Australian Government
Australian Government Actuary

COMMONWEALTH EXPENDITURE ASSOCIATED WITH RETIREMENT (SUBCLASS 410) VISA

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Executive summary

In late 2007, the Department of Immigration and Citizenship (DIAC) approached the Australian Government Actuary (AGA) about the possibility of developing a model of the potential direct costs to the Commonwealth of granting permanent residence to holders of a Retirement (Subclass 410) visa. This is a closed population whose members are currently not eligible for a range of Commonwealth Government funded programs available to permanent residents, most notably in relation to health services.

The proposal to be costed assumed that Subclass 410 visa holders would be able to apply for permanent residence after holding a Retirement visa for ten years. Once granted permanent residence they would immediately be able to access health and aged care services and, after ten years as a permanent resident, would be eligible to apply for the age pension.

In 2008, AGA constructed a model to estimate the costs which would be incurred by the Commonwealth if the Subclass 410 visa holders chose to take up the option of permanent residence. The initial work relied on a count of visa holders as at the end of 2007 cross-tabulated by the year in which they would achieve the ten year residency requirement and their age at that time. Subsequently, unit record data became available which allowed couples to be matched and costs to be modelled on an individual basis. The results in this report are based on the population of Subclass 410 visa holders as at 30 June 2010.

The model projects health, aged care and income support costs over a 60 year period and then discounts these costs to arrive at an estimate of the present value of costs to the Commonwealth. Assumptions in each of these areas have been set based on information available from relevant sources and a range of parameters have been included in the model to allow the sensitivity of the cost estimates to be tested.

The total cost of any proposal to provide a pathway to permanent residence for this group will depend upon the estimated level of take-up and the particular eligibility criteria imposed. For the purpose of this report an assumption of 100 per cent take-up of those currently recorded as holding a Subclass 410 visa has been used to estimate a total cost of $1,068m in present value terms. Health costs represent a large majority of this total at $833m, aged care a much smaller, but still significant, cost at $227m and income support payments account for only $9m. Cashflows are projected to increase rapidly over the first few years of the scheme. Under the base assumptions, costs increase from $24m in the first year to $55m in the fifth year.

A little under a 30 per cent of those holding a Subclass 410 visa as at 30 June 2010 would be immediately eligible for permanent residence assuming a ten year qualification period. The remaining population would become eligible over the following ten years. After taking account of expected mortality over the intervening period, we estimate that 90 per cent of the current population would achieve permanent residence (under the 100 per cent take-up assumption). The average cost per individual projected to take up the option on this basis is therefore $165,000.

In practice, it is unlikely that all those eligible to take up the option of permanent residence will do so. This assumption does, however, provide an indicative upper limit on the total cost for the current population of visa holders. Depending upon the policy parameters, it is also possible that a proportion of those who have allowed their visa to lapse but have the option of renewing in future could look to accessing permanent residence if a pathway were provided. We have no way of estimating the possible costs associated with this group.

While the cost per individual can be used to estimate the total cost of a particular proposal by taking into account the impact of policy settings on the likely take-up rate, it needs to be remembered that per capita costs may well vary under different take-up scenarios. For example, the size of any Visa Application Charge (VAC) could have a significant impact on both the level of take-up and the demographic composition of the resulting applicant group. It is likely that a high VAC would significantly reduce the rate of take-up. It is also possible that a higher VAC will skew the applicant group towards younger (and hence more expensive) individuals who would be more likely to see benefit in taking up permanent residence. The costs reported do not make allowance for any such selection effects.

The considerable uncertainty associated with any long term projections should also be borne in mind. This is particularly the case in relation to health expenditure where there have been major changes in the quantum and incidence of costs over recent years. Given the importance of health costs in driving outcomes, the results should be seen as broadly indicative rather than accurate forecasts.

In order to demonstrate the sensitivity of outcomes we have also looked at seven alternative scenarios with slightly different assumptions in relation to health cost inflation and mortality. The costs under these scenarios vary from $815m to $1,417m.

1 Introduction

1.1 In 2002, the then Department of Immigration, Multicultural and Indigenous Affairs (DIMIA) sought the advice of Australian Government Actuary (AGA) on the financial implications of a proposed new visa category for parent migration. Under the proposal, successful applicants were to be required to make a significant contribution towards the costs expected to be met by the Commonwealth Government through a large second visa application charge.

1.2 In response to this request, we developed a model to estimate cashflows and the net financial impact (in present value terms) of the proposal. The model was also used to explore the sensitivity of the results to key parameters. The model assumptions were subsequently updated in 2008 to reflect more recent data on health and aged care costs.

1.3 At the time we undertook this update, the Department of Immigration and Citizenship (DIAC) asked AGA to also look at the costs of a proposal to grant permanent residence to those holding a Retirement (Subclass 410) visa. Because this visa subclass is no longer open to new applicants, there is a closed population who could potentially benefit from this proposal if it were implemented. This group do not currently have access to Australian health and welfare benefits but would become eligible if granted permanent residence. DIAC sought our advice on the costs that might be associated with this proposal using the same present value framework as we adopted for our original work on the parent migration visa.

1.4 Under the proposal, Subclass 410 visa holders would be able to apply for permanent residence after holding the visa for ten years. At this point, they would have immediate access to health and aged care services. They would not, however, be eligible for the age pension until they had a further ten years as a permanent resident in Australia.

1.5 In costing this proposal, we have relied primarily on the assumptions which had been used to estimate the costs associated with the parent migration visa in 2008. The minor exceptions relate to mortality and access to income security payments. The results from the most recent Australian Life Tables (ALT2005-07) were not available in 2008 but have been incorporated in this latest costing. These tables showed a continuing reduction in mortality at most ages.

1.6 In relation to income security payments, it is necessary to adopt a different approach from that used for the contributory parent visa, reflecting the conditions under which the two visas are granted. The Retirement visa population are assumed to have significant financial resources but unrestricted access once they have satisfied the residence requirements. By contrast, the contributory parent visa is granted under provisions which severely restrict access to income security benefits.

1.7 This report sets out the basis for the assumptions adopted and the results generated by the model when applied to the population of visa holders as at 30 June 2010.

1.8 This report has been prepared by Susan Antcliff, FIAA.

2 Data

2.1 Data was required both on the characteristics of the current visa population which forms the input to the model and to set assumptions incorporated in the model.

Input data

2.2 The results in this report rely on unit record data provided by DIAC on the 7,215 individuals holding a Retirement visa as at 30 June 2010. Note that this data does not include all those who could potentially enter Australia on a Retirement visa, since some of those who have previously held the visa may have allowed it to lapse but would be eligible to reapply for a Retirement visa in future. This issue is discussed further below.

2.3 The most important fields on the unit record data for the purposes of the analysis were gender, date of birth and the grant date from which the period that a visa holder had held a Retirement visa should be measured. Eligibility for permanent residence was assumed to occur ten years after the grant date. It is possible that further conditions relating to the period of time actually spent in Australia could be imposed on potential applicants for permanent residence, as an indication of commitment to living in Australia. The data we held did not allow for such conditions to be incorporated in the model.

2.4 Other information included on the unit record file regarding grant number, date of entry, nationality, postcode and whether an individual entered as a primary or secondary applicant made it possible to form a view on individuals who were in a couple relationship. Using some or all of these variables, we were able to match 2,888 couples with the remaining 1,439 individuals assumed to be single. On this basis, around 80 per cent of the Retirement visa holders were married as at 30 June 2010.

2.5 Overall, there were 3,430 males and 3,785 females on the file so that females represented 52 per cent of the population.

2.6 Table 1 summarises the 7,215 records by the year in which a visa holder would be eligible to apply for permanent residence, based on a ten year residency requirement, and their age at that time. Note that this makes no allowance for mortality over the period until the residency requirement would be met.

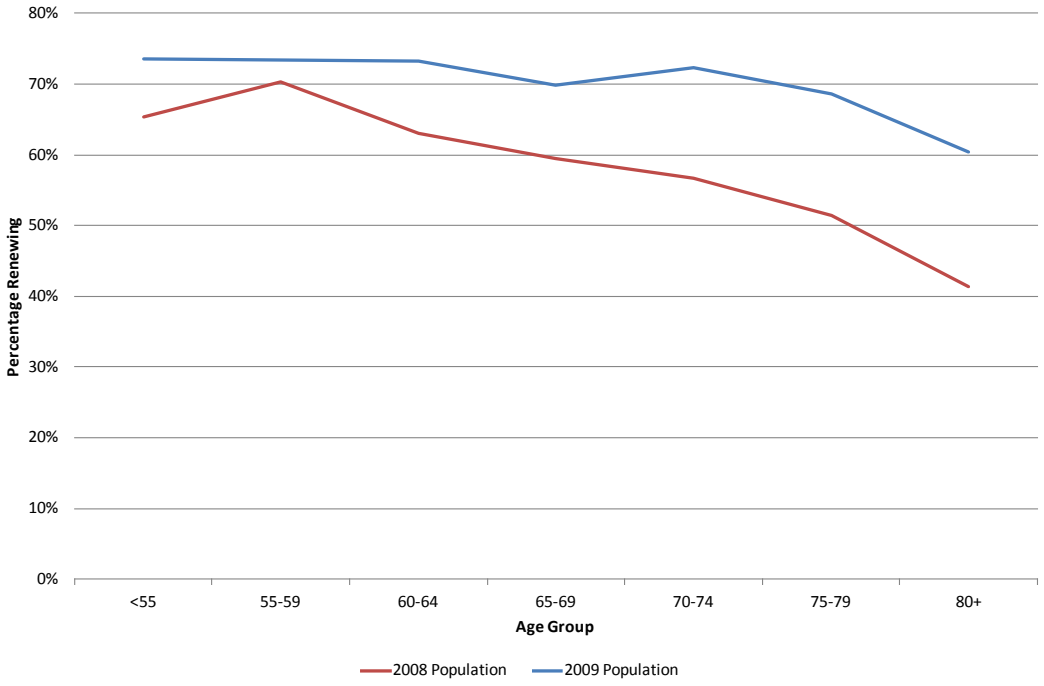
Table 1: Population of Subclass 410 Visa Holders as at 30 June 2010

Age at eligibility	Year of eligibility								
	Immediate	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Less than 60	42	21	21	36	29	32	2	3	0	3
60 to 64	90	41	59	76	84	64	10	0	0	0
65 to 69	329	170	271	402	365	348	32	5	0	4
70 to 74	572	162	229	346	280	304	33	6	0	5
75 to 79	482	118	161	234	202	173	17	2	0	0
80 to 84	302	76	90	103	96	70	9	2	2	0
85 or more	249	55	78	100	54	53	9	0	2	0
Total	**2,066**	**643**	**909**	**1,297**	**1,110**	**1,044**	**112**	**18**	**4**	**12**

2.7 The preceding table shows the population as recorded at 30 June 2010. The population of Subclass 410 visa holders has fallen quite markedly over the past two years. While, it is a relatively elderly population, with an average age of 70 as at 30 June 2010, the fall in numbers has been well above what would be expected as a result of mortality. It is difficult to get a precise handle on these issues because we have only three data points — 2008, 2009 and 2010. We also understand that DIAC may not be informed of the death of a visa holder and failure to renew a visa could be the first indication that death has occurred. Given that, until last year, visas were granted for four years (now ten years), the rate at which visas are not renewed is likely to encompass deaths over the preceding four years.

2.8 Figure 1 shows the renewal rate of visas which expired during the year for the populations recorded in 2008 and 2009, disaggregated by age group.

Figure 1: Visa renewal rates



2.9 It can be seen that there is some decline in renewal rates with age which could be assumed to reflect the higher mortality associated with older ages. However, even allowing for deaths over a four year period, the expected non-renewals due to mortality would be less than 2 per cent for ages under 60 and only reach around 5 per cent at age 70. This suggests there is a significant base level of non-renewal, due to factors other than death, of possibly 25 to 30 per cent of visas expiring in a given year.

2.10 Under the current rules, those who have held a Subclass 410 visa in the past are eligible to reapply even if they have allowed the visa to lapse. In 2009/10, for example, 59 of the 646 individuals who did not renew their visas when they expired during 2008/09 were granted a new visa. A further 48 who must have had a visa

prior to 2008 also renewed. This raises the possibility there may be a material number of lapsed visa holders who would have the option to be reapply for a visa in future and this needs to be borne in mind in considering the costs reported here. At the same time, the attachment of this group to Australia must be open to question and the proportion of them who might choose to exercise the option to re-apply for a visa is highly uncertain.

2.11 There is a further much smaller group of people who have disappeared from the visa population whose visas did not expire during the year. For example, there were 135 individuals who appeared on the 2009 data with a visa expiry date later than 30 June 2010, but who were not present on the 2010 file. From discussions with DIAC, there appears to be a number of explanations for these 'disappearances'. The most likely is that they have transferred to another visa, particularly one of the parent visas, but it is also possible that they have advised that they are leaving without an intention to return or that their death has been advised by a third party. In any case, it seems reasonable to assume that these are permanent removals from the potentially eligible population.

Data used to set assumptions

2.12 In order to set the assumptions used in the models, we relied on data and advice from a variety of sources, including:

- the Australian Institute of Health and Welfare (AIHW);
  - spending on hospitals and aged care;
  - hospital separation rates;
  - long term rates of health expenditure inflation;
- the Health Insurance Commission;
  - Medicare benefits by age;
- the Department of Health and Ageing;
  - Pharmaceutical Benefits Scheme spending by age;
- the Productivity Commission;
  - age related per capita health expenditure;
  - age related usage rates of aged care and per capita costs of aged care;
- Centrelink;
  - eligibility and income test arrangements for age pensions;
  - qualitative advice on the operation of the Assurance of Support;

- the Department of Families, Housing, Community Services and Indigenous Affairs;
  - qualitative advice on the relationship between age and pension entitlement;
- the Australian Taxation Office;
  - advice on the tax treatment of foreign nationals resident in Australia; and
- the Treasury;
  - data on Commonwealth health expenditure by age.

2.13 It should be noted that no data was available that related specifically to the population being modelled and that we have therefore relied on the experience for the Australian population as a whole.

2.14 Further details on the assumptions adopted are provided in the following section.

3 Assumptions

3.1 In setting the assumptions, three categories of expenditure were considered:

- health expenditure (covering hospital, pharmaceuticals, Medicare and other, including the private health insurance rebate);
- income support (the age pension); and
- expenditure on aged care services.

3.2 Assumptions were required both in relation to what the current levels of Commonwealth expenditure are estimated to be and how these costs might be expected to grow over time. Assumptions were also required for mortality, levels of take-up and macroeconomic variables including inflation, wage growth and Gross Domestic Product (GDP). A full listing of the assumptions adopted is included at the appendix to this report. The following discussion deals with the derivation of the assumptions.

Health costs

3.3 Health costs are the biggest contributor to total Commonwealth costs associated with this proposal by a considerable margin. As has been well-documented by other agencies including AIHW and the Productivity Commission, health costs increase quite dramatically with age. Furthermore, health costs have been growing more quickly for the older age groups as procedures that would not previously have been available are extended to the elderly.

3.4 We have relied on two main sources of data in deriving the initial estimates of per capita health costs. The first is internal Treasury data showing average per capita expenditure for broad age groups. The figures cover Commonwealth expenditure on hospitals, the Pharmaceutical Benefits Scheme, Medicare and the Private Health Insurance Rebate in 2005/06. The second source was the Productivity Commission model built for their 2005 report on the Economic Implications of an Ageing Australia which included a distribution of per capita health expenditure by single year of age. These estimates included both State and Commonwealth expenditure and dated from 2002/03.

3.5 As we wanted per capita costs by single year of age, our approach was to assume that the single age relativities reported by the Productivity Commission were still applicable. We then rebased the Productivity Commission estimates to give the averages for the age bands reported in the Treasury numbers using population estimates as at 30 June 2006. The estimated per capita costs for 2005/06 were then inflated to take account of the expected growth in health costs over the five years to 2010/11.

3.6 The resulting estimates do not distinguish between the health costs for someone who is assumed to die during the year and someone who is assumed to survive. On

average, the health costs in a year for someone who dies are considerably more than the costs for someone of the same age who does not. The exact multiple is open to question but a factor of 8 falls within the range generally considered reasonable and we have used this for our base scenario. The health cost for a survivor can then be estimated by taking account of mortality rates using the following formula:

$$\text{Average health cost for survivor} = \frac{\text{Average health cost at age x}}{P_x + 8 \times (1 - P_x)}$$

where P_x is the probability that an individual aged exactly x years survives to age x+1 years.

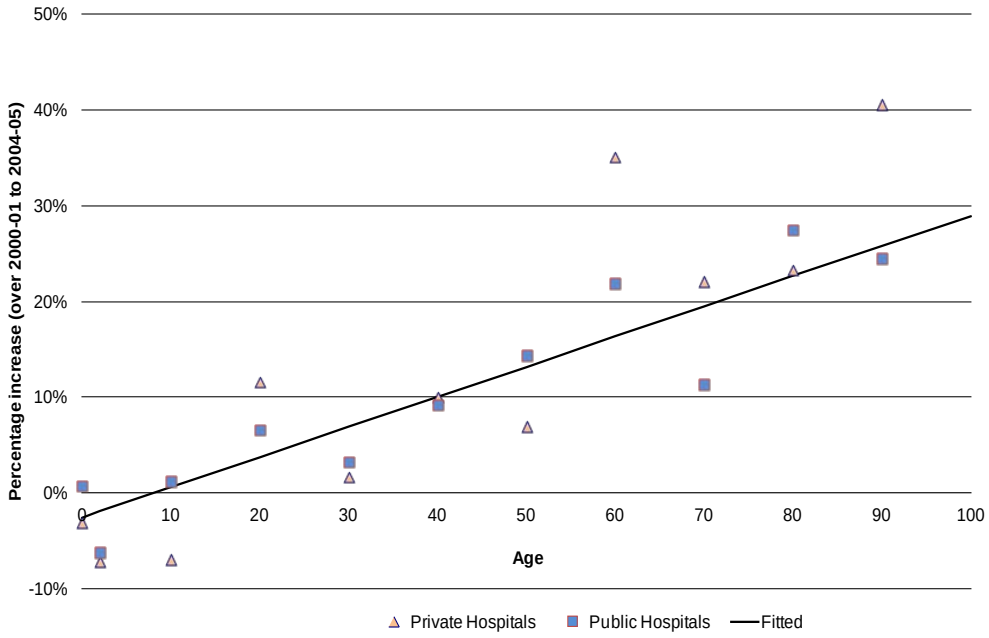
3.7 The health costs estimated for a survivor at each age are shown at Table 1 in the Appendix to this report. A higher multiple will lead to lower estimated costs for survivors but the overall results are relatively insensitive to this variable.

3.8 Health costs have grown at rates well in excess of general growth in the economy over recent years and the view from both AIHW and the Productivity Commission is that this is likely to continue for some time into the future. Clearly at some point, this will become unsustainable but, for the time periods involved in the current costing exercise, we consider it reasonable to assume that this will be the case. The assumption recommended by AIHW of health cost inflation of 0.7 percentage points in excess of GDP growth has therefore been used.

3.9 In order to take account of the recent experience of higher growth in health expenditures of older age groups, we looked at growth in hospital separations as a proxy for the differential inflation.

3.10 Figure 2 shows the percentage increase in hospital separations between 2001/02 and 2005/06 at different ages.

Figure 2: Increase in hospital separation rates



Source: AIHW Australian Hospital Statistics 2005/06.

3.11 We have fitted a straight line to the public hospitals series to come up with a percentage increase at each age. Weighting these percentage increases by the population at each age gives an aggregate increase in health costs attributable to the changing hospital separation rates and a constant was added to this to give the overall increase of 0.7 percentage points above GDP.

3.12 It is not credible that these differential rates of increase will be maintained indefinitely into the future. At the same time, the considerable weight of people moving into the older age groups over the next few decades will lead to political pressure to increase resources devoted to these groups. We have used a logistic curve to moderate the difference from the long term average at each age so that after 20 years the rate of increase at all ages is 0.7 percentage points above GDP.

3.13 The initial difference from the long term assumption at each age is shown at Table 2 in the Appendix.

3.14 Given that around 65 per cent of potentially eligible Subclass 410 visa holders would be aged 70 or more at the time they were able to apply for permanent residence, the costings are quite sensitive to an assumption that per capita health costs for the elderly will grow faster than average per capita costs. We have, therefore, also included a scenario which assumes that per capita health cost inflation is fixed at 0.7 percentage points above GDP, regardless of age, over the entire projection period.

3.15 It could be argued that Subclass 410 visa holders are likely to be healthier than the general population given the health checks imposed as part of the visa application

process, their geographic mobility and economic resources. A parameter was included in the model to allow for this possibility. When this parameter is set, mortality and health costs for a person of a particular age are taken to be the values that would apply for someone a specified number of years younger.

3.16 Somewhat counter intuitively, the net effect of assuming a healthier population in this way is an increase in health costs. This is because of the excess health inflation and particularly the higher growth rates at older ages. In other words, because health costs are increasing faster than the discount rate, the value of health expenditure for any given age will be greater if the expenditure occurs later.

3.17 The base results included in this report are calculated on the assumption that there is no difference between the Retirement visa population and the general population. However, we have also run a scenario assuming that Retirement visa population has the health characteristics of people three years younger.

Aged care costs

3.18 Aged care expenditure through support for residential and community based services is the other major cost item. We have derived per capita aged care costs from the models developed by the Productivity Commission for their 2005 report on ageing. These models projected the costs to the Commonwealth of high and low care residential accommodation (nursing homes and hostels respectively), the Home and Community Care program and the Community Aged Care Packages together with usage rates of the different programs by age. We have converted this into an overall per capita cost by single year of age.

3.19 Aged care costs are driven primarily by wages and, accordingly, we have assumed that these costs will increase in line with wage growth. The initial per capita costs are shown in Table 3 in the Appendix.

Income support benefits

3.20 Given the age distribution of the Subclass 410 visa population, the age pension is the income support benefit most likely to be paid. Under current income support rules, age pension is not payable until a visa holder has been a permanent resident for ten years. This period is counted from the date at which permanent residence is granted.

3.21 In the intervening period, it is possible that Special Benefits might be granted in hardship cases. However, the substantial financial resources required at the time of grant of the Retirement visa suggests that there should be minimal, if any, calls on Government income support during the ten year qualification period. This visa also requires that applicants have no dependants except a partner (married or de facto). We have, therefore, assumed that no income support benefits will be received over this period and there are no dependent children who would qualify for Family Tax Benefit.

3.22 Over time, however, private resources are likely to be run down and income support could be expected to become more significant source of household income.

3.23 To take account of this possible scenario, we modelled a situation where applicants initially had a private income equivalent to $60,000 per annum, but that this grew by only 2 per cent per annum while the age pension increased by 4 per cent per annum. This level of income is greater than the point at which the age pension currently cuts out. Over time, however, the differential rates of increase in the private income and the age pension mean that couples and then single people will eventually become eligible for a part pension. Tables 4 and 5 in the Appendix show the single and married rates of pension payable in future years based on these assumptions. Note that a scenario of declining private resources might be more likely still if a substantial Visa Application Charge were payable.

3.24 The model takes account of the initial marital status of the individuals in the population (assigned as described earlier) and their survival probabilities in calculating the likelihood of a single or married rate of pension being payable at any time in the future and then uses the projected entitlements to calculate a probability weighted pension entitlement.

Mortality assumptions

3.25 We have modelled mortality based on the latest available Australian Life Tables: ALT2005-07. As noted above, there is a question around whether the health status of this group might be better than the general population. While our base scenario assumes that applicants will experience the mortality of someone in the general population we have included a parameter which allows mortality to be adjusted to be equivalent to that of a person who is a certain number of years younger. As noted above, this factor is also assumed to flow through into health costs.

3.26 The mortality rates of the Australian population have improved substantially over the last century and it is quite likely that they will continue to improve. We have included a parameter which provides for continuing mortality improvement at either the rates observed over the last 25 or 100 years. The effect of including future mortality improvement is shown in the sensitivity analysis.

Financial assumptions

3.27 Assumptions are required on the rate of increase in the CPI, wage costs, GDP and a suitable discount rate.

3.28 We have maintained the assumption that the CPI will increase at a rate of 2.5 per cent, per annum. This is in line with the Reserve Bank target range for price inflation and the Treasury long term view on inflation. This is also the rate that AGA currently uses in most of its long term projections.

3.29 The other financial assumptions have been set so as to be consistent with a CPI assumption of 2.5 per cent, per annum.

3.30 Wage costs are assumed to grow by 4 per cent, per annum. This again is consistent with the Treasury's long term outlook on the macroeconomy and is considered suitable for projections that extend 60 years into the future. The wage inflation assumption is used to index age pension entitlements and aged care costs.

3.31 Nominal GDP is assumed to grow by 5.5 per cent, per annum. GDP growth is used as the base to which the excess health cost inflation of 0.7 percentage points is added.

3.32 We have adopted a discount rate of 6 per cent or 3.5 percentage points above the inflation assumption. This is in line with the assumptions we use for similarly long term projections and is consistent with yields over most of the last decade on Commonwealth Government long term bonds.

3.33 The possible taxation implications of a change in residency status are very difficult to quantify in the absence of data on the amount and source of income currently being received by Retirement visa holders. Under current taxation laws, it does seem likely that some income which is currently not taxed in Australian would become taxable and so give rise to additional taxation revenue. However, it also needs to be remembered that, with permanent residency, the incentives which might affect how people arrange their financial affairs are likely to change. Thus, even if it were available, information on current income sources may not provide a good guide to taxation outcomes.

3.34 Retirement visa holders who do not have access to Medicare benefits are not liable to pay the Medicare levy. With a change to permanent residence, the Medicare levy would become payable resulting in some additional revenue. Again, this is difficult to quantify without data on the incomes of Retirement visa holders. However, given the financial hurdles which this group have needed to satisfy it seems likely that a substantial majority would be paying the Medicare levy. DIAC advise that there are a small subset of the population who may already have access to some Medicare benefits through Reciprocal Health Care Agreements. DIAC's view is that, at a maximum, 5 per cent of the total population is likely to qualify under these arrangements.

3.35 In our original costing for the Contributory Parent Visa, similar difficulties meant that we restricted our analysis to the tangible costs under Commonwealth Government programs. Benefits, both tangible, in the form of provision of voluntary services or taxes which might be paid, and intangible in terms of the contribution of the migrants to Australian society more generally were ignored. We have maintained this approach for the current exercise.

Visa take-up

3.36 We have based our cost estimates on an assumption that all current Retirement visa holders who meet the requirement of having held this visa for at least ten years will choose to take up the option of permanent residence. As such, the costs

reported can be treated as an upper limit (before taking account of the possibility of lapsed visa holders choosing to reapply or the uncertainty attaching to the cost estimates themselves).

3.37 In practice, the level of take-up will depend upon the policy settings applied to the proposed visa arrangement and individuals' judgements about the likely benefits that would accrue from the change in status from temporary to permanent residence.

3.38 For example, imposition of health and character requirements may reduce the number of successful applicants; a residency requirement could significantly reduce the number of applicants entitled to apply for permanent residence and/or delay when they are able to apply, thus raising the average age of applicants; and the level of any VAC may also influence the number and age demographic of applicants. It should be noted that the average cost per person should be considered only broadly indicative, particularly where the policy settings are likely to alter the age demographic of the cohort.

4 The model

4.1 The model starts with the actual population of Subclass 410 visa holders as recorded on 30 June 2010. Based on the assumptions set out in the previous section, it then projects the health, aged care and income support costs for each individual over a period of 60 years. Allowance is made for mortality during the period before qualifying for permanent residence. By year 60, the cashflows are immaterial in present value terms. These cashflows are discounted and aggregated to arrive at a present value of the various cost elements.

4.2 While we have set base assumptions, a range of variables can be altered to test the sensitivity of outcomes to the assumptions. These parameters include:

- the economic assumptions around price and wage inflation and GDP growth;
- the discount rate used to calculate the present value of future cashflows;
- the overall rate of health cost inflation;
- whether a further allowance for differential age based health cost inflation rates is included; and
- mortality improvement factors and/or an allowance for the population to have mortality rates equivalent to those of people a specified number of years younger.

4.3 The model output is a series of estimates of cashflows in nominal dollars (that is, as those costs will be reported in future year dollars) and the present value of all cashflows over the next 60 years split between health aged care and income support costs.

5 Results

5.1 Table 2 shows the present value of the various types of future expenditure, together with the percentage that they represent of total future expenditure. These expenditures are based on an implementation date of 1 July 2011 and a population of 6,475 of current Subclass 410 visa holders taking up the option of permanent residence. The average per capita cost is $165,000. However, it should be noted that the costs per individual could vary widely from this average and that, as a result, average per capita costs will be very sensitive to take-up decisions.

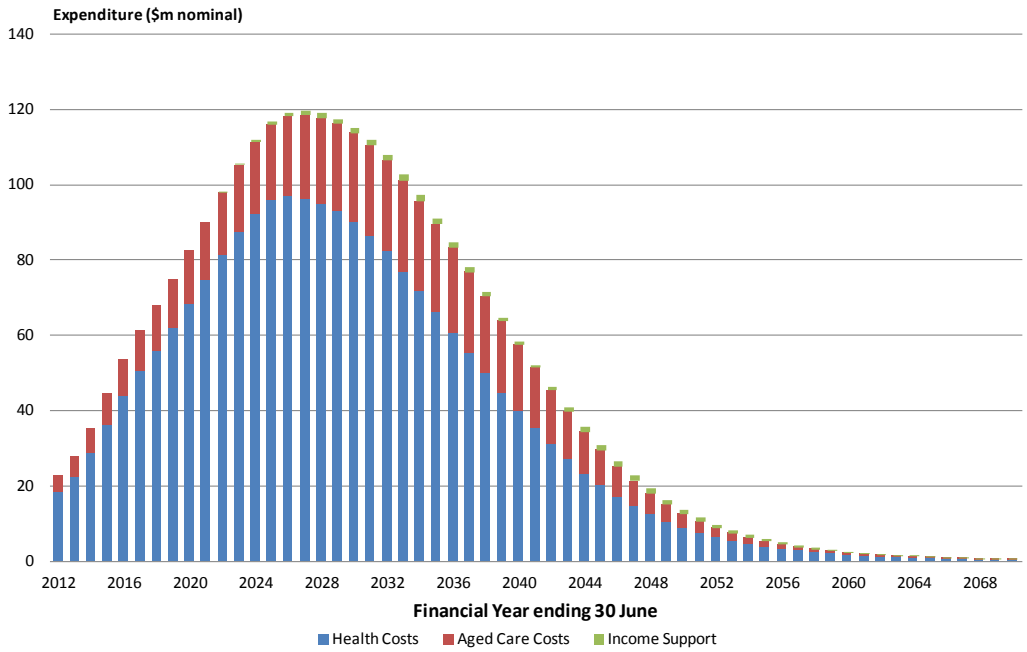
Table 2: Present Value of Projected Future Expenditure

	Present value of expenditure ($m)	Percentage of total
Health	833	78
Aged Care	227	21
Income Support	9	1
Total	**1,068**	**100**

Note that totals may not add exactly to 100 per cent due to rounding.

5.2 The distribution of cashflows contributing to these results is shown graphically below.

Figure 3: Projected future cashflows



5.3 The steep increase in health costs over the first ten years reflects the pattern of access to eligibility for permanent residence. By year ten, all of the surviving population is assumed to have taken up the option and become permanent residents. The increases in expenditure are then due to changes in costs for that population rather than an increasing population being eligible for support.

6 Sensitivity analysis

6.1 We have run the models under a variety of scenarios within a range of reasonable assumptions. The most significant impacts arise from changes in assumptions around mortality and health cost increases. The results under seven scenarios have been included here. The assumptions which have been altered are shown in the table below.

Table 3: Description of Scenarios Costed

Scenario	Future mortality improvement[1]	Age adjustment for mortality[2]	Excess health inflation[3]	Differential health inflation[4]
Base	0	0	0.7%	Yes
Scenario 1	0	3	0.7%	Yes
Scenario 2	100	0	0.7%	Yes
Scenario 3	100	3	0.7%	Yes
Scenario 4	25	0	0.7%	Yes
Scenario 5	0	0	0.4%	Yes
Scenario 6	0	0	1.0%	Yes
Scenario 7	0	0	0.7%	No

Three possible options for future mortality improvement are provided for in the model. The base model assumes no mortality improvement in future. The alternatives are that mortality improves in line with the improvements observed over the past 100 years ('100') or that it improves in line with the improvements observed over the past 25 years ('25'). Improvement rates over the past 25 years have been greater than over the last century.

There is an argument that the Subclass 410 visa population could be somewhat healthier than the Australian population on average given the health checks they have been required to undergo and their socio-economic background. This can be allowed for by assuming that they behave like a person who is somewhat younger. The base scenario assumes they are typical of the Australian population. The

alternative assumption treats them as having the health and mortality attributes of someone three years younger than they actually are.

Excess health inflation is the number of percentage points by which growth in per capita health costs is assumed to exceed GDP growth.

As discussed in chapter 3, the base assumption for the model is that the rate of health cost inflation will vary with age, though to a declining extent, over the first twenty years of the projection. This alternative scenario assumes that the flat rate of excess health inflation will apply at all ages over the entire projection period.

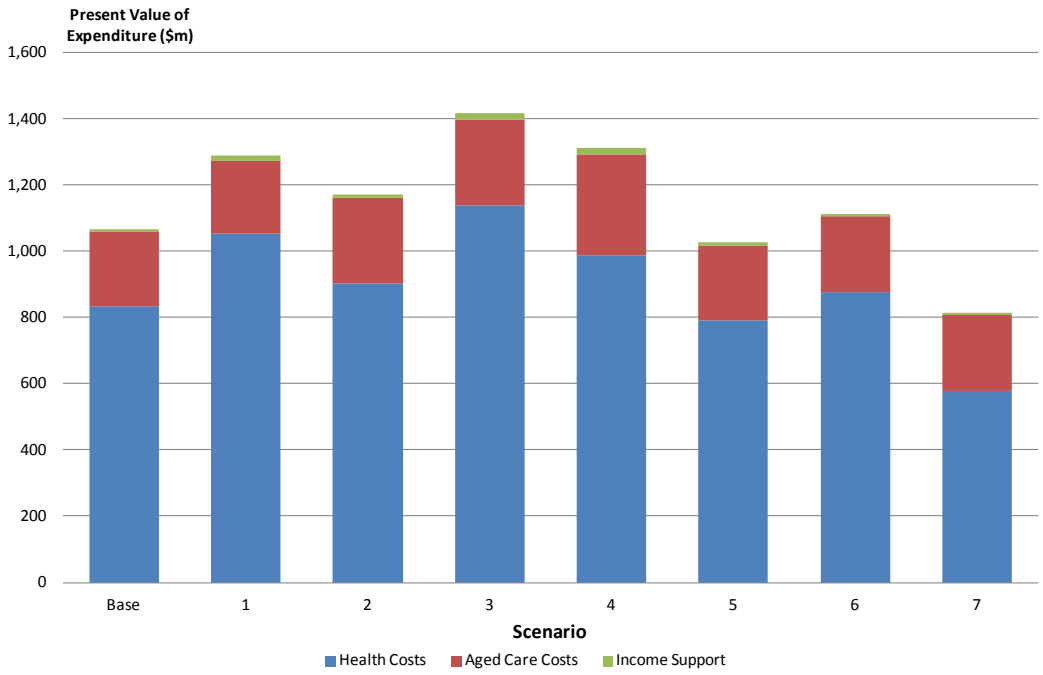
6.2 The results under each scenario are shown in Table 4 below.

Table 4: Scenario Costings

Scenario	PV of cost ($m)	Percentage change (per cent)
Base	1,068	-
Scenario 1	1,288	+20.6
Scenario 2	1,173	+9.8
Scenario 3	1,417	+32.7
Scenario 4	1,310	+22.7
Scenario 5	1,026	-4.0
Scenario 6	1,113	+4.2
Scenario 7	815	--23.7

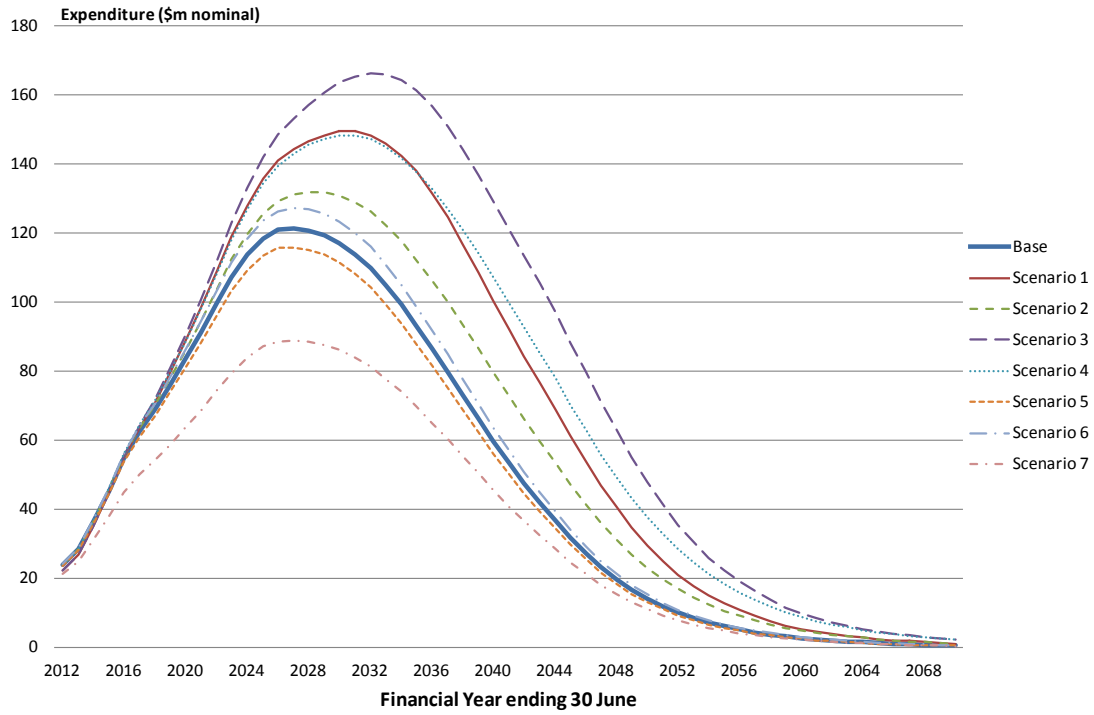
6.3 Figure 4 shows how the total cost is split between the various components under each scenario.

Figure 4: Distribution of costs under different scenarios



6.4 The change in the present value of expenditure reflects a change in both the magnitude and timing of the underlying cashflows, as illustrated in the following chart.

Figure 5: Projected Cashflows Under Different Scenarios



6.5 The change in mortality assumptions affects the number of people who are expected to survive long enough to become eligible for permanent residence. Table 5 overleaf shows the population assumed to take up the option and the average per capita cost under each scenario to the nearest $500.

6.6 Note that this table is based on the population recorded as holding a visa as at 30 June 2010. As noted in the data section, it is possible that there is a non-trivial number of former Subclass 410 visa holders who might, depending upon the policy parameters adopted, be able to renew their Subclass 410 visa and then access the permanent residence option. All else being equal, this would increase the costs of the proposal. It is also very possible that not all of those currently holding a Subclass 410 visa would choose to take up the permanent residence option. This would reduce costs, again all else being equal.

Table 5: Per-capita Costs under Different Scenarios

Scenario	Estimated number of people taking up option	Average per capita cost
Base	6,475	$165,000
Scenario 1	6,659	$193,500
Scenario 2	6,527	$179,500
Scenario 3	6,700	$211,500
Scenario 4	6,598	$198,500
Scenario 5	6,475	$158,500
Scenario 6	6,475	$172,000
Scenario 7	6,475	$126,000

6.7 The change in mortality and health inflation assumptions also has a marginal impact on the split of costs between the three categories as shown in Table 6. However, under all scenarios, health costs represent the substantial majority of the total.

Table 6: Percentage Distribution of Costs

	Percentage of present value cost attributable to		
Scenario	Health	Aged care	Income support
Base	78	21	1
Scenario 1	82	17	1
Scenario 2	77	22	1
Scenario 3	80	18	1
Scenario 4	75	23	1
Scenario 5	77	22	1
Scenario 6	79	20	1
Scenario 7	71	28	1

Note that rows may not add exactly to 100 per cent due to rounding.

7 Comments on results

7.1 The Retirement visa population is concentrated in the older age groups where health costs are high and growing more rapidly than for the population as a whole. As a result, health expenditure dominates the total costs under all of the scenarios. This is particularly the case under the default assumption of more rapidly increasing costs at older ages but even under an assumption that health inflation does not vary with age, health expenditure still accounts for more than 70 per cent of the total costs.

7.2 It is possible that a small number of Subclass 410 visa holders may already have access to Medicare benefits through Reciprocal Health Care Agreements. If this were the case, the additional costs would not be as great. However, DIAC have advised that, as at 30 June 2010, a maximum of 5 per cent of the visa holders met the requirements that would give them access under these arrangements. Furthermore, it is understood that some of those potentially eligible opted out of the reciprocal arrangements. On balance, it seems unlikely that the existence of these arrangements is leading to any material mis-statement of the costs.

7.3 Aged care costs are the next biggest component accounting for around 20 per cent of the present value of expenditure. The model assumes that the Retirement visa population do not currently receive any Commonwealth support for aged care services. It is not clear that this is the case in practice but there was no evidence for arriving at an alternative assumption. As with health expenditures, if services are being utilised at present, the net costs will be less than the gross costs reported here.

7.4 The assumption that this group will have substantial private resources and only be able to access the age pension ten years after obtaining permanent residence means that the costs of income support are a negligible proportion of the total.

7.5 We have not attempted to quantify any possible offsets to the costs identified here. The changed tax status flowing from permanent residence would almost certainly lead to higher revenues from income tax and the Medicare levy. However, the quantum of any additional revenue is very uncertain. We do not know what foreign sourced income might be brought within scope for tax purposes. On the other hand, tax revenue received is likely to decline as the population ages and private resources are consumed during retirement. The important point to remember is that this report is estimating the gross cost and there are likely to be some offsets which have not been included in the analysis.

7.6 Furthermore, for the purposes of the costing we have assumed that there will be 100 per cent take-up of the option by those currently holding a Subclass 410 visa as soon as the minimum requirement to apply for permanent residence is met. In practice, it is very unlikely that we would see universal take-up and the policy

parameters adopted (particularly the level of any VAC) could be expected to have a significant influence on the overall level of take-up and the attractiveness of the option at an individual level. At an aggregate level, therefore, the costs reported here represent a maximum for the current visa population.

7.7 At the same time, the possibility of a proportion of those who have let their visa lapse in the past reapplying for a Subclass 410 visa if there is the prospect of gaining permanent residence via this route needs to be taken into account. The data we had available for this task, does not allow us to quantify the potential size of this population, but there may be more than a thousand people who have allowed their visa to lapse and who could therefore reapply. It would be possible to set policy rules which would prevent or restrict access by this unknown group to permanent residence.

7.8 The average age of those who allowed their visa to lapse was less than one year younger than the average age of the population as a whole. As a result, the per capita costs reported here would probably be equally applicable to those not currently holding a visa as to those we have recorded on the data.

7.9 Against this, however, it is important to note that per capita costs may well be sensitive to the policy rules adopted. In particular, there is a strong possibility of adverse selection against the Commonwealth in terms of who might choose to take up the option of permanent residence. For example, if there is a substantial charge to access permanent residence, those who stand to benefit the most are likely to be more prepared to pay the charge. Thus, the higher the charge, the greater the likelihood that the per capita costs quoted here are understated.

7.10 The above discussion makes it clear that the costs will be sensitive to the policy parameters which might be adopted if a pathway to permanent residence were to be provided. There are a range of factors which could be tweaked to alter the potentially eligible population. Options might include, for example, using the period of actual residence in Australia instead of, or as well as the period for which a valid visa has been held. Whether an individual actually holds a Subclass 410 visa at the time the announcement is made or whether the option to become permanent is open ended or available for only a limited period could also have a significant influence on numbers. As discussed earlier, the level of any charge imposed could be expected to affect both the number and characteristics of those taking up a permanent residence option.

7.11 The variation in costs under the different scenarios illustrates the substantial margin of uncertainty associated with these estimates. The scenarios included here are by no means comprehensive and the results could be quite different under alternative assumption sets which are also reasonable. It is unlikely to ever be possible to measure actual outcomes as expenditure would need to be tracked for every individual within the populations for many years. Consequently, the estimates

presented here should be taken as broadly indicative results rather than precise projections.

Susan Antcliff
Actuary

February 2010

Appendix: Assumptions

Table 1: Health costs for a person who does not die during the year of age (2010/11 dollars)

Age	PerCapitaCost		Age	PerCapitaCost		Age	PerCapitaCost
0	1,570		37	1,684		74	7,108
1	1,388		38	1,692		75	6,655
2	1,164		39	1,701		76	6,726
3	1,012		40	1,709		77	6,785
4	867		41	1,735		78	6,868
5	403		42	1,759		79	6,930
6	320		43	1,815		80	6,969
7	236		44	1,869		81	6,897
8	230		45	2,022		82	6,803
9	224		46	2,080		83	6,839
10	219		47	2,138		84	6,841
11	224		48	2,211		85	5,263
12	229		49	2,285		86	5,032
13	242		50	2,360		87	4,799
14	256		51	2,467		88	4,564
15	955		52	2,573		89	4,332
16	1,003		53	2,729		90	4,108
17	1,050		54	2,887		91	3,896
18	1,105		55	3,045		92	3,698
19	1,160		56	3,200		93	3,515
20	1,216		57	3,355		94	3,349
21	1,270		58	3,520		95	3,197
22	1,327		59	3,685		96	3,060
23	1,375		60	3,848		97	2,938
24	1,424		61	4,049		98	2,827
25	1,447		62	4,249		99	2,729
26	1,498		63	4,531		100	2,642
27	1,546		64	4,812		101	2,566
28	1,560		65	5,254		102	2,498
29	1,574		66	5,531		103	2,440
30	1,584		67	5,807		104	2,389
31	1,590		68	6,084		105	2,344
32	1,598		69	6,356		106	2,306
33	1,598		70	6,613		107	2,273
34	1,599		71	6,759		108	2,236
35	1,682		72	6,885		109	2,202
36	1,684		73	7,002		110	984

Table 2: Initial difference in annual health care inflation from long term average (percentage points)

Age	Inflation Difference		Age	Inflation Difference		Age	Inflation Difference
0	-2.2500		37	-0.0480		74	2.5766
1	-2.2500		38	0.0256		75	2.6448
2	-2.2500		39	0.0991		76	2.7129
3	-2.2500		40	0.1724		77	2.7809
4	-2.2500		41	0.2456		78	2.8488
5	-2.2500		42	0.3186		79	2.9165
6	-2.2500		43	0.3914		80	2.9841
7	-2.2500		44	0.4641		81	3.0515
8	-2.2500		45	0.5367		82	3.1189
9	-2.1776		46	0.6091		83	3.1861
10	-2.0992		47	0.6813		84	3.2531
11	-2.0210		48	0.7534		85	3.3201
12	-1.9429		49	0.8253		86	0.0000
13	-1.8650		50	0.8971		87	0.0000
14	-1.7873		51	0.9687		88	0.0000
15	-1.7098		52	1.0402		89	0.0000
16	-1.6325		53	1.1115		90	0.0000
17	-1.5553		54	1.1827		91	0.0000
18	-1.4783		55	1.2538		92	0.0000
19	-1.4015		56	1.3247		93	0.0000
20	-1.3249		57	1.3954		94	0.0000
21	-1.2484		58	1.4660		95	0.0000
22	-1.1721		59	1.5365		96	0.0000
23	-1.0960		60	1.6068		97	0.0000
24	-1.0201		61	1.6770		98	0.0000
25	-0.9443		62	1.7470		99	0.0000
26	-0.8687		63	1.8169		100	0.0000
27	-0.7932		64	1.8867		101	0.0000
28	-0.7180		65	1.9563		102	0.0000
29	-0.6429		66	2.0257		103	0.0000
30	-0.5679		67	2.0951		104	0.0000
31	-0.4932		68	2.1643		105	0.0000
32	-0.4186		69	2.2333		106	0.0000
33	-0.3441		70	2.3022		107	0.0000
34	-0.2699		71	2.3710		108	0.0000
35	-0.1957		72	2.4397		109	0.0000
36	-0.1218		73	2.5082		110	0.0000

Table 3: Per-capita aged care costs (2010/11 dollars)

Age	Aged care costs		Age	Aged care costs
Less than 50	22		79	1,983
50 to 54	59		80	2,377
55 to 59	62		81	2,689
60 to 64	72		82	3,062
65	158		83	3,504
66	178		84	4,006
67	203		85	4,836
68	232		86	5,524
69	269		87	6,347
70	827		88	7,223
71	879		89	8,353
72	944		90	9,555
73	1,024		91	10,955
74	1,112		92	12,504
75	1,286		93	14,261
76	1,415		94	16,140
77	1,579		95 plus	17,490
78	1,756			

Table 4: Assumed rate of single age pension (nominal dollars)

Duration	Pension		Duration	Pension		Duration	Pension
1	0		21	0		41	18,431
2	0		22	0		42	20,848
3	0		23	0		43	23,396
4	0		24	0		44	26,080
5	0		25	0		45	28,906
6	0		26	0		46	31,881
7	0		27	0		47	35,011
8	0		28	0		48	38,304
9	0		29	0		49	41,766
10	0		30	0		50	45,405
11	0		31	288		51	49,230
12	0		32	1,678		52	53,247
13	0		33	3,151		53	57,466
14	0		34	4,711		54	61,896
15	0		35	6,362		55	66,545
16	0		36	8,108		56	71,424
17	0		37	9,955		57	76,542
18	0		38	11,905		58	81,910
19	0		39	13,964		59	87,539
20	0		40	16,138		60	93,441

Table 5: Assumed rate of combined married age pension (nominal dollars)

Duration	Pension		Duration	Pension		Duration	Pension
1	0		21	7,447		41	36,250
2	0		22	8,310		42	38,540
3	0		23	9,219		43	40,939
4	0		24	10,176		44	43,451
5	0		25	11,183		45	46,080
6	0		26	12,242		46	48,833
7	0		27	13,356		47	51,713
8	0		28	14,527		48	54,728
9	18		29	15,757		49	57,882
10	465		30	17,050		50	61,182
11	938		31	18,408		51	64,633
12	1,439		32	19,833		52	68,243
13	1,970		33	21,330		53	72,017
14	2,531		34	22,900		54	75,963
15	3,125		35	24,547		55	80,088
16	3,752		36	26,275		56	84,400
17	4,414		37	28,087		57	88,907
18	5,113		38	29,986		58	93,616
19	5,850		39	31,978		59	98,537
20	6,627		40	34,064		60	103,679

Table 6: Male mortality rates (Alt2005-07)

Age	Mortality Rate		Age	Mortality Rate		Age	Mortality Rate
0	0.00523		37	0.00123		74	0.02938
1	0.00040		38	0.00129		75	0.03312
2	0.00028		39	0.00136		76	0.03716
3	0.00018		40	0.00145		77	0.04153
4	0.00014		41	0.00154		78	0.04634
5	0.00013		42	0.00165		79	0.05167
6	0.00012		43	0.00176		80	0.05760
7	0.00011		44	0.00190		81	0.06422
8	0.00010		45	0.00204		82	0.07160
9	0.00010		46	0.00221		83	0.07983
10	0.00010		47	0.00238		84	0.08896
11	0.00011		48	0.00258		85	0.09907
12	0.00012		49	0.00280		86	0.11020
13	0.00013		50	0.00303		87	0.12236
14	0.00016		51	0.00329		88	0.13534
15	0.00022		52	0.00357		89	0.14892
16	0.00035		53	0.00386		90	0.16286
17	0.00054		54	0.00419		91	0.17696
18	0.00070		55	0.00454		92	0.19102
19	0.00073		56	0.00493		93	0.20484
20	0.00074		57	0.00538		94	0.21824
21	0.00076		58	0.00591		95	0.23106
22	0.00077		59	0.00652		96	0.24315
23	0.00079		60	0.00721		97	0.25437
24	0.00081		61	0.00799		98	0.26458
25	0.00083		62	0.00885		99	0.27366
26	0.00085		63	0.00981		100	0.28205
27	0.00088		64	0.01085		101	0.29175
28	0.00090		65	0.01200		102	0.30020
29	0.00093		66	0.01323		103	0.30768
30	0.00095		67	0.01457		104	0.31443
31	0.00098		68	0.01601		105	0.32069
32	0.00101		69	0.01755		106	0.32610
33	0.00105		70	0.01920		107	0.33110
34	0.00108		71	0.02100		108	0.33657
35	0.00112		72	0.02320		109	0.34192
36	0.00117		73	0.02602		110	1.00000

Table 7: Female mortality rates (Alt2005-07)

Age	Mortality Rate		Age	Mortality Rate		Age	Mortality Rate
0	0.00440		37	0.00062		74	0.01763
1	0.00032		38	0.00067		75	0.01982
2	0.00019		39	0.00073		76	0.02228
3	0.00015		40	0.00080		77	0.02511
4	0.00012		41	0.00087		78	0.02838
5	0.00011		42	0.00095		79	0.03219
6	0.00010		43	0.00104		80	0.03661
7	0.00009		44	0.00114		81	0.04175
8	0.00008		45	0.00124		82	0.04767
9	0.00007		46	0.00135		83	0.05445
10	0.00007		47	0.00147		84	0.06216
11	0.00007		48	0.00159		85	0.07088
12	0.00008		49	0.00173		86	0.08065
13	0.00010		50	0.00187		87	0.09154
14	0.00013		51	0.00202		88	0.10358
15	0.00018		52	0.00218		89	0.11678
16	0.00022		53	0.00235		90	0.13094
17	0.00026		54	0.00252		91	0.14585
18	0.00028		55	0.00272		92	0.16130
19	0.00028		56	0.00296		93	0.17710
20	0.00028		57	0.00325		94	0.19304
21	0.00028		58	0.00358		95	0.20895
22	0.00028		59	0.00395		96	0.22467
23	0.00029		60	0.00436		97	0.24005
24	0.00030		61	0.00479		98	0.25495
25	0.00030		62	0.00524		99	0.26925
26	0.00032		63	0.00572		100	0.28281
27	0.00033		64	0.00623		101	0.29555
28	0.00035		65	0.00679		102	0.30735
29	0.00036		66	0.00743		103	0.31816
30	0.00038		67	0.00817		104	0.32800
31	0.00041		68	0.00902		105	0.33691
32	0.00043		69	0.01001		106	0.34493
33	0.00046		70	0.01115		107	0.35210
34	0.00049		71	0.01246		108	0.36017
35	0.00053		72	0.01397		109	0.36800
36	0.00057		73	0.01568		110	1.00000

Table 8: Male 25 year mortality improvement rates (Alt2005-07)

Age	Improvement (per cent)		Age	Improvement (per cent)		Age	Improvement (per cent)
0	-3.0925		37	-1.0711		74	-2.8101
1	-3.3186		38	-1.2350		75	-2.7286
2	-3.7074		39	-1.3904		76	-2.6375
3	-4.4384		40	-1.5449		77	-2.5299
4	-4.5426		41	-1.7262		78	-2.4239
5	-4.4602		42	-1.8921		79	-2.3172
6	-4.3750		43	-2.0580		80	-2.2066
7	-4.2870		44	-2.1959		81	-2.0925
8	-4.1962		45	-2.3534		82	-1.9749
9	-4.1026		46	-2.4701		83	-1.8536
10	-4.0061		47	-2.5929		84	-1.7301
11	-3.8565		48	-2.6911		85	-1.6055
12	-3.7751		49	-2.7896		86	-1.4809
13	-3.7075		50	-2.8796		87	-1.3584
14	-3.6519		51	-2.9611		88	-1.2465
15	-3.6051		52	-3.0344		89	-1.1489
16	-3.5626		53	-3.0994		90	-1.0671
17	-3.5183		54	-3.1564		91	-0.9997
18	-3.4650		55	-3.2055		92	-0.9457
19	-3.3939		56	-3.2468		93	-0.8917
20	-3.2948		57	-3.2805		94	-0.8377
21	-3.1000		58	-3.3066		95	-0.7837
22	-2.8587		59	-3.3254		96	-0.7297
23	-2.6347		60	-3.3369		97	-0.6757
24	-2.4346		61	-3.3412		98	-0.6217
25	-2.2337		62	-3.3386		99	-0.5677
26	-2.0318		63	-3.3291		100	-0.5137
27	-1.7836		64	-3.3130		101	-0.4597
28	-1.5795		65	-3.2902		102	-0.4057
29	-1.3308		66	-3.2609		103	-0.3517
30	-1.1233		67	-3.2253		104	-0.2977
31	-0.9687		68	-3.1835		105	-0.2437
32	-0.8491		69	-3.1357		106	-0.1898
33	-0.7580		70	-3.0819		107	-0.1358
34	-0.7995		71	-3.0223		108	-0.0818
35	-0.8602		72	-2.9571		109	-0.0278
36	-0.9624		73	-2.8863		110	0.0000

Table 9: Female 25 year mortality improvement rates (Alt2005-07)

Age	Improvement (per cent)		Age	Improvement (per cent)		Age	Improvement (per cent)
0	-3.4069		37	-1.4356		74	-2.3398
1	-3.3854		38	-1.5496		75	-2.3018
2	-3.3604		39	-1.6267		76	-2.2593
3	-3.3318		40	-1.6738		77	-2.2120
4	-3.2996		41	-1.7711		78	-2.1808
5	-3.2639		42	-1.8365		79	-2.1320
6	-3.2246		43	-1.9000		80	-2.0719
7	-3.1817		44	-1.9602		81	-1.9981
8	-3.1353		45	-2.0289		82	-1.9150
9	-3.0853		46	-2.0745		83	-1.8240
10	-3.0317		47	-2.1329		84	-1.7247
11	-2.9746		48	-2.1960		85	-1.6177
12	-2.9139		49	-2.2426		86	-1.5057
13	-2.8497		50	-2.2934		87	-1.3887
14	-2.7819		51	-2.3399		88	-1.2687
15	-2.7105		52	-2.3728		89	-1.1480
16	-2.6356		53	-2.4020		90	-1.0346
17	-2.5571		54	-2.4278		91	-0.9324
18	-2.4750		55	-2.4503		92	-0.8450
19	-2.3894		56	-2.4696		93	-0.7725
20	-2.3002		57	-2.4860		94	-0.7159
21	-2.2074		58	-2.4995		95	-0.6747
22	-2.1111		59	-2.5102		96	-0.6335
23	-2.0112		60	-2.5183		97	-0.5923
24	-1.9077		61	-2.5237		98	-0.5511
25	-1.8007		62	-2.5265		99	-0.5099
26	-1.6901		63	-2.5268		100	-0.4687
27	-1.5759		64	-2.5244		101	-0.4275
28	-1.4582		65	-2.5195		102	-0.3863
29	-1.3369		66	-2.5118		103	-0.3451
30	-1.2468		67	-2.5014		104	-0.3039
31	-1.1682		68	-2.4881		105	-0.2627
32	-1.1898		69	-2.4718		106	-0.2215
33	-1.1869		70	-2.4524		107	-0.1803
34	-1.2437		71	-2.4297		108	-0.1391
35	-1.2725		72	-2.4035		109	-0.0979
36	-1.3468		73	-2.3736		110	-0.0567

Table 10: Male 100 year mortality improvement rates (Alt2005-07)

Age	Improvement (per cent)		Age	Improvement (per cent)		Age	Improvement (per cent)
0	-2.8589		37	-1.7211		74	-1.0980
1	-3.7244		38	-1.7263		75	-1.0596
2	-3.1324		39	-1.7290		76	-1.0209
3	-3.1437		40	-1.7128		77	-0.9835
4	-3.1649		41	-1.7053		78	-0.9460
5	-3.0267		42	-1.6930		79	-0.9083
6	-2.9309		43	-1.6872		80	-0.8696
7	-2.9015		44	-1.6703		81	-0.8297
8	-2.9317		45	-1.6555		82	-0.7931
9	-2.8704		46	-1.6290		83	-0.7583
10	-2.8436		47	-1.6081		84	-0.7223
11	-2.7509		48	-1.5742		85	-0.6851
12	-2.6931		49	-1.5438		86	-0.6471
13	-2.6866		50	-1.5153		87	-0.6105
14	-2.6089		51	-1.4811		88	-0.5787
15	-2.2982		52	-1.4499		89	-0.5522
16	-2.0615		53	-1.4253		90	-0.5256
17	-1.7100		54	-1.3988		91	-0.4990
18	-1.5416		55	-1.3767		92	-0.4725
19	-1.5524		56	-1.3575		93	-0.4459
20	-1.5966		57	-1.3389		94	-0.4193
21	-1.6246		58	-1.3187		95	-0.3928
22	-1.6439		59	-1.2947		96	-0.3662
23	-1.6522		60	-1.2683		97	-0.3397
24	-1.6646		61	-1.2419		98	-0.3131
25	-1.6718		62	-1.2173		99	-0.2865
26	-1.6829		63	-1.1928		100	-0.2600
27	-1.6780		64	-1.1747		101	-0.2334
28	-1.6883		65	-1.1613		102	-0.2068
29	-1.6738		66	-1.1556		103	-0.1803
30	-1.6837		67	-1.1525		104	-0.1537
31	-1.6921		68	-1.1531		105	-0.1271
32	-1.6947		69	-1.1555		106	-0.1006
33	-1.6928		70	-1.1593		107	-0.0740
34	-1.7067		71	-1.1623		108	-0.0475
35	-1.7171		72	-1.1552		109	-0.0209
36	-1.7196		73	-1.1318		110	0.0000

Table 11: Female 100 year mortality improvement rates (Alt2005-07)

Age	Improvement (per cent)		Age	Improvement (per cent)		Age	Improvement (per cent)
0	-2.8530		37	-2.3359		74	-1.3883
1	-3.8748		38	-2.2864		75	-1.3580
2	-3.4392		39	-2.2325		76	-1.3220
3	-3.2563		40	-2.1705		77	-1.2794
4	-3.2421		41	-2.1127		78	-1.2317
5	-3.1058		42	-2.0541		79	-1.1793
6	-3.0169		43	-1.9859		80	-1.1236
7	-3.0089		44	-1.9135		81	-1.0654
8	-3.0382		45	-1.8556		82	-1.0058
9	-3.0988		46	-1.7938		83	-0.9463
10	-3.0747		47	-1.7407		84	-0.8900
11	-3.0988		48	-1.6965		85	-0.8389
12	-3.0382		49	-1.6518		86	-0.7924
13	-2.8704		50	-1.6184		87	-0.7473
14	-2.6963		51	-1.5858		88	-0.7013
15	-2.4677		52	-1.5635		89	-0.6553
16	-2.3774		53	-1.5467		90	-0.6132
17	-2.3095		54	-1.5419		91	-0.5771
18	-2.3106		55	-1.5346		92	-0.5410
19	-2.3757		56	-1.5205		93	-0.5049
20	-2.4337		57	-1.5019		94	-0.4688
21	-2.4913		58	-1.4898		95	-0.4327
22	-2.5483		59	-1.4791		96	-0.3966
23	-2.5604		60	-1.4715		97	-0.3605
24	-2.5787		61	-1.4676		98	-0.3244
25	-2.6275		62	-1.4670		99	-0.2883
26	-2.6045		63	-1.4688		100	-0.2522
27	-2.6192		64	-1.4720		101	-0.2162
28	-2.6025		65	-1.4741		102	-0.1801
29	-2.6026		66	-1.4715		103	-0.1440
30	-2.5804		67	-1.4658		104	-0.1079
31	-2.5451		68	-1.4575		105	-0.0718
32	-2.5306		69	-1.4502		106	-0.0357
33	-2.5009		70	-1.4444		107	0.0000
34	-2.4724		71	-1.4381		108	0.0000
35	-2.4247		72	-1.4281		109	0.0000
36	-2.3864		73	-1.4122		110	0.0000

Table 12: Financial assumptions

Variable	Assumption (per cent)
CPI growth	2.5
General wage growth	4.0
GDP growth	5.5
Discount rate	6.0