case sensible use of the commutation lump sum. Our view was that investing the lump sum with the bank met this criterion. However, given that the lump sum would have been considered to be a significant amount of money at the time, we consider that a relatively astute, but still conservative investment would have been a term deposit, rather than an at call investment.

4.11 We have thus adopted two alternative approaches as follows:

- benefits received are invested in a risk free environment represented by prevailing one year term deposit rates, or

- the commuted amount is used to purchase a property, thus reducing the amount the member would have had to borrow in relation to a 25 year home loan.

Term Deposit Approach

4.12 When considering how to value the term deposit approach it is important to recognise that different people will have different perspectives on how to evaluate the two sets of alternative benefit payments. As a result, we have used two different methods to compare the benefits, noting that both methods will result in the same break-even age.

Term Deposit – Accumulation Method

4.13 The first approach is termed "the accumulation method" as both the commutation lump sum and the pension forgone are accumulated annually with term deposit interest rates. The two accumulation profiles are then compared to find out whether there is a crossover point. If there is a crossover, the age of the member in the crossover year would be the break-even age. For most of the retirements in the early years of DFRDB, there is no crossover year and the commutation lump sum provides better value than the pension forgone indefinitely.

4.14 When describing this approach, it is useful to consider a simplified example of a member who exchanged annual unindexed pension payments of $15,000 for a lump sum of $300,000 at age 54, with a notional commutation factor of 20. There are two scenarios to be modelled. They are the commutation lump sum and the forgone unindexed pension payments. They are modelled as follows:

- Commutation lump sum

  The $300,000 is assumed to be invested in one year term deposits and is not accessed at any time. Each year, interest is added to the opening balance at the start of the year to give an accumulated value at the end of the year.

- Unindexed pension payments

  The forgone unindexed pension payments are also assumed to be invested in one year term deposits when the member receives the payments and again, not accessed at any time. Over time this investment account grows as follows:

  1. At the start of the first year, the initial balance is zero.
  2. At the end of the first year, the balance is the amount of the pension received ($15,000) in that year plus a small amount of interest earned on the pension payments received in the year. On average, pension

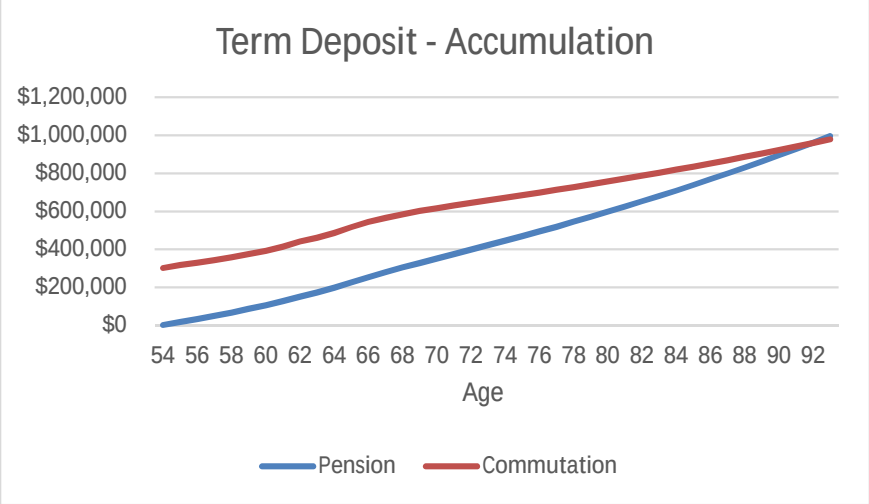
payments are received halfway through the year. Thus, the amount of interest earned is around half a year's worth of interest on $15,000 in the simplified example.

3. In the second and subsequent years, interest is earned on the opening balance and added to the account. Another year's worth of pension ($15,000) will be added along with around half a year's worth of interest earned on that year's pension payments to give the account balance at the end of the year.

4.15 The accumulated value of the two series of invested benefits based on the data for our simplified example individual and assumptions is then compared. The point, or age of the member, at which the two values intercept is identified. Where an individual lives past the break-even age, based on the assumptions used, the individual would have been better off not commuting. This process is illustrated by Figure 1 below where the crossover (break-even) age is 92.

4.16 For the purpose of this calculation, it was necessary to make an assumption about future term deposit rates. As set out in Section 5, we have assumed that recent historically low interest rates of 2% per annum remain at those levels in the future.

Figure 1: Example of Term Deposit Accumulation comparison



In this example, the member ceased service in the year 2000 at age 54 and the value of the two benefits would be expected to cross in 2038 when the member is age 92. This is the break-even age.

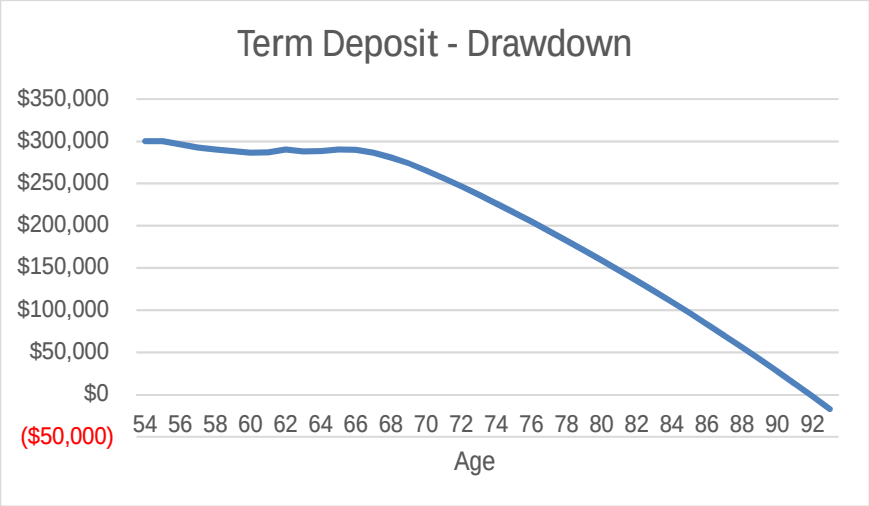
Term Deposit –Drawdown Method

4.17 An alternative way of comparing the two benefit options in the above example is to think of the $300,000 lump sum as an investment from which the annual $15,000 pension payments are withdrawn each year. Effectively, the member decides that he or she still needs access to the forgone pension payments, firstly out of the interest earned on the investment, and if that is insufficient to provide the pension forgone,

then secondly out of the capital. The point at which the investment is exhausted is the actual break-even age.

4.18 Figure 2 below illustrates this approach and shows that the lump sum investment would be expected to be exhausted at age 92 – the same age as derived in the accumulation approach above.

Figure 2: Example of Term Deposit Drawdown



In this example, the member ceased service in the year 2000 at age 54 and the value of the investment supporting the pension drawdown is expected to be exhausted in 2038 when the member is age 92. This is the break-even age.

Home Loan Approach

4.19 The home loan approach recognises that many individuals who chose to take a commutation lump sum actually used that money to reduce the amount that they would have otherwise borrowed for a mortgage. The value proposition here is a little more complex and is described below using the same member as an example:

1. If the member had been required to borrow the extra $300,000 for their home loan, then based on a loan term of 25 years and the prevailing mortgage rates in 2000, they would have been required to make extra mortgage repayments in the first year of about $27,000.

2. By taking the commutation lump sum, the member can save $27,000 in mortgage payments. However, as they have forgone $15,000 of annual pension payments, they can pay themselves the forgone annual pension from the $27,000 savings in mortgage payments. The surplus savings of $12,000 would then be put into an investment account earning the one year term deposit rates.

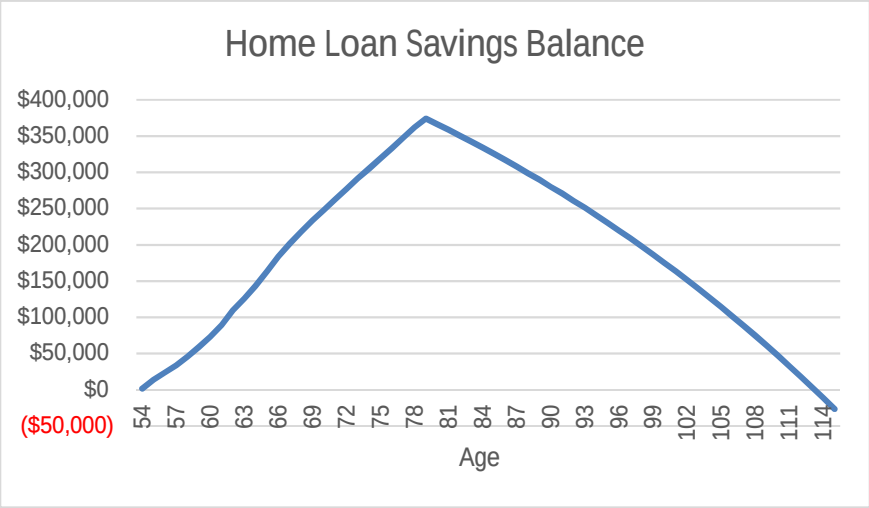
3. This calculation is performed each year based on the prevailing mortgage rates and outstanding loan balance, with the surplus savings added to the investment.

4. Once the home loan is paid off after 25 years, the investment receives no further top-ups, but ongoing annual forgone pension payments of $15,000 would start to be paid out of the accumulated investment until the balance is exhausted. This represents the actual break-even age.

5. For the purpose of this calculation, it is assumed that mortgage rates in the future will be at the rate of 4% per annum based on the current economic environment.

4.20 The home loan approach for the same member can be illustrated in Figure 3 below.

Figure 3: Example of Home Loan Savings Balance



In this example, the member ceased service in the year 2000 at age 54 and used the entire commutation lump sum to purchase a property, which would otherwise be financed by a 25-year home loan.

4.21 The above break-even age of 114 is significantly higher than the term deposit break-even age of 92, largely due to the fact that mortgage rates are significantly higher than term deposit rates. Effectively, the home loan approach assumes that the member has been able to access mortgage investment returns on their commuted lump sum in the first 25 years.

5 ASSUMPTIONS

5.1 The Ombudsman has set the assumptions for the purpose of this report. This has either been directly or by means of setting an approach for deriving the assumptions. The Ombudsman requested that the analysis should be done on a gross of tax basis. Therefore, the analysis has not taken into account tax implications.

5.2 Data on historical term deposit interest rates and mortgage borrowing rates was obtained from information published by the Reserve Bank of Australia (RBA) where it was available. For a small number of years in the 1970s and for 1980, information on term deposit rates from the RBA was not available and these rates were obtained from other sources. For the purpose of applying historical rates for our calculations,

the average of one year term deposits and variable mortgage rates over each financial year was used in respect of that financial year. Detail regarding the historical term deposit and mortgage rates that we have used are set out in Appendix B of this report.

5.3 As the individuals being analysed have yet to reach break-even ages, it has been necessary to make assumptions about the future. These assumptions are:

- Interest rates on term deposits are assumed to be 2% per annum from 1 July 2019;
- Mortgage interest rates are assumed to be 4% per annum from 1 July 2019; and
- Pension indexation for DFRDB members under age 55 is assumed to be 2% per annum from 1 July 2019. Pension indexation for DFRDB members aged 55 and over are is assumed to be 3% per annum from 1 July 2019.

6 RESULTS

6.1 Calculations have been performed under the three different approaches described above for each of the 12 individual cases provided, noting that there are only two different break-even ages produced.

6.2 A summary of the various break-even ages has been set out in Table 1 below, noting that “Never” means that the commutation option will always exceed the alternative based on actual and assumed term deposit and mortgage rates. A summary of the break-even year is also set out in Table 2 below.

Table 1: Summary of break-even ages

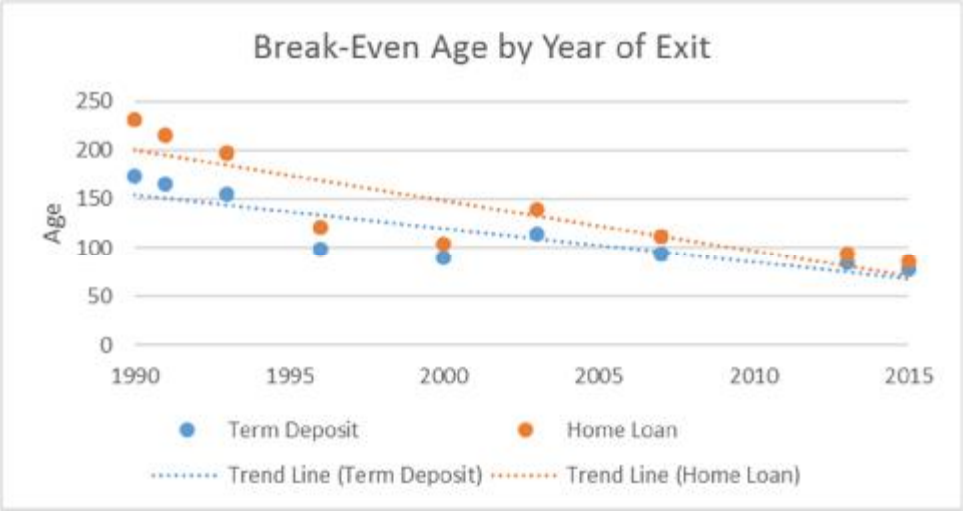
Case	Year of Exit	Age at exit	Break-Even Age (Term Deposit)	Break-Even Age (Home Loan)
1	1976	44	Never	Never
2	1976	38	Never	Never
3	1986	37	Never	Never
4	1990	48	174	231
5	1991	36	165	216
6	1993	40	155	197
7	1996	49	99	121
8	2000	52	89	104
9	2003	39	114	139
10	2007	41	93	112
11	2013	60	84	93
12	2015	56	78	85

Table 2: Summary of break-even years

Case	Year of Exit	Age at exit	Break-Even Year (Term Deposit)	Break-Even Year (Home Loan)
1	1976	44	Never	Never
2	1976	38	Never	Never
3	1986	37	Never	Never
4	1990	48	2116	2173
5	1991	36	2120	2171
6	1993	40	2108	2150
7	1996	49	2046	2068
8	2000	52	2037	2052
9	2003	39	2078	2103
10	2007	41	2059	2078
11	2013	60	2037	2046
12	2015	56	2037	2044

6.3 Figure 4 below provides an alternative way of looking at the results, noting that the three "Never" cases cannot be included in the chart:

Figure 4: Break-even ages



For the chart above, the cases were arranged in chronological order based on each member's exit date.

6.4 Note that care needs to be taken in interpreting this chart as year of exit is not the only factor determining the break-even age. See section 7 for more discussion on this aspect.

6.5 More details about each of the 12 individuals are set out in the charts in Appendix D. Generally, the charts are limited to age 100 for presentation purposes and, to aid comparison, all charts for an individual have the same maximum age. There are a number of instances where the break-even age for the term deposit approaches is less than age 100 but the break-even age for the home loan approach is greater than age 100 and the break-even age for the home loan approach is not shown on the home loan approach chart. In these circumstances the break-even ages can be referenced in Table 1 above.

6.6 To further illustrate the derivation of the break-even ages, we have provided the full workings of our calculations under each approach in respect of Case 8 in Appendix E.

7 COMMENTS

7.1 A number of observations can be made from the results set out above.

7.2 The earlier the discharge date, the higher the break-even age. This is not surprising when consideration is made of the high levels of term deposit and mortgage rates that have applied during these earlier periods relative to current rates. Effectively, individuals have been able to take advantage of these high rates on their notionally invested commutation lump sum.

7.3 For more recent discharge dates, lower interest rates have applied, meaning that break-even ages are much lower and more in line with what might be considered to be an individual's life expectancy based on current Australian population life expectancies.

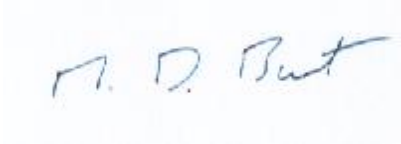
7.4 While the date of discharge is an important indicator of the break-even age, the age at discharge is also important. The relative values of the commutation factors at each age mean that the older the age at discharge, the lower the break-even age. We have performed calculations for a range of different potential members who were assumed to discharge at either age 50 or age 60 to verify this observation.

7.5 In relation to Figure 4 above, while the average age at discharge of the 12 individuals was 45, the ages at discharge of cases 7 and 8 (corresponding to the lower break-even ages) were 49 and 52 respectively.

7.6 Using the commutation lump sum to reduce the amount of a home loan results in a higher break-even age than investing in one year term deposits. This reflects the higher level of mortgage rates relative to term deposit rates. For this exercise, we have used a 25 year home loan. In general, the longer the home loan term, the greater the advantage gained.

7.7 This observation leads to the consideration of what is an appropriate investment to use for this exercise. The term deposit approach is intended to reflect a relatively unsophisticated, risk-free investment, while the home loan represents what we understand to have been a common use of the commuted lump sum in practice. Of course, it is arguable that individuals may have had other intentions for the investment of the lump sum, including superannuation, managed investments, home renovations or simply to meet major commitments like school fees or travel.

7.8 Each individual will have made their own decision about what to do with the commuted lump sum, with varying degrees of success. Investment decisions are generally made on the basis of a trade-off between risk and return, such that higher risk is rewarded with higher returns on average over the long term. While we cannot illustrate all potential investment strategies, we feel that using a risk-free approach as a base in order to set a theoretical minimum break-even age is appropriate, along with illustrating the home loan approach which is likely to have been one of the more common investments.



Michael Burt, FIAA
Actuary
26 September 2019

Appendix A – Data used in the calculations

	Case #1	Case #2	Case #3	Case #4
Year of discharge	1976	1976	1986	1990
Salary used in calculations (Final salary)	$12,536	$12,536	$26,558	$49,364
Length of Effective Service	21	23	20	20
Percentage of Retirement Pay applicable to years of service	36.50%	39.5%	35%	35%
Actual Retirement Pay at retirement (Uncommuted)	$4,575.64	$4,951.72	$9,295.30	$17,277.40
Commutation multiplier	4	4	4.2	4.35
Commutation amount	$18,302.56	$19,806.88	$39,040.26	$75,156.69
Age at retirement	44	38	37	48
Expectation of life factor	28.25	33.67	34.59	29.69
Retirement Pay after commutation at retirement	$3,927.76	$4,363.46	$8,166.64	$14,746.02
Total pension received from commencement to 1 July 2019 (Actual dollars)	$700,260.58	$761,903.10	$501,594.40	$658,703.97
How much the member contributed (Actual dollars)	$4,850.40	$4,318.29	$12,264.02	$27,669.81

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	Case #5	Case #6	Case #7	Case #8
Year of discharge	1991	1993	1996	2000
Salary used in calculations (Final salary)	$37,818	$56,066	$84,518	$96,972
Length of Effective Service	21	22	33	36
Percentage of Retirement Pay applicable to years of service	36.5%	38%	57.75%	65.25%
Actual Retirement Pay at retirement (Uncommuted)	$13,803.57	$18,109.32	$47,344.87	$63,274.23
Commutation multiplier	4.45	4.55	4.65	4.85
Commutation amount	$61,425.89	$82,397.40	$220,153.65	$306,880.02
Age at retirement	36	40	49	52
Expectation of life factor	35.51	36.99	23.96	21.51
Retirement Pay after commutation at retirement	$12,073.75	$15,881.76	$38,156.49	$49,007.38
Total pension received from commencement to 1 July 2019 (Actual dollars)	$478,604.59	$574,056.84	$1,199,722.01	$1,256,616.01
How much the member contributed (Actual dollars)	$21,017.69	$30,940.57	$52,913.87	$73,475.55

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	Case #9	Case #10	Case #11	Case #12
Year of discharge	2003	2007	2013	2015
Salary used in calculations (Final salary)	$61,339	$73,394	$93,023	$149,339
Length of Effective Service	22	24	37	40
Percentage of Retirement Pay applicable to years of service	38%	41%	67.75%	76.50%
Actual Retirement Pay at retirement (Uncommuted)	$23,308.82	$30,091.54	$63,023.08	$114,244.33
Commutation multiplier	5	5	5	5
Commutation amount	$116,544.10	$150,457.70	$315,608.45	$571,221.65
Age at retirement	39	41	60	56
Expectation of life factor	37.92	30.93	19.51	18.43
Retirement Pay after commutation at retirement	$20,235.40	$25,227.08	$46,871.60	$83,250.21
Total pension received from commencement to 1 July 2019 (Actual dollars)	$390,648.89	$363,315.67	$281,301.56	$380,700.24
How much the member contributed (Actual dollars)	$39,800.93	$51,128.79	$92,626.68	$120,580.08

Appendix B – Historical data used

The table below shows the economic parameters for the period between 1 July 1975 and 30 June 2019 that have been used in the calculations.

Period Start	Period end	CPI Indexation	"Age Pension" Indexation	One Year Term Deposit rate	Mortgage rate
1/07/1975	30/06/1976	13.40%	n/a	8.23%	10.13%
1/07/1976	30/06/1977	13.60%	n/a	7.98%	9.88%
1/07/1977	30/06/1978	8.20%	n/a	7.75%	9.65%
1/07/1978	30/06/1979	8.20%	n/a	7.33%	9.23%
1/07/1979	30/06/1980	10.50%	n/a	7.45%	9.35%
1/07/1980	30/06/1981	9.40%	n/a	9.04%	10.94%
1/07/1981	30/06/1982	10.50%	n/a	11.90%	12.63%
1/07/1982	30/06/1983	11.40%	n/a	12.52%	13.08%
1/07/1983	30/06/1984	5.90%	n/a	11.30%	11.83%
1/07/1984	30/06/1985	4.40%	n/a	11.74%	11.64%
1/07/1985	30/06/1986	7.20%	n/a	13.88%	13.78%
1/07/1986	30/06/1987	9.40%	n/a	13.95%	15.50%
1/07/1987	30/06/1988	6.90%	n/a	11.70%	14.14%
1/07/1988	30/06/1989	8.80%	n/a	13.63%	15.27%
1/07/1989	30/06/1990	8.60%	n/a	15.02%	16.88%
1/07/1990	30/06/1991	4.90%	n/a	11.29%	15.05%
1/07/1991	30/06/1992	1.70%	n/a	7.89%	11.84%
1/07/1992	30/06/1993	1.20%	n/a	5.62%	9.87%
1/07/1993	30/06/1994	1.40%	n/a	4.93%	8.89%
1/07/1994	30/06/1995	3.90%	n/a	7.59%	9.90%
1/07/1995	30/06/1996	3.70%	n/a	7.00%	10.44%

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Period Start	Period end	CPI Indexation	"Age Pension" Indexation	One Year Term Deposit rate	Mortgage rate
1/07/1996	30/06/1997	1.30%	n/a	5.82%	8.38%
1/07/1997	30/06/1998	0.00%	n/a	4.48%	6.76%
1/07/1998	30/06/1999	1.10%	n/a	4.08%	6.61%
1/07/1999	30/06/2000	2.80%	n/a	5.16%	7.03%
1/07/2000	30/06/2001	6.00%	n/a	5.13%	7.63%
1/07/2001	30/06/2002	2.92%	n/a	3.90%	6.34%
1/07/2002	30/06/2003	3.43%	n/a	3.96%	6.57%
1/07/2003	30/06/2004	2.01%	n/a	4.41%	6.88%
1/07/2004	30/06/2005	2.31%	n/a	4.65%	7.15%
1/07/2005	30/06/2006	3.02%	n/a	4.68%	7.36%
1/07/2006	30/06/2007	2.50%	n/a	5.53%	7.97%
1/07/2007	30/06/2008	4.24%	n/a	6.55%	8.80%
1/07/2008	30/06/2009	2.70%	n/a	4.57%	7.28%
1/07/2009	30/06/2010	2.72%	n/a	5.45%	6.53%
1/07/2010	30/06/2011	3.33%	n/a	6.04%	7.66%
1/07/2011	30/06/2012	1.60%	n/a	5.18%	7.45%
1/07/2012	30/06/2013	2.51%	n/a	4.17%	6.52%
1/07/2013	30/06/2014	2.92%	3.12%	3.39%	5.95%
1/07/2014	30/06/2015	1.30%	1.30%	2.95%	5.78%
1/07/2015	30/06/2016	1.30%	1.50%	2.41%	5.53%
1/07/2016	30/06/2017	2.11%	2.41%	2.35%	5.28%
1/07/2017	30/06/2018	1.91%	2.31%	2.22%	5.22%
1/07/2018	30/06/2019	1.30%	1.81%	2.14%	5.31%

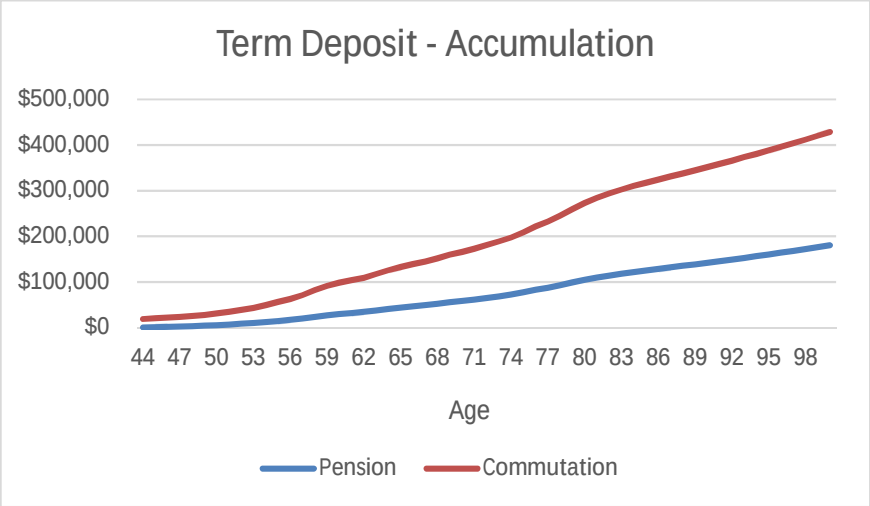
Appendix C – Commutation factors (expectation of life factors in Schedule 3 of the Defence Force Retirement and Death Benefits Act 1973)

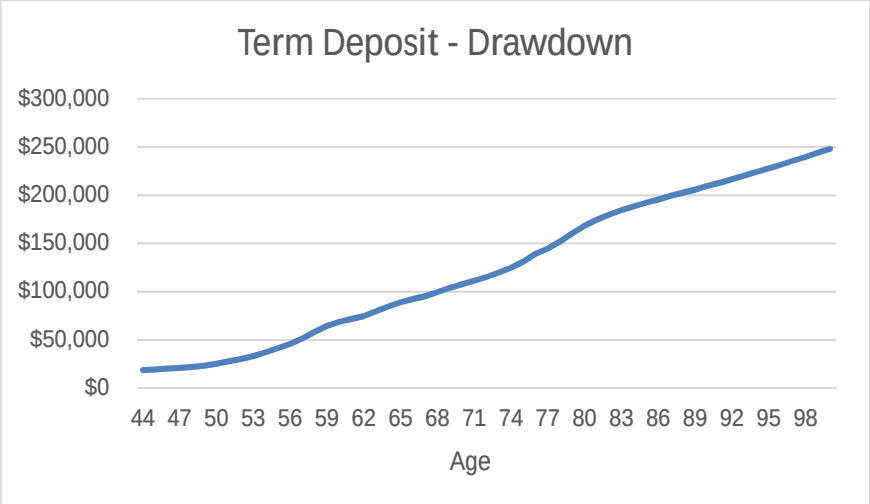
Age	Male	Female
30	41.12	46.49
31	40.18	45.53
32	39.25	44.57
33	38.31	43.61
34	37.38	42.65
35	36.45	41.70
36	35.51	40.75
37	34.59	39.81
38	33.67	38.86
39	32.75	37.92
40	31.84	36.99
41	30.93	36.06
42	30.03	35.13
43	29.14	34.21
44	28.25	33.29
45	27.38	32.38
46	26.51	31.48
47	25.65	30.58
48	24.80	29.69
49	23.96	28.80

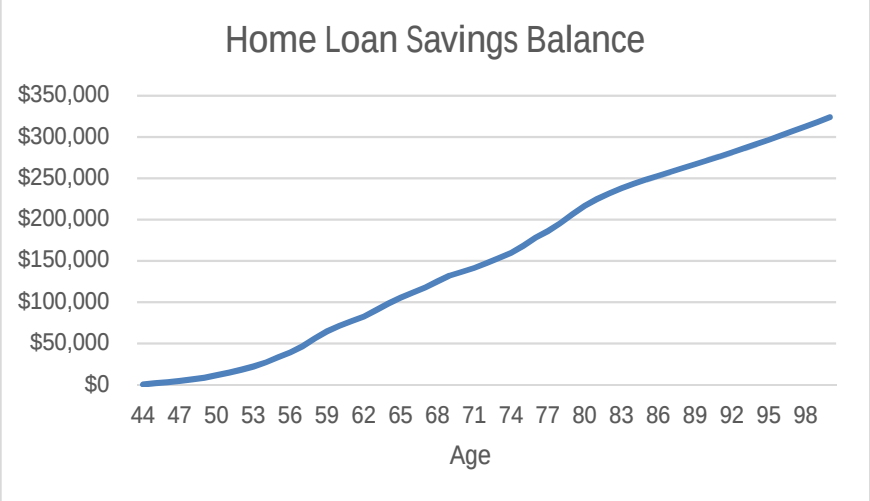
Age	Male	Female
50	23.13	27.92
51	22.31	27.05
52	21.51	26.18
53	20.72	25.32
54	19.94	24.47
55	19.18	23.63
56	18.43	22.79
57	17.70	21.96
58	16.99	21.13
59	16.29	20.32
60	15.60	19.51
61	14.94	18.72
62	14.29	17.94
63	13.67	17.17
64	13.06	16.42
65	12.47	15.68

Appendix D – Individual case results

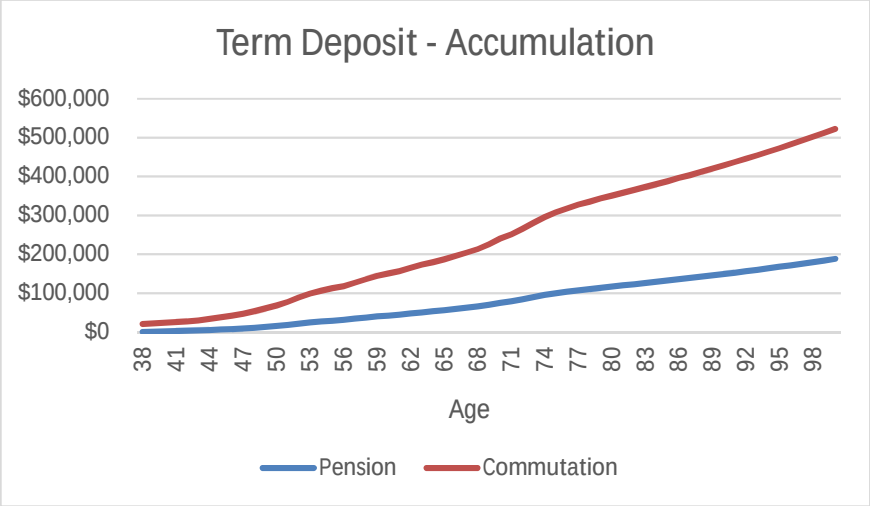
Case 1

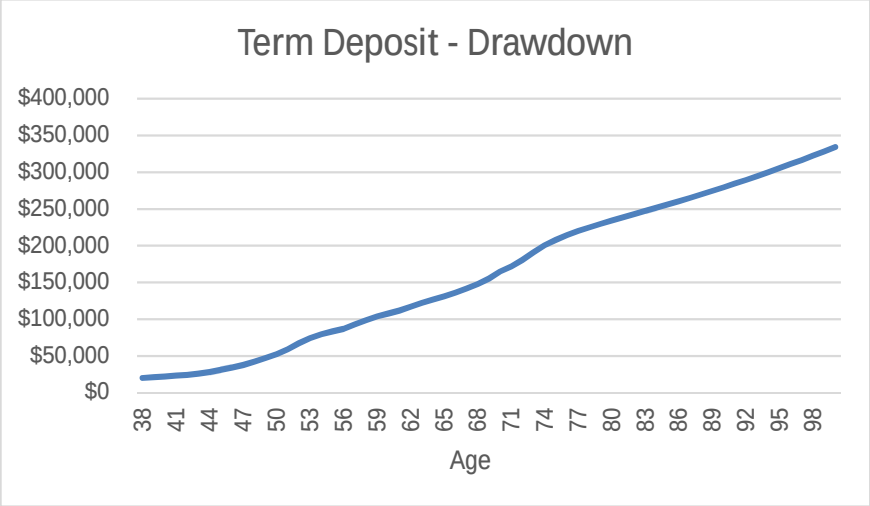


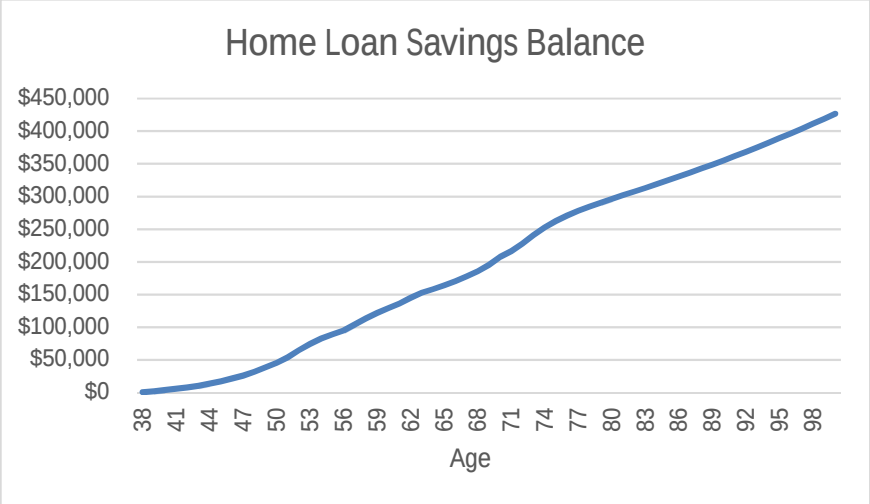




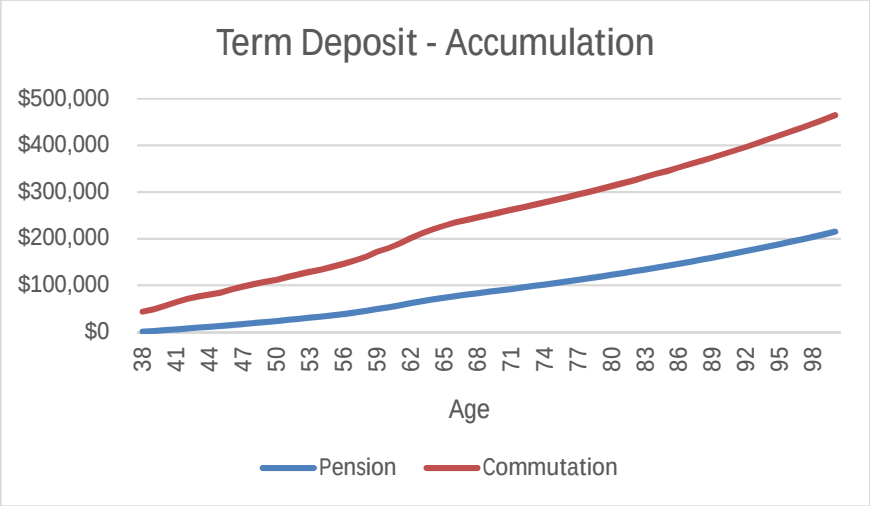
Case 2


Term Deposit - Accumulation
$600,000
$500,000
$400,000
$300,000
$200,000
$100,000
$0
38 41 44 47 50 53 56 59 62 65 68 71 74 77 80 83 86 89 92 95 98
Age
Pension
Commutation


Term Deposit - Drawdown
$400,000
$350,000
$300,000
$250,000
$200,000
$150,000
$100,000
$50,000
$0
38 41 44 47 50 53 56 59 62 65 68 71 74 77 80 83 86 89 92 95 98
Age


Home Loan Savings Balance
$450,000
$400,000
$350,000
$300,000
$250,000
$200,000
$150,000
$100,000
$50,000
$0
38 41 44 47 50 53 56 59 62 65 68 71 74 77 80 83 86 89 92 95 98
Age

Case 3


Term Deposit - Accumulation
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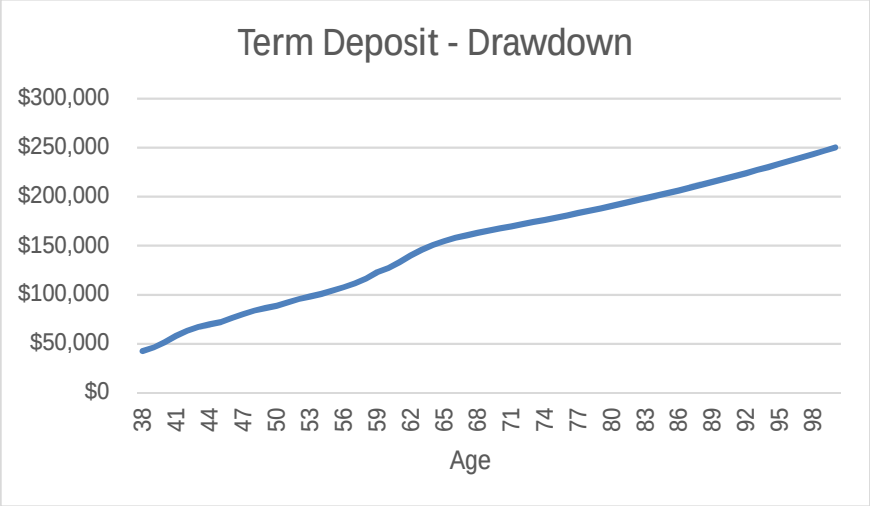
$400,000
$300,000
$200,000
$100,000
$0
38 41 44 47 50 53 56 59 62 65 68 71 74 77 80 83 86 89 92 95 98
Age
Pension
Commutation


Term Deposit - Drawdown
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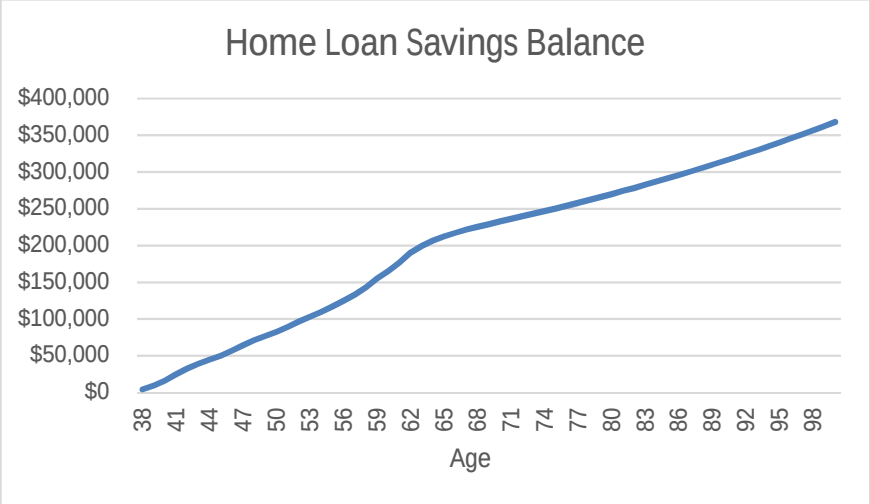
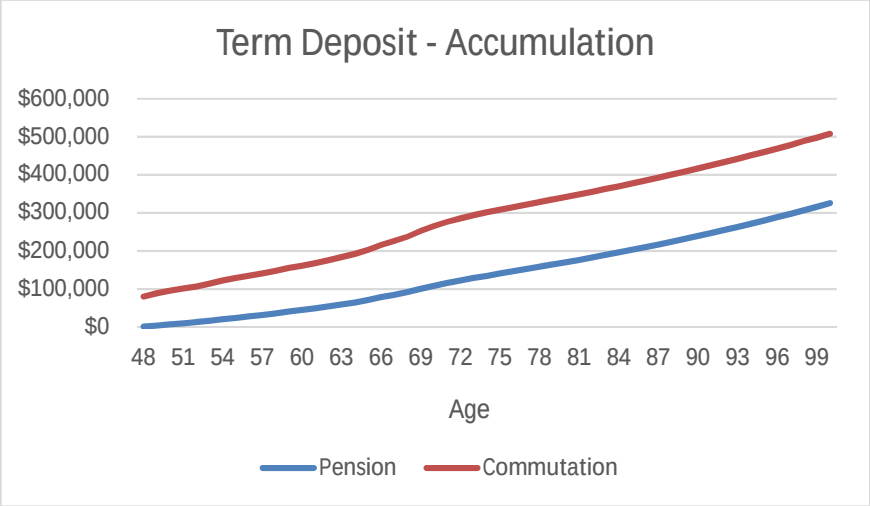
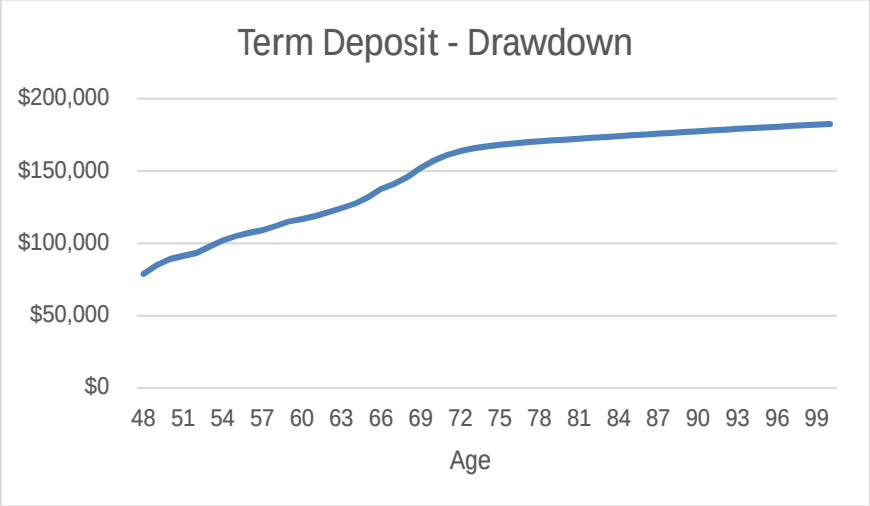
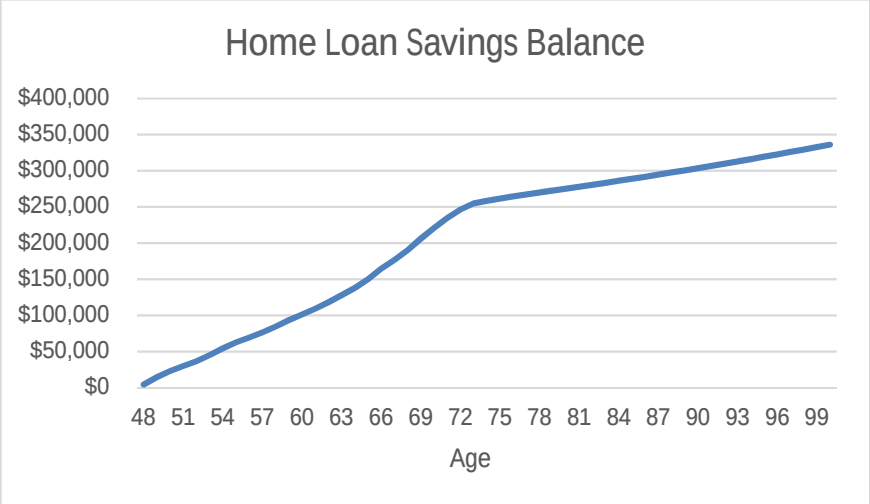
$250,000
$200,000
$150,000
$100,000
$50,000
$0
38 41 44 47 50 53 56 59 62 65 68 71 74 77 80 83 86 89 92 95 98
Age


Home Loan Savings Balance
$400,000
$350,000
$300,000
$250,000
$200,000
$150,000
$100,000
$50,000
$0
38 41 44 47 50 53 56 59 62 65 68 71 74 77 80 83 86 89 92 95 98
Age

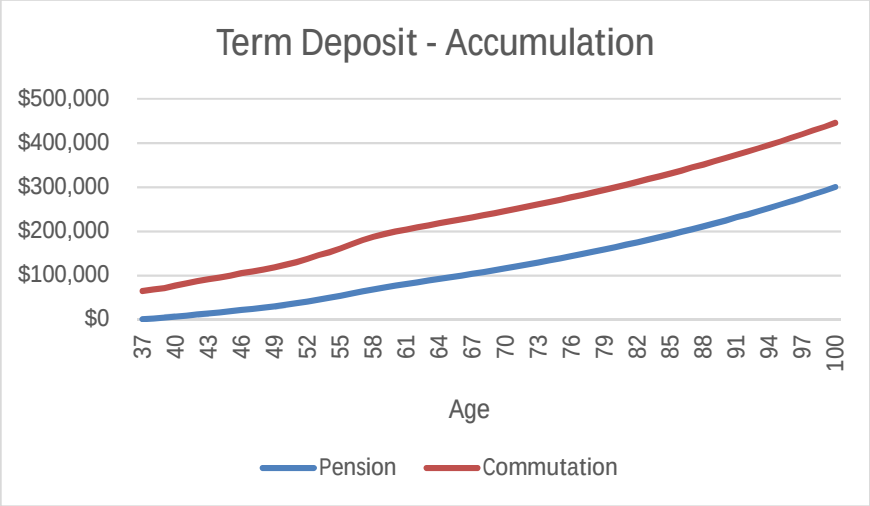
Case 4

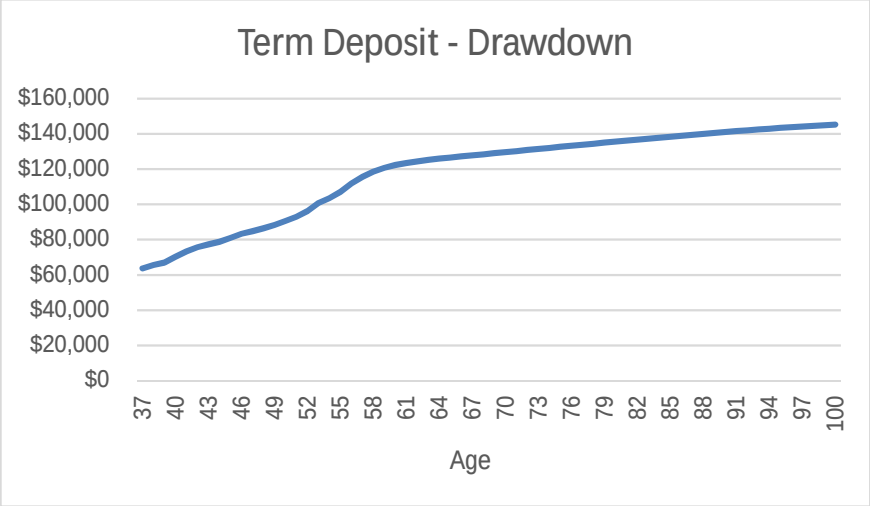

Term Deposit - Accumulation
$600,000
$500,000
$400,000
$300,000
$200,000
$100,000
$0
48 51 54 57 60 63 66 69 72 75 78 81 84 87 90 93 96 99
Age
Pension
Commutation

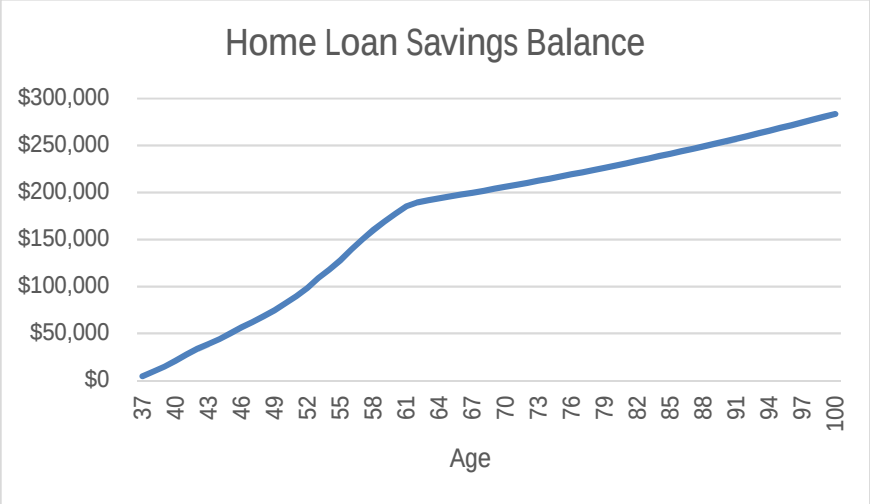

Term Deposit - Drawdown
$200,000
$150,000
$100,000
$50,000
$0
48 51 54 57 60 63 66 69 72 75 78 81 84 87 90 93 96 99
Age


Home Loan Savings Balance
$400,000
$350,000
$300,000
$250,000
$200,000
$150,000
$100,000
$50,000
$0
48 51 54 57 60 63 66 69 72 75 78 81 84 87 90 93 96 99
Age

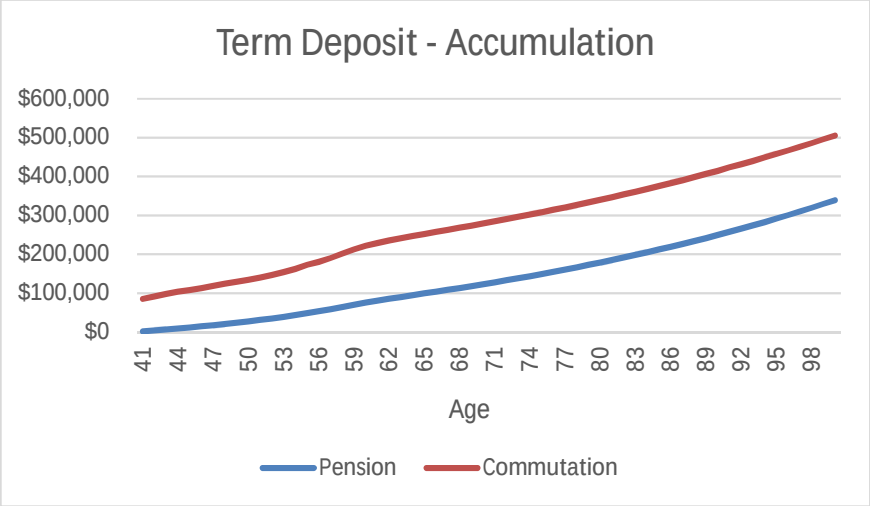
Case 5

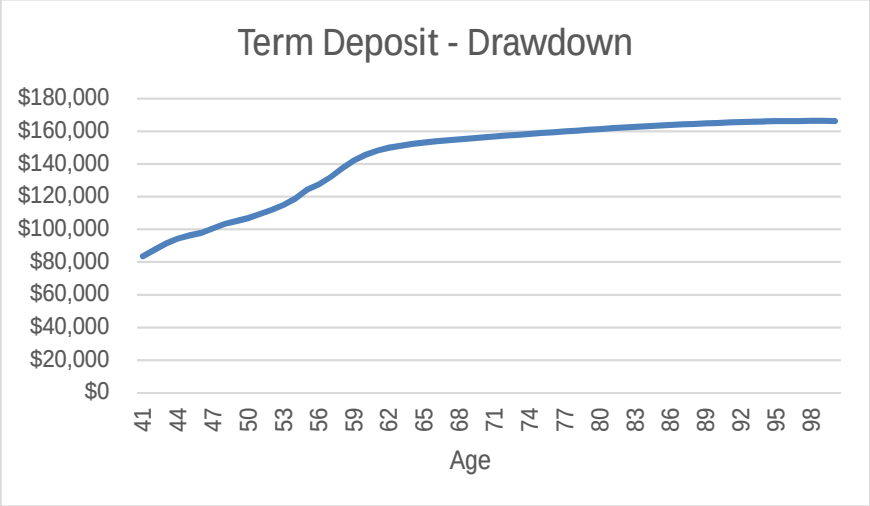

Term Deposit - Accumulation
$500,000
$400,000
$300,000
$200,000
$100,000
$0
37 40 43 46 49 52 55 58 61 64 67 70 73 76 79 82 85 88 91 94 97 100
Age
Pension
Commutation

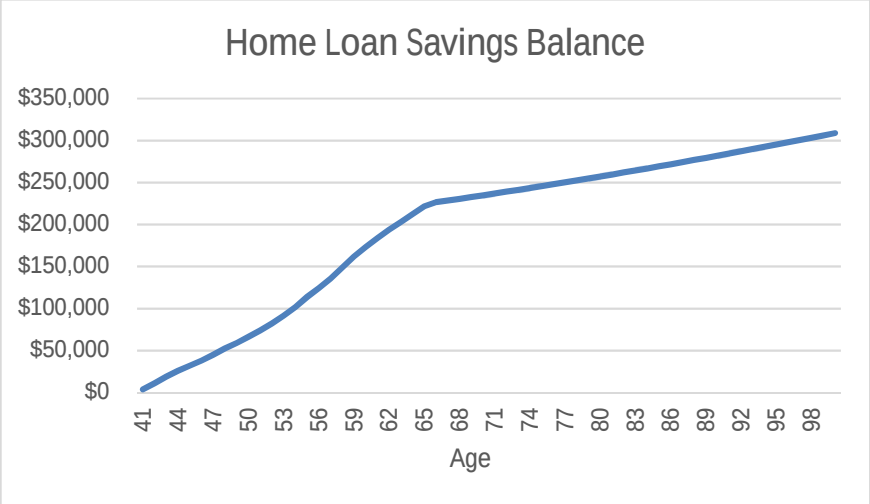

Term Deposit - Drawdown
$160,000
$140,000
$120,000
$100,000
$80,000
$60,000
$40,000
$20,000
$0
37 40 43 46 49 52 55 58 61 64 67 70 73 76 79 82 85 88 91 94 97 100
Age


Home Loan Savings Balance
$300,000
$250,000
$200,000
$150,000
$100,000
$50,000
$0
37 40 43 46 49 52 55 58 61 64 67 70 73 76 79 82 85 88 91 94 97 100
Age

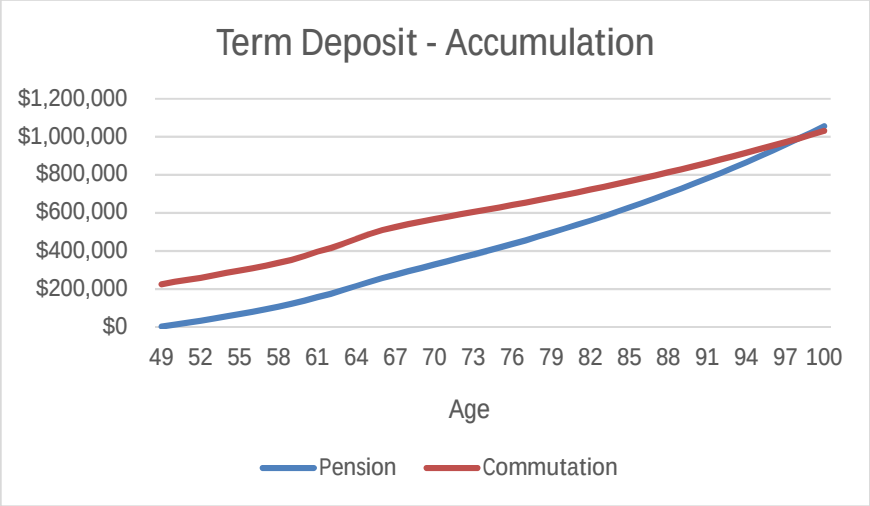
Case 6

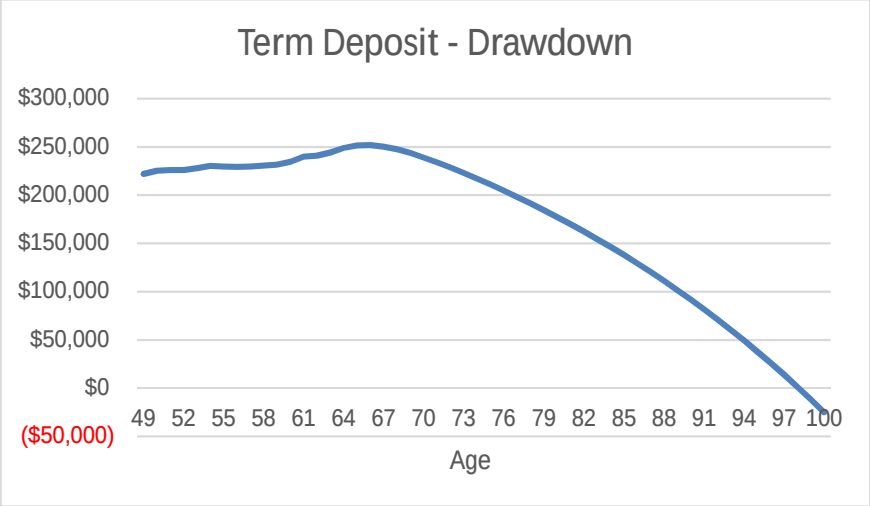

Term Deposit - Accumulation
$600,000
$500,000
$400,000
$300,000
$200,000
$100,000
$0
41 44 47 50 53 56 59 62 65 68 71 74 77 80 83 86 89 92 95 98
Age
Pension
Commutation

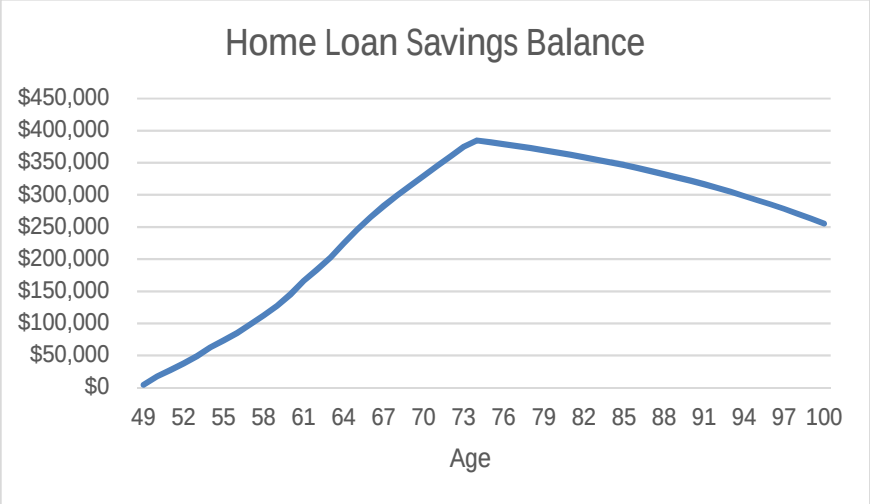

Term Deposit - Drawdown
$180,000
$160,000
$140,000
$120,000
$100,000
$80,000
$60,000
$40,000
$20,000
$0
41 44 47 50 53 56 59 62 65 68 71 74 77 80 83 86 89 92 95 98
Age


Home Loan Savings Balance
$350,000
$300,000
$250,000
$200,000
$150,000
$100,000
$50,000
$0
41 44 47 50 53 56 59 62 65 68 71 74 77 80 83 86 89 92 95 98
Age

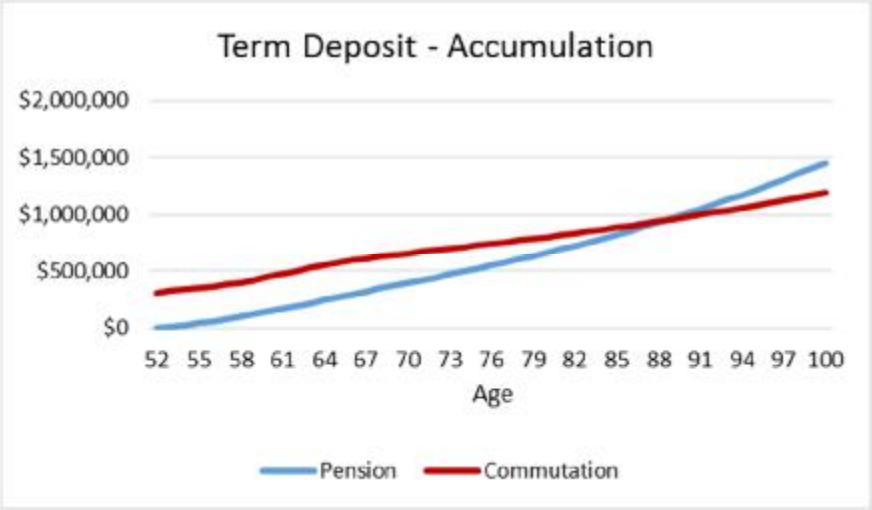
Case 7

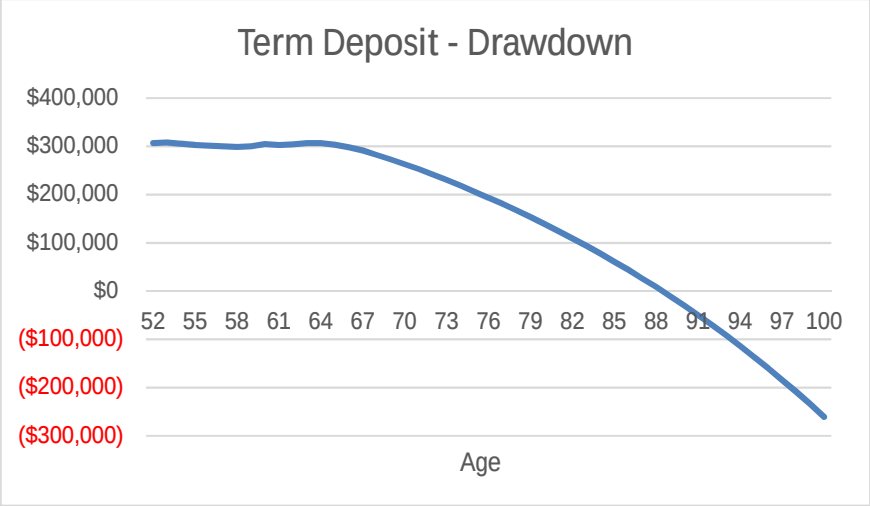

Term Deposit - Accumulation
$1,200,000
$1,000,000
$800,000
$600,000
$400,000
$200,000
$0
49 52 55 58 61 64 67 70 73 76 79 82 85 88 91 94 97 100
Age
Pension
Commutation

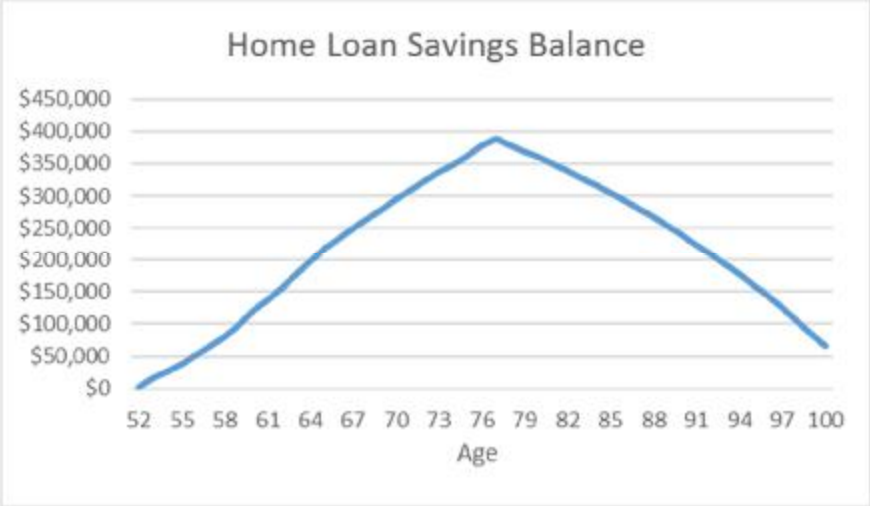

Term Deposit - Drawdown
$300,000
$250,000
$200,000
$150,000
$100,000
$50,000
$0
($50,000)
49 52 55 58 61 64 67 70 73 76 79 82 85 88 91 94 97 100
Age


Home Loan Savings Balance
$450,000
$400,000
$350,000
$300,000
$250,000
$200,000
$150,000
$100,000
$50,000
$0
49 52 55 58 61 64 67 70 73 76 79 82 85 88 91 94 97 100
Age

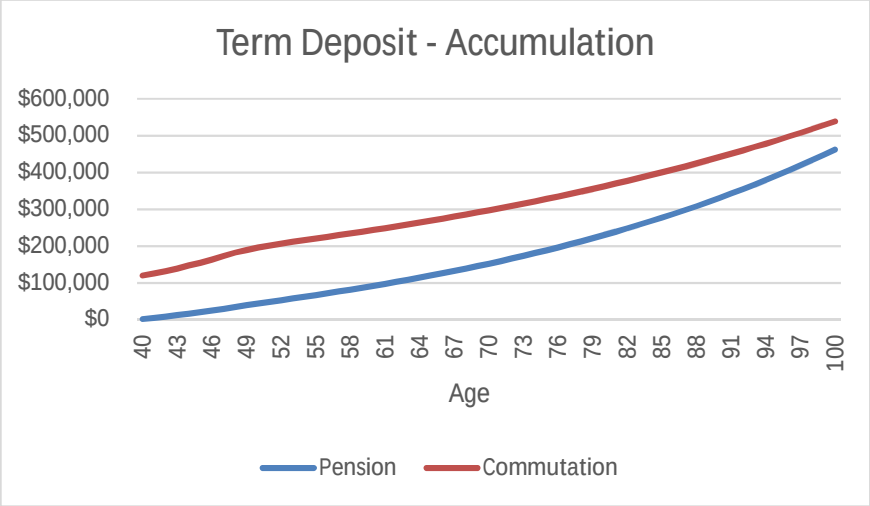
Case 8

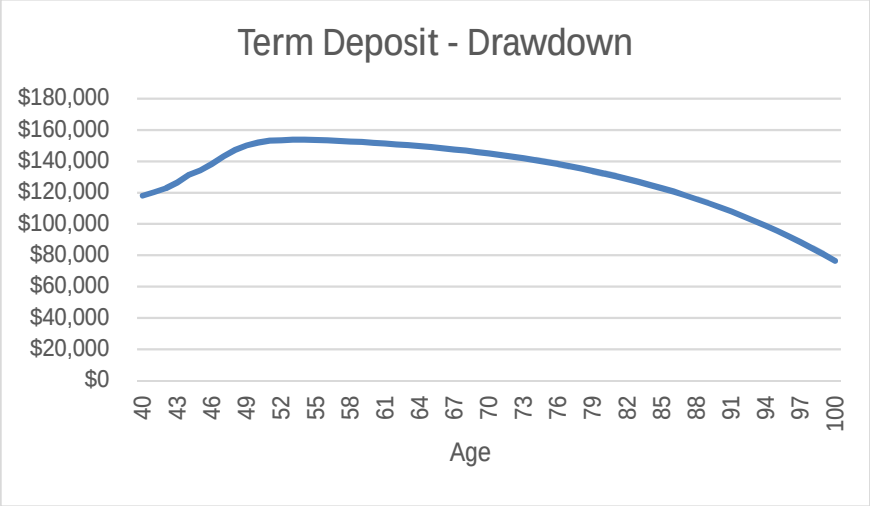

Term Deposit - Accumulation
$2,000,000
$1,500,000
$1,000,000
$500,000
$0
52 55 58 61 64 67 70 73 76 79 82 85 88 91 94 97 100
Age
Pension
Commutation


Term Deposit - Drawdown
$400,000
$300,000
$200,000
$100,000
$0
($100,000)
($200,000)
($300,000)
52 55 58 61 64 67 70 73 76 79 82 85 88 91 94 97 100
Age


Home Loan Savings Balance
$450,000
$400,000
$350,000
$300,000
$250,000
$200,000
$150,000
$100,000
$50,000
$0
52 55 58 61 64 67 70 73 76 79 82 85 88 91 94 97 100
Age

Case 9


Term Deposit - Accumulation
$600,000
$500,000
$400,000
$300,000
$200,000
$100,000
$0
40 43 46 49 52 55 58 61 64 67 70 73 76 79 82 85 88 91 94 97 100
Age
Pension
Commutation


Term Deposit - Drawdown
$180,000
$160,000
$140,000
$120,000
$100,000
$80,000
$60,000
$40,000
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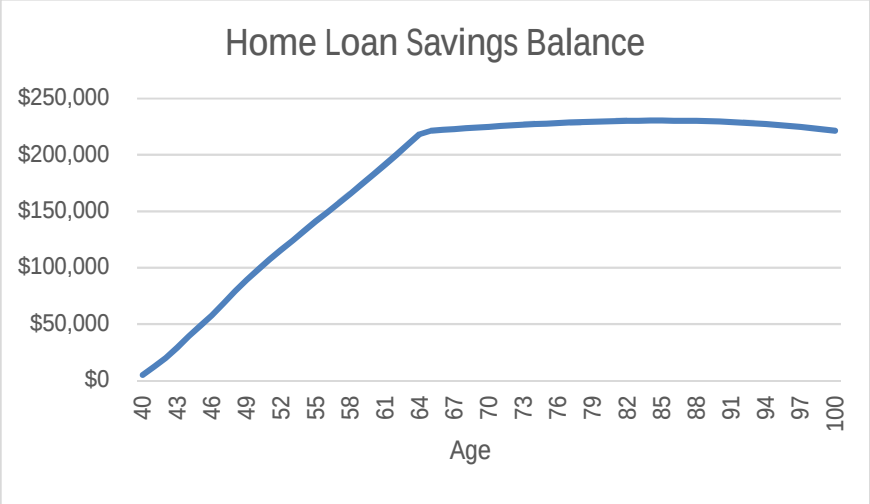
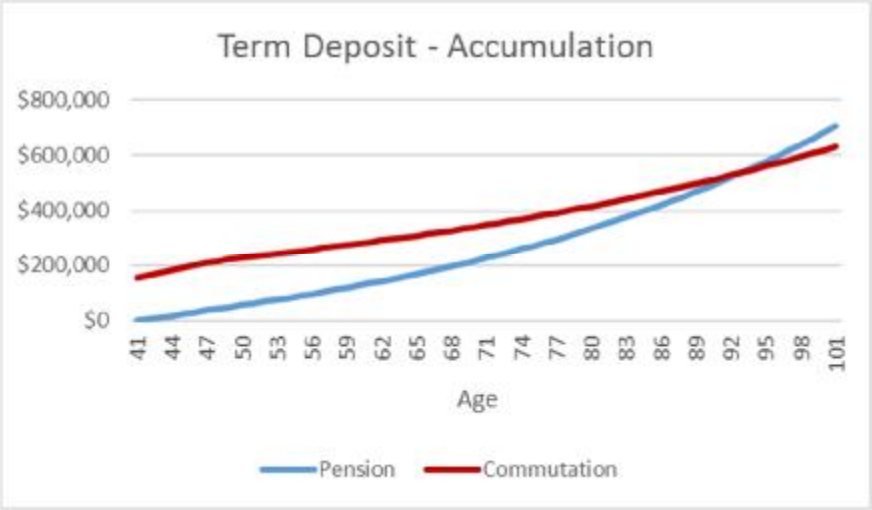
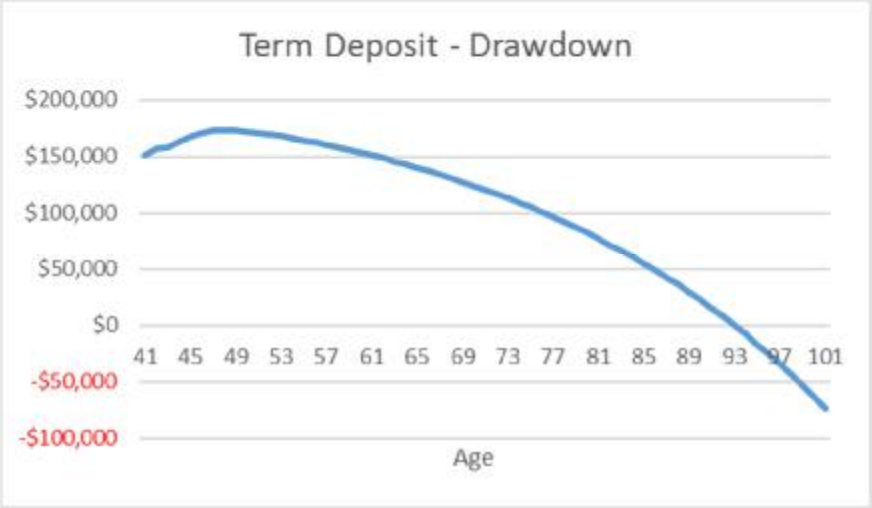
$0
40 43 46 49 52 55 58 61 64 67 70 73 76 79 82 85 88 91 94 97 100
Age


Home Loan Savings Balance
$250,000
$200,000
$150,000
$100,000
$50,000
$0
40 43 46 49 52 55 58 61 64 67 70 73 76 79 82 85 88 91 94 97 100
Age

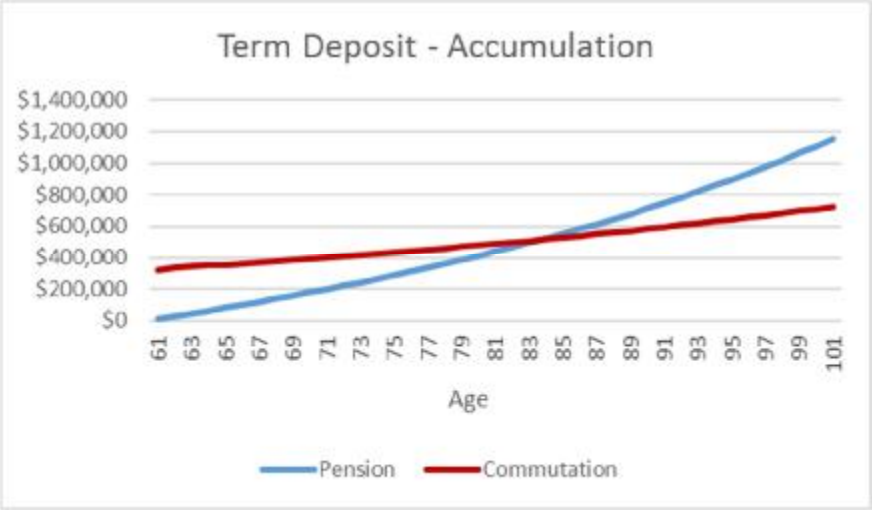
Case 10


Term Deposit - Accumulation
$800,000
$600,000
$400,000
$200,000
$0
41 44 47 50 53 56 59 62 65 68 71 74 77 80 83 86 89 92 95 98 101
Age
Pension
Commutation


Term Deposit - Drawdown
$200,000
$150,000
$100,000
$50,000
$0
-$50,000
-$100,000
41 45 49 53 57 61 65 69 73 77 81 85 89 93 97 101
Age


Home Loan Savings Balance
$250,000
$200,000
$150,000
$100,000
$50,000
$0
41 45 49 53 57 61 65 69 73 77 81 85 89 93 97 101
Age

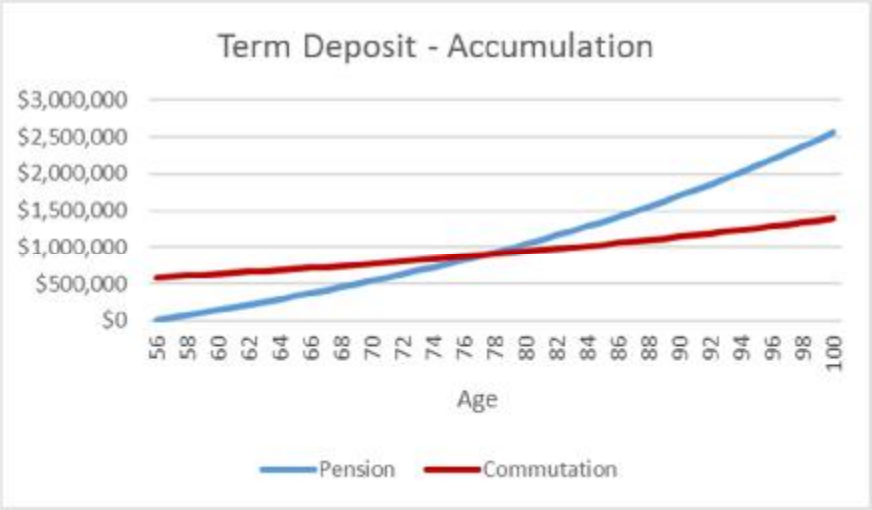
Case 11


Term Deposit - Accumulation
$1,400,000
$1,200,000
$1,000,000
$800,000
$600,000
$400,000
$200,000
$0
61 63 65 67 69 71 73 75 77 79 81 83 85 87 89 91 93 95 97 99 101
Age
Pension
Commutation

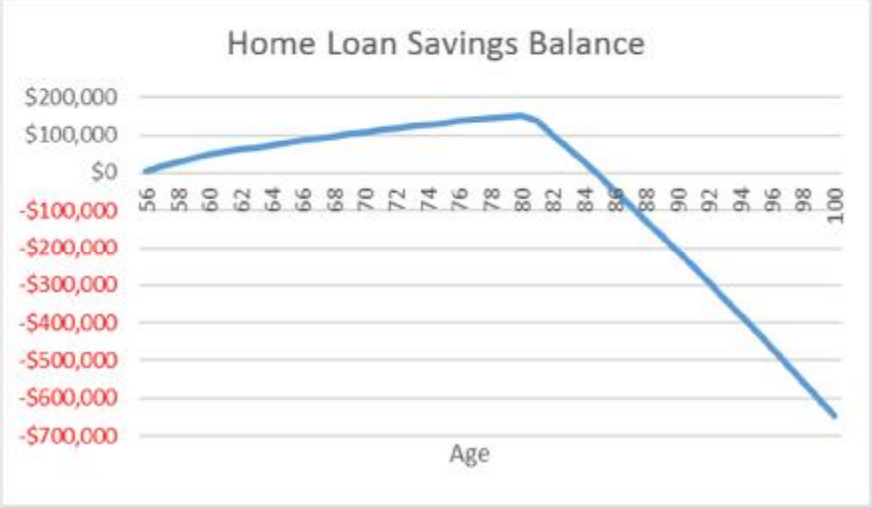

Term Deposit - Drawdown
$400,000
$300,000
$200,000
$100,000
$0
-$100,000
-$200,000
-$300,000
-$400,000
-$500,000
61 63 65 67 69 71 73 75 77 79 81 83 85 87 89 91 93 95 97 99 101
Age


Home Loan Savings Balance
$150,000
$100,000
$50,000
$0
-$50,000
-$100,000
-$150,000
-$200,000
-$250,000
61 63 65 67 69 71 73 75 77 79 81 83 85 87 89 91 93 95 97 99 101
Age

Case 12


Term Deposit - Accumulation
$3,000,000
$2,500,000
$2,000,000
$1,500,000
$1,000,000
$500,000
$0
56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100
Age
Pension
Commutation


Term Deposit - Drawdown
$1,000,000
$500,000
$0
-$500,000
-$1,000,000
-$1,500,000
56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100
Age


Home Loan Savings Balance
$200,000
$100,000
$0
-$100,000
-$200,000
-$300,000
-$400,000
-$500,000
-$600,000
-$700,000
56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100
Age

Appendix E – Case 8 detailed results

Term Deposit – Accumulation

Financial Year	Age	Interest Rate	Pension Payments			Commutation Lump Sum Balance at Year End
			Pension	Total Interest	Balance at Year End	
1999-2000	52	5.16%	2,072	8	2,079	309,179
2000-2001	53	5.13%	14,277	473	16,830	325,050
2001-2002	54	3.90%	14,457	939	32,226	337,740
2002-2003	55	3.96%	14,544	1,563	48,333	351,109
2003-2004	56	4.41%	14,616	2,453	65,402	366,587
2004-2005	57	4.65%	14,682	3,386	83,470	383,649
2005-2006	58	4.68%	14,770	4,247	102,487	401,584
2006-2007	59	5.53%	14,888	6,083	123,459	423,805
2007-2008	60	6.55%	14,948	8,571	146,977	451,547
2008-2009	61	4.57%	15,109	7,063	169,149	472,186
2009-2010	62	5.45%	15,152	9,624	193,926	497,901
2010-2011	63	6.04%	15,244	12,168	221,339	527,962
2011-2012	64	5.18%	15,367	11,871	248,577	555,328
2012-2013	65	4.17%	15,439	10,690	274,706	578,489
2013-2014	66	3.39%	15,520	9,580	299,806	598,110
2014-2015	67	2.95%	15,611	9,087	324,504	615,779
2015-2016	68	2.41%	15,669	8,004	348,177	630,609
2016-2017	69	2.35%	15,727	8,352	372,257	645,402
2017-2018	70	2.22%	15,811	8,427	396,495	659,709
2018-2019	71	2.14%	15,905	8,662	421,061	673,837
2019-2020	72	2.00%	16,009	8,581	445,651	687,314
2020-2021	73	2.00%	16,136	9,074	470,861	701,060
2021-2022	74	2.00%	16,267	9,580	496,708	715,082
2022-2023	75	2.00%	16,402	10,098	523,208	729,383
2023-2024	76	2.00%	16,541	10,630	550,379	743,971
2024-2025	77	2.00%	16,684	11,174	578,237	758,850
2025-2026	78	2.00%	16,832	11,733	606,802	774,027
2026-2027	79	2.00%	16,984	12,306	636,092	789,508
2027-2028	80	2.00%	17,140	12,893	666,126	805,298
2028-2029	81	2.00%	17,302	13,496	696,923	821,404
2029-2030	82	2.00%	17,468	14,113	728,503	837,832
2030-2031	83	2.00%	17,639	14,746	760,888	854,589
2031-2032	84	2.00%	17,815	15,396	794,099	871,680
2032-2033	85	2.00%	17,996	16,062	828,157	889,114
2033-2034	86	2.00%	18,183	16,745	863,085	906,896
2034-2035	87	2.00%	18,376	17,445	898,906	925,034
2035-2036	88	2.00%	18,574	18,164	935,644	943,535
2036-2037	89	2.00%	18,778	18,901	973,323	962,406
2037-2038	90	2.00%	18,988	19,656	1,011,968	981,654

Term Deposit – Drawdown

Financial Year	Age	Balance at Start Year	Pension Paid	Interest Rate	Total Interest	Balance at Year End
1999-2000	52	306,880	2,072	5.16%	2,291	307,107
2000-2001	53	307,107	14,277	5.13%	15,398	308,228
2001-2002	54	308,228	14,457	3.90%	11,752	305,523
2002-2003	55	305,523	14,544	3.96%	11,806	302,785
2003-2004	56	302,785	14,616	4.41%	13,026	301,194
2004-2005	57	301,194	14,682	4.65%	13,676	300,189
2005-2006	58	300,189	14,770	4.68%	13,689	299,107
2006-2007	59	299,107	14,888	5.53%	16,139	300,357
2007-2008	60	300,357	14,948	6.55%	19,172	304,581
2008-2009	61	304,581	15,109	4.57%	13,577	303,049
2009-2010	62	303,049	15,152	5.45%	16,091	303,988
2010-2011	63	303,988	15,244	6.04%	17,893	306,636
2011-2012	64	306,636	15,367	5.18%	15,496	306,765
2012-2013	65	306,765	15,439	4.17%	12,473	303,798
2013-2014	66	303,798	15,520	3.39%	10,041	298,319
2014-2015	67	298,319	15,611	2.95%	8,582	291,290
2015-2016	68	291,290	15,669	2.41%	6,827	282,448
2016-2017	69	282,448	15,727	2.35%	6,441	273,162
2017-2018	70	273,162	15,811	2.22%	5,880	263,231
2018-2019	71	263,231	15,905	2.14%	5,467	252,793
2019-2020	72	252,793	16,009	2.00%	4,896	241,680
2020-2021	73	241,680	16,136	2.00%	4,672	230,217
2021-2022	74	230,217	16,267	2.00%	4,442	218,391
2022-2023	75	218,391	16,402	2.00%	4,204	206,193
2023-2024	76	206,193	16,541	2.00%	3,958	193,611
2024-2025	77	193,611	16,684	2.00%	3,705	180,632
2025-2026	78	180,632	16,832	2.00%	3,444	167,244
2026-2027	79	167,244	16,984	2.00%	3,175	153,436
2027-2028	80	153,436	17,140	2.00%	2,897	139,193
2028-2029	81	139,193	17,302	2.00%	2,611	124,502
2029-2030	82	124,502	17,468	2.00%	2,315	109,350
2030-2031	83	109,350	17,639	2.00%	2,011	93,722
2031-2032	84	93,722	17,815	2.00%	1,696	77,603
2032-2033	85	77,603	17,996	2.00%	1,372	60,979
2033-2034	86	60,979	18,183	2.00%	1,038	43,834
2034-2035	87	43,834	18,376	2.00%	693	26,151
2035-2036	88	26,151	18,574	2.00%	337	7,915
2036-2037	89	7,915	18,778	2.00%	-29	-10,893
2037-2038	90	-10,893	18,988	2.00%	-408	-30,289

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Home Loan

Financial Year	Age	Loan Balance	Home Loan Rate	Loan Repayment	Pension Paid	Savings on Loan	Interest Rate	Total Interest	Balance at Year End
1999-2000	52	306,880	7.03%	3,788	2,072	1,716	5.16%	6	$1,723
2000-2001	53	306,221	7.63%	27,519	14,277	13,242	5.13%	428	$15,393
2001-2002	54	301,916	6.34%	24,578	14,457	10,121	3.90%	799	$26,312
2002-2003	55	296,316	6.57%	25,073	14,544	10,530	3.96%	1,250	$38,092
2003-2004	56	290,533	6.88%	25,739	14,616	11,122	4.41%	1,924	$51,139
2004-2005	57	284,603	7.15%	26,302	14,682	11,620	4.65%	2,650	$65,409
2005-2006	58	278,461	7.36%	26,723	14,770	11,953	4.68%	3,337	$80,699
2006-2007	59	272,023	7.97%	27,917	14,888	13,028	5.53%	4,826	$98,553
2007-2008	60	265,542	8.80%	29,540	14,948	14,592	6.55%	6,929	$120,074
2008-2009	61	259,113	7.28%	26,722	15,109	11,613	4.57%	5,754	$137,441
2009-2010	62	250,977	6.53%	25,454	15,152	10,302	5.45%	7,765	$155,508
2010-2011	63	241,638	7.66%	27,279	15,244	12,034	6.04%	9,752	$177,295
2011-2012	64	232,542	7.45%	26,951	15,367	11,584	5.18%	9,490	$198,369
2012-2013	65	222,569	6.52%	25,622	15,439	10,183	4.17%	8,486	$217,038
2013-2014	66	211,130	5.95%	24,862	15,520	9,342	3.39%	7,520	$233,900
2014-2015	67	198,484	5.78%	24,664	15,611	9,054	2.95%	7,044	$249,997
2015-2016	68	184,944	5.53%	24,385	15,669	8,716	2.41%	6,126	$264,838
2016-2017	69	170,421	5.28%	24,132	15,727	8,404	2.35%	6,311	$279,554
2017-2018	70	154,909	5.22%	24,086	15,811	8,275	2.22%	6,288	$294,117
2018-2019	71	138,527	5.31%	24,156	15,905	8,252	2.14%	6,387	$308,756
2019-2020	72	121,316	4.00%	23,276	16,009	7,267	2.00%	6,248	$322,272
2020-2021	73	102,551	4.00%	23,276	16,136	7,140	2.00%	6,517	$335,929
2021-2022	74	83,022	4.00%	23,276	16,267	7,009	2.00%	6,789	$349,727
2022-2023	75	62,696	4.00%	23,276	16,402	6,874	2.00%	7,063	$363,664
2023-2024	76	41,543	4.00%	23,276	16,541	6,735	2.00%	7,341	$377,740
2024-2025	77	19,528	4.00%	19,862	16,684	3,178	2.00%	7,587	$388,504
2025-2026	78	0	4.00%	0	16,832	-16,832	2.00%	7,602	$379,274
2026-2027	79	0	4.00%	0	16,984	-16,984	2.00%	7,416	$369,706
2027-2028	80	0	4.00%	0	17,140	-17,140	2.00%	7,223	$359,788
2028-2029	81	0	4.00%	0	17,302	-17,302	2.00%	7,023	$349,509
2029-2030	82	0	4.00%	0	17,468	-17,468	2.00%	6,816	$338,857
2030-2031	83	0	4.00%	0	17,639	-17,639	2.00%	6,601	$327,819
2031-2032	84	0	4.00%	0	17,815	-17,815	2.00%	6,378	$316,383
2032-2033	85	0	4.00%	0	17,996	-17,996	2.00%	6,148	$304,534
2033-2034	86	0	4.00%	0	18,183	-18,183	2.00%	5,909	$292,260
2034-2035	87	0	4.00%	0	18,376	-18,376	2.00%	5,661	$279,546
2035-2036	88	0	4.00%	0	18,574	-18,574	2.00%	5,405	$266,377
2036-2037	89	0	4.00%	0	18,778	-18,778	2.00%	5,140	$252,739
2037-2038	90	0	4.00%	0	18,988	-18,988	2.00%	4,865	$238,615
2038-2039	91	0	4.00%	0	19,205	-19,205	2.00%	4,580	$223,990
2039-2040	92	0	4.00%	0	19,428	-19,428	2.00%	4,286	$208,848
2040-2041	93	0	4.00%	0	19,658	-19,658	2.00%	3,980	$193,170
2041-2042	94	0	4.00%	0	19,895	-19,895	2.00%	3,664	$176,940
2042-2043	95	0	4.00%	0	20,139	-20,139	2.00%	3,337	$160,138

Financial Year	Age	Loan Balance	Home Loan Rate	Loan Repayment	Pension Paid	Savings on Loan	Interest Rate	Total Interest	Balance at Year End
2043-2044	96	0	4.00%	0	20,390	-20,390	2.00%	2,999	$142,747
2044-2045	97	0	4.00%	0	20,649	-20,649	2.00%	2,648	$124,747
2045-2046	98	0	4.00%	0	20,915	-20,915	2.00%	2,286	$106,118
2046-2047	99	0	4.00%	0	21,190	-21,190	2.00%	1,910	$86,839
2047-2048	100	0	4.00%	0	21,472	-21,472	2.00%	1,522	$66,889
2048-2049	101	0	4.00%	0	21,763	-21,763	2.00%	1,120	$46,246
2049-2050	102	0	4.00%	0	22,063	-22,063	2.00%	704	$24,887
2050-2051	103	0	4.00%	0	22,372	-22,372	2.00%	274	$2,788
2051-2052	104	0	4.00%	0	22,690	-22,690	2.00%	0	-$19,902

Calculation notes

1. The interest rates shown above have been rounded to two decimal points for presentation purposes. Unrounded interest rates have been used in the calculations.

2. The individual retired part way through the first year shown (1999-2000) and this has been factored in to the results for 1999-2000.

   Term deposit – Accumulation approach

3. Under the Term deposit – Accumulation approach, the lump sum balance at the end of the year is simply the lump sum balance at the end of the previous year plus one year's interest. For example, the closing balance at the end of 2004-2005 was $383,649. The interest rate for 2005-2006 was 4.675%. The interest addition is 4.675% x 383,649 = 17,936. The closing balance should thus be 383,649 + 17,936 = $401,585. The amount shown in the table is one dollar less and this is due to rounding.

4. Under the Term deposit – Accumulation approach, the pensions balance at the end of the year is firstly the pensions balance at the end of the previous year plus one year's interest. For example, the closing balance at the end of 2004-2005 was $83,470. The interest rate for 2005-2006 was 4.675%. The interest addition is 4.675% x 83,470 = 3,902. The balance at the end of 2005-2006 before allowing for pension payments received during the year should be 83,470 + 3,902 = $87,372.

5. To this amount needs to be added pension payments received during the year (2005-2006) of $14,770 and a small amount of interest earned on the pension payments. Assuming pension payments are received halfway through the year on average, approximately half a year's interest is earned on average. The approximate amount of interest earned is 4.675%/2 x 14,770 = 345. The expected end year balance is 87,372 + 14,770 + 345 = $102,487 which is consistent with the figure given above.

Term deposit – Drawdown approach

6. Under the Term deposit – Drawdown approach, the balance at the end of the year is firstly the balance at the end of the previous year less the pension paid. For example, the closing balance at the end of 2004-2005 was $300,189. The pension paid during the year was $14,770. The balance at the end of 2005-2006 allowing for pension payments received during the year should be 300,189 – 14,770 = $285,419.

7. To this amount needs to be added interest received for the year (2005-2006). The interest rate for 2005-2006 was 4.675%. The interest on the opening balance is 4.675% x 300,189 = 14,034. However, this amount needs to be reduced because there were pension drawdowns from the opening balance during the year. Assuming pension payments are received halfway through the year on average, approximately half a year's interest on the pension payments is lost on average. The approximate amount of interest lost is 4.675%/2 x 14,770 = 345. The interest addition for the year is 14,034 – 345 = $13,689. The expected end year balance is 285,419 + 13,689 = $299,108 which is consistent with the figure given above.

Home loan approach

8. Under the Home loan approach, the balance at the end of the year is firstly the balance at the end of the previous year plus the savings in mortgage repayments less the pension paid. For example, the closing balance at the end of 2004-2005 was $65,409. The saving in mortgage repayments for 2005-2006 was $26,723 out of which pension paid during the year was $14,770. This frees up 26,723 – 14,770 = $11,953 which can now be invested increasing the balance to 65,409 + 11,953 = $77,362 before allowing for interest for the year.

9. To this amount needs to be added interest received for the year (2005-2006). The interest rate for 2005-2006 was 4.675%. The interest on the opening balance is 4.675% x 65,409 = 3,058. Interest earned on the funds invested during the year ($11,953) also needs to be added. Assuming that funds were invested, on average, halfway through the year, approximately half a year's interest would be earned on the funds invested. The approximate amount of interest is 4.675%/2 x 11,953 = 279. The interest addition for the year is 3,058 + 279 = $3,337. The expected end year balance is 77,362 + 3,337 = $80,699 which is consistent with the figure given above.

10. The figures for 2024-2025 allow for the fact that the mortgage would be fully repaid part way through the year.

Pension payments

11. The majority of the pension forgone as a result of commutation is unindexed pension but part of it is indexed pension. The amount of annual pension forgone as a result of commutation is 63,274.23 – 49,007.38 = $14,266.85.

12. The individual took a lump sum commutation of 4.85 times the pension before commutation. The component of four times the pension before commutation is commutation of unindexed pension. The remainder is commutation of indexed pension.

13. The annual amount of unindexed pension commuted is 4/4.85 x 14,266.85 = $11,766.47.

14. The annual amount of indexed pension commuted is 0.85/4.85 x 14,266.85 = $2,500.38.

15. Up to July 2001, pensions were indexed annually in July. Subsequently, pensions were indexed twice yearly in January and July. From July 2014, differential indexation rates applied depending upon the age of the pensioner. For those pensioners under age 55, pension indexation continued to be based on CPI increases. For those pensioners aged 55 or more, pension indexation was based on the methodology used to index the Age Pension. This has been allowed for in our analysis.