



Australian Government

Australian Government Actuary

**COMMONWEALTH EXPENDITURE ASSOCIATED
WITH THE CONTRIBUTORY PARENT VISA**

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Executive Summary

The Department of Immigration and Citizenship (DIAC) has asked Australian Government Actuary (AGA) to review the model of costs associated with the Contributory Parent Visa (CPV) category which was developed in 2002. The original model was constructed at the time the introduction of the CPV was being considered and was used to inform discussion of the level of the second visa application charge and its subsequent indexation. The CPV category came into effect from 1 July 2003.

In the context of consideration of the CPV Composite Index (CPVCI) used to adjust the second visa application charge, we noted that there would be a need to periodically review the model in the light of emerging experience to ensure that the weightings for the various cost elements remained appropriate. This report presents the results of such a review.

The model used for the current report projects health, aged care pension and other costs over a 60 year period for a cohort of new entrants and discounts these costs to arrive at an estimate of the present value of Commonwealth costs. Assumptions have been updated based on available information 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 most significant change is in relation to the health inflation assumption where we have adopted age dependant inflation rates to reflect the recent experience of higher utilisation rates by older members of the community. This change has significantly increased the contribution of health costs to the estimate of total costs. In addition, we have used the demographic information available on those who have actually entered under the CPV since its introduction.

We have modelled six scenarios with slightly different assumptions in relation to health cost inflation and mortality. The estimated cost for a cohort of 3,500 new entrants under these scenarios varies between \$792m to \$970m or a per capita cost of between \$232,000 and \$284,000. The projected revenue from the second visa application charge represents between 10.7% and 13.1% of the total cost and thus is broadly in line with the relativities which applied at the time the visa was introduced (but note the differences between the original model and that used for the current report outlined in paragraph 4.5).

The weightings to be used in the CPVCI have changed, with health and welfare costs now representing almost 70% of the total rather than the 60% used in the original model. This has been offset by a lower estimate of costs associated with income support and other costs.

The considerable uncertainty associated with any long term projections should 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. It is important that assumptions incorporated in the model are subject to regular re to maintain the on-going validity and credibility of the CPVCI.

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. This charge was levied on each adult included in the application (with a very much smaller second charge applying to children).
- 1.2 We provided a report in August 2002 describing the model we had constructed to estimate cashflows and the net financial impact (in present value terms) of the proposal and setting out the results and sensitivity analysis on key parameters.
- 1.3 Subsequently, we provided advice on the appropriate mechanism for indexing the second visa application charge to ensure that it reflected the appropriate weighting of the drivers of total cost and this was reflected in the legislation established to provide for indexation of the charge.
- 1.4 The Contributory Parent Visa (CPV) category came into effect in 2003 with separate classes for onshore and offshore applicants and an option to take out a temporary visa (at a cost of around 60% of the full second visa application charge). A holder of a temporary visa could subsequently convert to a permanent visa, with the residual charge paid on transition (subject to any annual adjustments). The second visa application charge was initially set at \$25,000. This amount has been indexed annually in accordance with the statutory requirements and is now \$31,555.
- 1.5 We have noted at various times that there will be a need to review the original model to update the assumptions, taking account of more recent experience and recalibrate the indexation methodology. The Department of Immigration and Citizenship (DIAC) has now asked us to undertake this review.
- 1.6 This report has been prepared by Susan Antcliff, FIAA.

2 Data

- 2.1 When we undertook the original modelling work, we relied on information on applicants in the non-contributory parent visa queue. The fact that the CPV has now been in operation for a number of years means that there is data available on the actual entrants.

Commonwealth Expenditure Associated with the Contributory Parent Visa

2.2 DIAC provided unit record data on the 3,500 entrants under the CPV in each financial year from 2003/04 to 2006/07. The data for 2003/04 did not include a visa application identifier for onshore applicants which meant that it was not possible to determine the family units for this group. However, for the three subsequent years, the data was complete and appeared sensible. In particular, the experience in each of the three years was quite consistent in terms of the distribution between different family types and average age of applicants.

2.3 The following table summarises the data for each of the three years used.

	2004/05	2005/06	2006/07
Number of family units			
Single parent	1,024	1,008	978
Couple	1,038	1,030	1,033
Single parent with children	59	68	59
Couple with children	92	96	107
Total number of applications	2,213	2,202	2,177
Average age of principal			
Single parent	64.2	63.6	62.9
Couple	62.8	62.7	62.8
Single parent with children	53.8	51.7	52.1
Couple with children	54.8	53.4	53.0

2.4 As the characteristics of the intake populations looked relatively stable from year to year, we were quite comfortable in assuming that future intakes would be in line with what has been observed in the past. We ran our model using the actual populations from each of the three years and the results were extremely similar. We have used the average of the three outcomes as our final estimates.

2.5 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; and
 - advice on the tax treatment of foreign nationals resident in Australia
- the Treasury

- data on Commonwealth health expenditure by age

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

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

3 Assumptions

3.1 The modelling considered four categories of expenditure:

- health expenditure (covering hospital, pharmaceuticals, Medicare and other, including the private health insurance rebate);
- income support (primarily the age pension, but also family benefits and a limited level of access to special benefits);
- expenditure on aged care services; and
- other expenditure (this related to the visa application administration costs, the Adult Migrant Education Program and the costs of administering the Assurance of Support).

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 future trends in macroeconomic variables including inflation, wages and GDP (Gross Domestic Product). A full listing of the assumptions adopted is included at the end of 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 the entrants under the CPV programs 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, the extension of procedures to the elderly that would previously have been restricted to younger age groups has seen health costs grow more quickly for the older age groups than for the population as a whole.

- 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 were based on State and Commonwealth expenditure in 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 two years to 2007/08.
- 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:

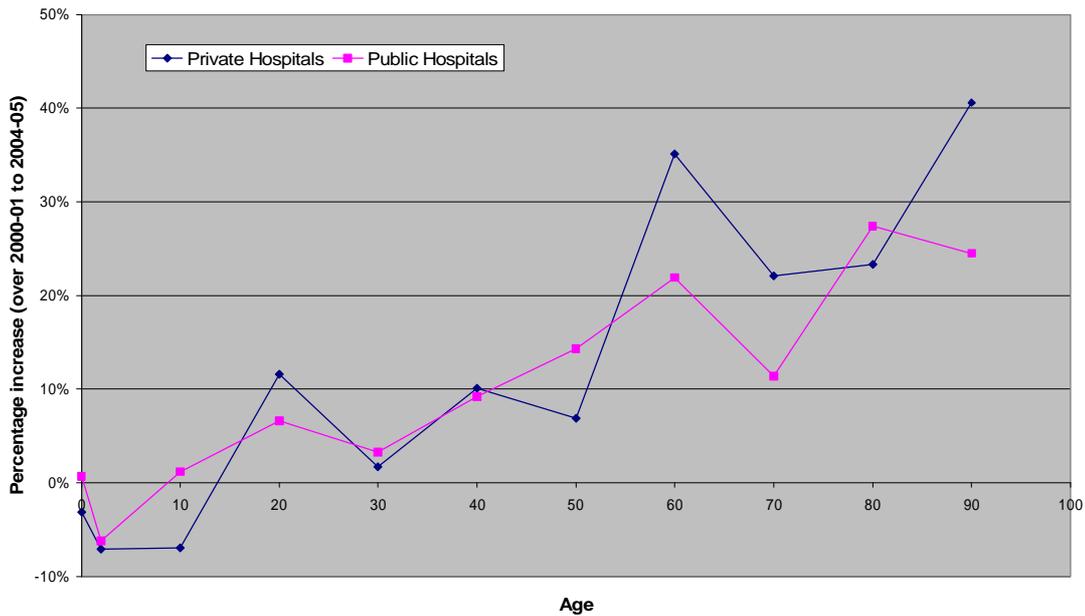
$$\text{Average health cost for survivor} = \frac{\text{Average health cost at age } x}{P_x + 8 \times (1 - P_x)}$$

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 listing of all assumptions following 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 the assumption recommended by

AIHW of health cost inflation of 0.7 percentage points in excess of GDP growth will apply.

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 (that is, the number of people completing an episode as a hospital inpatient) as a proxy for the differential inflation. The following chart shows the percentage increase in hospital separations between 2001/02 and 2005/06 at different ages.



(Source: AIHW Australian Hospital Statistics 2005/06)

3.10 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.

3.11 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.

- 3.12 The initial difference from the long term assumption at each age is shown at Table 2 in the assumptions section at the end of this report.
- 3.13 An additional assumption was included in the model which allowed for the possibility that the groups under consideration are healthier than the general population. CPV applicants must undergo a health check prior to approval and they might therefore be expected to be somewhat healthier than the general population. This is taken into account by assuming that the health costs for a person of a particular age are taken to be the health costs for someone a specified number of years younger. 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 used to calculate a present value of future outlays, the value of health expenditure for an eighty year old will be greater if the expenditure occurs later. Our base scenario assumes that visa populations will have the health characteristics of people three years younger. However, results are also included using the assumption that there is no difference between the groups of interest and the general population.

Income Support Benefits

- 3.14 Given the age distribution of the people covered by the CPV, the age pension is the income support benefit most likely to be paid. Under Centrelink rules, age pension is not payable until 10 years of residence have been completed. In the intervening period, it is possible that Special Benefits might be granted in hardship cases.
- 3.15 However, CPV applicants are covered by an Assurance of Support (AoS) arrangement which means that access to income support benefits prior to becoming eligible for the age pension is likely to be fairly minimal. In our 2002 report, we followed the then Department of Immigration, Multicultural and Indigenous Affairs assumption that 39% of applicants would have access to benefits before becoming eligible for the age pension. Discussions with the Department of Family, Housing, Community Services and Indigenous Affairs, and Centrelink regarding activation of the Assurance of Support suggest that this is substantially too high and for the current exercise we have assumed a take-up rate of 5%. We have assumed that this group will receive a benefit at a rate equal to 75% of the age pension that would otherwise be assumed to apply.
- 3.16 While the CPV demands significant resources in order to meet the second visa charge, there is no requirement on the financial resources which the applicant must have on entry. Accordingly, it is reasonable to assume that this group may be only marginally better off financially than the general Australian population in the same age group.

3.17 We used data from the Australian Bureau of Statistics (ABS) publication Household Income and Income Distribution Australia 2005-06 which showed the distribution of households by the proportion of their gross income which came from income support payments. For a given proportion, it is possible to calculate what the amount of pension must be based on the income test. Combining these pension amounts with the household distribution, an average pension entitlement across all households can be derived. This analysis was done separately for single and married couple households. In order to take account of the possibility that the CPV population is somewhat better off than the general population we adjusted the distribution slightly to overweight the proportion of households with low reliance on income support.

3.18 The following table sets out the underlying data and the distribution we used.

Single Households

Percentage of gross income from income support	Percentage of households ¹	Adjusted percentage of households ¹	Implied annual pension entitlement ²
<1%	7.1%	13.2%	\$0.00
≥ 1%, < 20%	7.8%	14.5%	\$3,389.04
≥ 20%, < 50%	7.3%	13.6%	\$8,944.85
≥ 50%, < 90%	21.1%	21.1%	\$13,308.20
≥ 90%	56.5%	37.7%	\$15,268.16

Couple Households

Percentage of gross income from income support	Percentage of households ¹	Adjusted percentage of households ¹	Implied annual pension entitlement ²
<1%	8.8%	14.5%	\$0.00
≥ 1%, < 20%	13.3%	21.9%	\$5,688.35
≥ 20%, < 50%	10.3%	17.0%	\$15,013.51
≥ 50%, < 90%	25.8%	25.8%	\$22,337.17
≥ 90%	41.7%	20.9%	\$25,626.89

¹ Note that column totals may not add exactly to 100% due to rounding

² Assuming the pension makes up a percentage of gross income at the middle of the reported band, calculated under current income test parameters

Source: Household Income and Income Distribution, Australia 2005-06 (ABS Publication 6523.0)

3.19 Applying the adjusted weightings to the implied pension entitlements gave an average pension entitlement for a single person of \$10,260 per annum and \$14,900 for a couple. We were able to link the CPV data to create records for each household unit and thus apply the appropriate rates based on the projected number of surviving adult members.

3.20 Reflecting the Government's commitment to maintaining the single rate of age pension at 25 per cent of MTAW (Male Total Average Weekly Earnings), pension rates are assumed to increase in line with wage growth.

3.21 There are also a small number of children in the CPV population, most of whom could be expected to qualify for Family Tax Benefit (FTB) while they are of an eligible age. We have made the following assumptions.

Age of child	Percentage of children receiving Family Tax Benefit	Amount of Family Tax Benefit
0 to 17	80%	\$1,891
18 to 22	75%	\$2,310
23	50%	\$2,310
24	25%	\$2,310

3.22 FTB is assumed to increase in line with the CPI (Consumer Price Index) rather than the wage inflation which applies to the age pension itself.

Aged Care Costs

3.23 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.

- 3.24 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 5 in the assumptions section.

Other costs

- 3.25 Other costs arise from administration expenses, both direct and indirect, attributable to the AoS arrangements and the Adult Migrant Education Program.
- 3.26 Based on advice from DIAC, we have assumed that the visa processing costs will be \$392.10 per application.
- 3.27 We were unable to get any advice on the administrative costs associated with the AoS. The advice provided by DIAC when we originally undertook this exercise suggested that the set up costs might have been of the order of \$750 to \$800 per application. We have assumed a cost of \$800 per application in the first year and a further cost of \$2,000 in the event that a claim is made for income support and the AoS is therefore activated. These costs are a very small proportion of the total.
- 3.28 DIAC advice suggested that around 27% of CPV applicants might access the Adult Migrant Education Program at a cost of \$5,854 for each person spread over two years.
- 3.29 We have assumed that these other costs will increase in line with the CPI. While processing costs are expected to increase more slowly than this due to the efficiency dividend, it is not clear that this can be maintained in the long term. Again, the effect of this assumption is immaterial when compared with the other costs.

Mortality assumptions

- 3.30 We have modelled mortality based on the latest available Australian Life Tables: ALT2000-02. There is, however, a question around whether the health status of these two groups might be better than the general population and 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. Our base scenario assumes that applicants will experience the mortality of someone in the general population who is

three years younger. As noted above, this factor is also assumed to flow through into health costs.

- 3.31 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

- 3.32 Assumptions are required on the rate of increase in the CPI, wage costs, GDP and a suitable discount rate.
- 3.33 We have maintained the assumption that the CPI will increase at a rate of 2.5% per annum. This is lower than the current rate of CPI growth but 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. The rate of CPI growth is used to index the 'Other Costs' elements of the model.
- 3.34 The other financial assumptions have been set so as to be consistent with a CPI assumption of 2.5% per annum.
- 3.35 Wage costs are assumed to grow by 4% 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.
- 3.36 Nominal GDP is assumed to grow by 5.5% per annum. GDP growth is used as the base to which the excess health cost inflation of 0.7 percentage points is added.
- 3.37 We have adopted a discount rate of 6% or 3.5 percentage points above the inflation assumption. This is in line with the assumptions we use for similar long term projections and is consistent with yields over the last few years on Commonwealth Government long term bonds.
- 3.38 It is probable that there will be net tax revenue arising from the CPV population. However, it is extremely uncertain. In our original costing, 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 Charges

- 3.39 We have used the rates which applied at the time of preparing this report. For the CPV, we have used the distribution between the different visa types (onshore versus offshore, and single second visa application charge versus the split payment) shown on the actual intakes in each of the last three years. We have assumed that 5 percent of those who take up the option of a temporary visa will not choose to convert that temporary visa to a permanent visa.

4 The Model

- 4.1 The original CPV cost model was constructed in Excel™. The current model uses a SAS™ platform, which we consider to be more robust since it minimises the risk of inadvertent changes introducing errors. It can also deal more readily with complex input parameters, such as the use of health inflation factors that differ with both age and time.
- 4.2 The model projects the health, pension, welfare and other costs for each individual over the 60 years following their entry, taking account of survival probabilities and using the various assumptions described above. By year 60, the cashflows are immaterial, being equivalent to around \$80,000 per annum in present value terms for the entire intake. These cashflows are discounted and aggregated to arrive at a present value of the various costs.
- 4.3 For the purposes of the model, individuals are treated as part of a family unit and this allows marital status to be taken into account in calculating pension entitlements. Revenue from the first visa application charge which applies to the family unit can also be accurately modelled.
- 4.4 The model has been run separately for each of the intakes from 2004/05, 2005/06 and 2006/07 and the results averaged to give an estimate of costs for a typical entry group. The results for each year were very similar, with the variation from the mean being less than 0.5%. This was not surprising given the similarity of the intakes in the three years.
- 4.5 It is important to note that this model differs from the model used in 2002 in a number of ways:
- it is based on the age distributions of the actual intake cohorts;
 - it does not include the costs associated with the additional places provided under the non-contributory parent visa stream;

- it separately identifies health and aged care expenditure;
- it uses health inflation factors which are specific to a single year of age and a particular projection year;
- it allows for future mortality improvement to be included for sensitivity analysis; and
- marital status is taken into account in determining pension entitlements.

4.6 In addition, all of the assumptions have been updated to reflect the most recently available information.

5 Results

5.1 The model produces estimates of cashflows in nominal dollars over the next sixty years split between health costs, pension costs, aged care costs and other costs. These cashflows can be discounted to generate a present value of outlays. The model also calculates the cashflows and present value of estimated revenue split between the first and second visa application charges. Note that the model considers the costs associated with a single cohort rather than the total cost of successive cohorts.

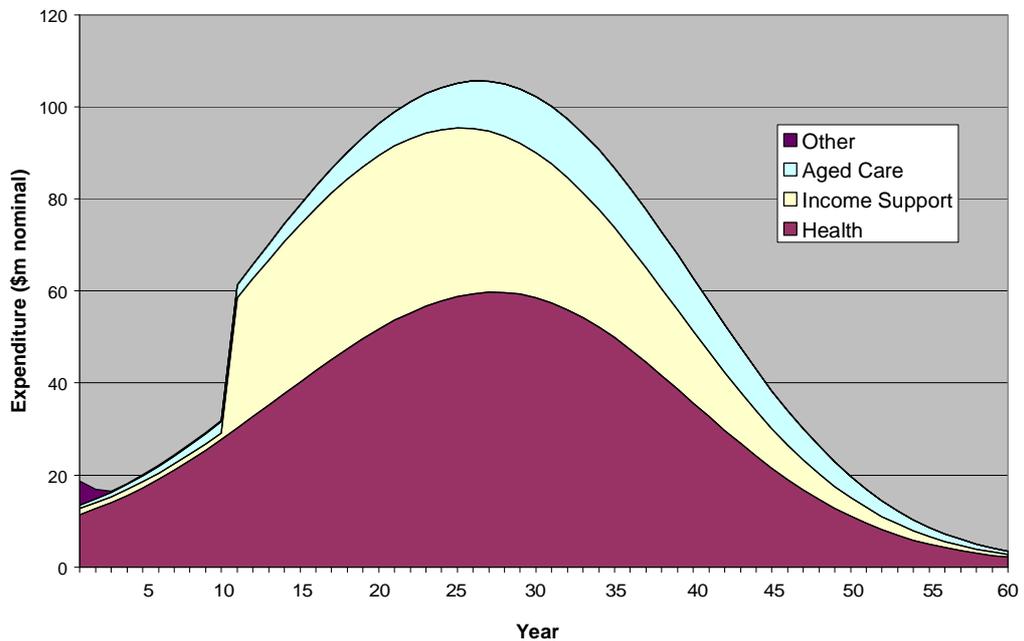
5.2 The following table shows the present (discounted) value of the various types of future expenditure, together with the percentage that they represent of total future expenditure. These figures relate to a population of 3,423 adults who would be liable to pay the second visa application charge. The remaining 77 arrivals are children aged under 18 who pay a much smaller second visa application charge.

Commonwealth Expenditure Associated with the Contributory Parent Visa

	Present Value of Expenditure (\$m)	Percentage of Total Expenditure
Health	524	59%
Income Support	276	31%
Aged Care	76	9%
Other	9	1%
Total	884	100%

Note that columns may not add due to rounding

5.3 The pattern of cashflows contributing to these estimates is shown in the following chart. Note that these are shown as nominal dollars and have not been discounted to give a present value.



5.4 The effect of the ten year exclusion period from income support benefits is clearly visible as is the effect of increasing health and aged care expenditure as the population ages.

5.5 The projected revenue from the visa application charges in nominal and discounted values is shown in the following table split between the first and second instalments. Note that for those transitioning from a temporary to permanent visa, all charges associated with the transition are treated as part of the second instalment.

Instalment	Year 1 Revenue (\$m)	Year 3 Revenue (\$m)	Present Value (\$m)
First	3	0	3
Second	98	11	104
Total	101	11	108

Note that columns may not add due to rounding.

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 5 alternative scenarios have been included here. The assumptions which have been altered are shown in the table below.

Scenario	Future Mortality Improvement¹	Age Adjustment for Mortality²	Excess Health Inflation³
Base	0	3	0.7%
Scenario 1	100	3	0.7%
Scenario 2	100	0	0.7%
Scenario 3	0	0	0.7%
Scenario 4	0	3	0.4%
Scenario 5	0	3	1.0%

¹ 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

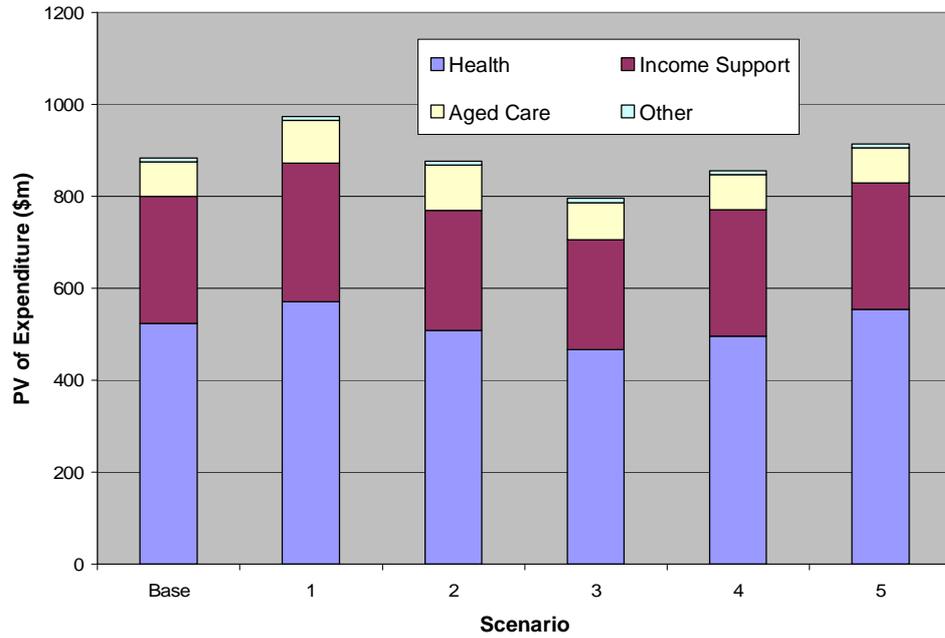
over the past 100 years ('100') or that it improves in line with the improvements observed over the past 25 years. Improvement rates over the past 25 years have been greater than over the last century and it is doubtful whether they could be sustained over the extended projection period incorporated in the model.

- ² Applicants under the CPV program must undergo a health check. Combined with the fact that the people in these populations are in a position to migrate, this suggests that the populations should be somewhat healthier than the Australian population on average. This can be allowed for by assuming that they behave like a person who is somewhat younger. The base scenario assumes they will have the attributes of someone three years younger than they actually are.
- ³ Excess health inflation is the number of percentage points by which health costs are assumed to exceed GDP growth.

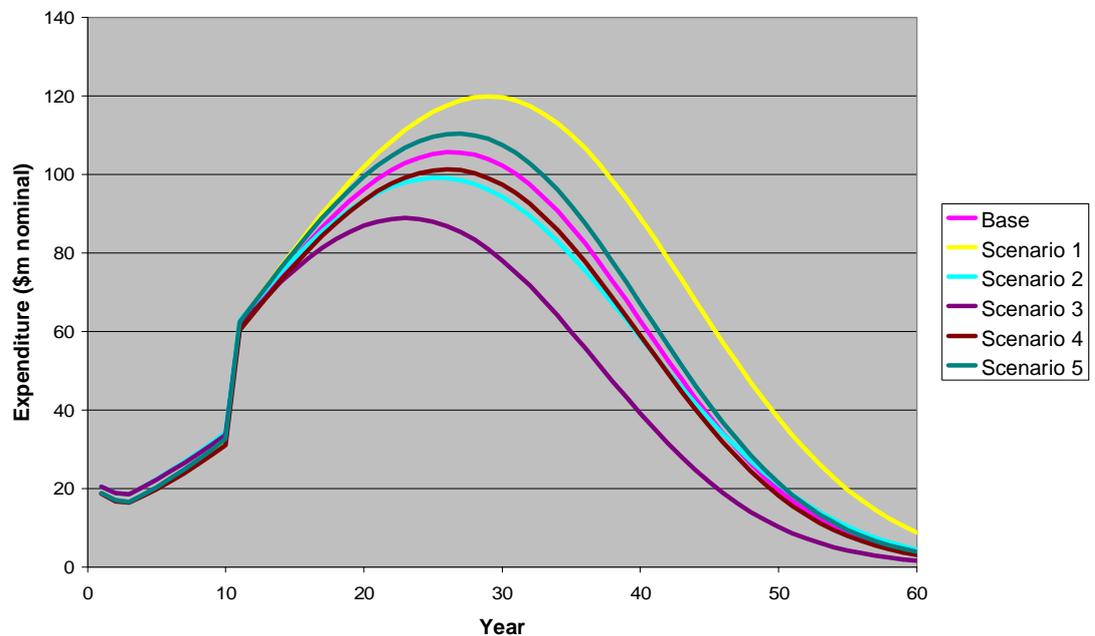
6.2 The results under each scenario are shown below.

Scenario	Present Value of Expenditure (\$m)	Percentage Change
Base	884	-
Scenario 1	974	10.2%
Scenario 2	876	-0.8%
Scenario 3	796	-10.0%
Scenario 4	856	-3.2%
Scenario 5	914	3.4%

6.3 The following chart shows how the total cost is split between the various components under each scenario.



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.



7 Implications for Setting the CPV

- 7.1 There is considerable uncertainty about the costs that will be incurred by the Commonwealth through the access to health and welfare services by CPV migrants. The initial assumptions adopted here are based on per capita costs for the Australian population as a whole, with adjustments where there is reason to believe that differences are likely. The choice of future expenditure growth rates is subject to even greater uncertainty as this cannot be known for the population as a whole over such a long period, let alone for the particular subgroups being modelled here.
- 7.2 It therefore needs to be recognised that the models are producing estimates of outcomes that are likely to be of the right magnitude but are not precise calculations of future expenditure. The sensitivity analysis shows that the projected costs can vary quite significantly with relatively small changes in assumptions that fall well within the range of what could be considered reasonable.
- 7.3 As such, it can be argued that the Government should not be targeting a very specific percentage in setting the second visa application charge for the CPV. Rather it may be appropriate to take a view that if the charge is found to be within, say, 1 percentage points of the target value there is no need to make an ad hoc adjustment.
- 7.4 The estimated value of the second visa application charge based on the current charge rates is \$104m and this does not change with the different scenarios. As a percentage of the estimated cost to the Commonwealth of \$884m, this represents 11.8% of the total cost under the base scenario and between 10.7% and 13.1% of the total cost under the various other scenarios. It can, therefore, be considered to be broadly in line with the Government's target of 12% cost recovery.
- 7.5 The current exercise also provides a new set of weights for use in the calculation of the Contributory Parent Visa Composite Index (CPVCI). The following table compares the weights used in the existing index and revised weightings that derived from the current calculations. Note that aged care was not separately identified when we originally undertook this exercise because the AIHW included aged care as part of health expenditure at that time. In the most recent AIHW publications (for 2005-06), aged care is included as welfare expenditure.

Commonwealth Expenditure Associated with the Contributory Parent Visa

Component	CPVCI Weighting	Revised Weighting
Health	60%	59%
Aged Care	9%	9%
Income Support	35%	31%
Other	5%	1%

- 7.6 It can be seen that the combined weighting of health and aged care expenditure has increased significantly since the last report. This is to be expected as health expenditure has grown much more quickly than the other components over the period the CPVCI has operated. An important reason for the current exercise was to reset the CPVCI weightings to address this known feature of recent experience. It highlights the need to undertake periodic reviews of the model assumptions in order to incorporate the latest available information.
- 7.7 It would be expected that health costs will continue to increase in importance over coming years. In setting the weightings for future CPVCI calculations, it is therefore reasonable to make some allowance for this growth. Accordingly, in deriving the CPVCI for 2008-09, we weighted health costs at 60% (rather than the 59% figure based on the model outputs), aged care at 9%, income support at 30% and other costs at 1%.
- 7.8 This gave a CPVCI for 2008/09 of 3.7%, compared to 3.6% under the weighting that has been used for calculating the CPVCI in previous years. (Note that this is much less than the increases in recent years because the growth in health costs over 2004-05 to 2005-06 were relatively low at 3.4%, compared with an average increase of 7.3% over the three years prior to 2004-05. Note also that the difference between the results under the old and new weightings would be much greater with a higher health inflation result.)
- 7.9 Applying this index means that revenue from the second visa application charge amounts to 12.2% of the total cost to the Commonwealth under the base scenario assumptions.

8 Comments on Results

- 8.1 It is clear from the model results that health expenditures dominate the total costs under all of the scenarios. The assumption of costs increasing faster for older age groups which we have adopted for this model leads to a very steep increase in future health costs and has amplified the importance of health care costs relative to the original model. As noted in the section on assumptions, this approach has been taken in response to the recent experience with utilisation by older age groups. It is, however, very unclear how the pressure that this imposes on the health system will be dealt with in coming years.
- 8.2 Consequently, and unavoidably, there is a substantial margin of uncertainty associated with these estimates and the results could be quite different under alternative assumption sets which are also reasonable. Furthermore, 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. The estimates presented here should therefore be taken as broadly indicative results rather than precise projections.



Susan Antcliff
Actuary

November 2008

Assumptions

Table 1: Health costs for a person who does not die during the year of age (\$2007/08)

Age	PerCapitaCost	Age	PerCapitaCost	Age	PerCapitaCost
0	1,395	37	1,407	74	5,628
1	1,235	38	1,411	75	5,273
2	1,036	39	1,415	76	5,331
3	901	40	1,419	77	5,388
4	772	41	1,438	78	5,478
5	359	42	1,455	79	5,563
6	284	43	1,498	80	5,632
7	210	44	1,539	81	5,608
8	204	45	1,662	82	5,565
9	199	46	1,708	83	5,627
10	194	47	1,753	84	5,664
11	198	48	1,811	85	4,387
12	202	49	1,868	86	4,235
13	213	50	1,926	87	4,080
14	225	51	2,009	88	3,925
15	837	52	2,091	89	3,771
16	877	53	2,214	90	3,619
17	916	54	2,336	91	3,471
18	962	55	2,460	92	3,328
19	1,008	56	2,580	93	3,187
20	1,054	57	2,699	94	3,050
21	1,098	58	2,827	95	2,923
22	1,145	59	2,955	96	2,808
23	1,183	60	3,081	97	2,708
24	1,223	61	3,237	98	2,617
25	1,240	62	3,391	99	2,531
26	1,281	63	3,610	100	2,452
27	1,320	64	3,827	101	2,378
28	1,329	65	4,173	102	2,309
29	1,337	66	4,387	103	2,244
30	1,344	67	4,602	104	2,184
31	1,346	68	4,816	105	2,127
32	1,350	69	5,030	106	2,074
33	1,347	70	5,232	107	2,024
34	1,345	71	5,346	108	1,977
35	1,411	72	5,447	109	1,933
36	1,410	73	5,541	110	1,891

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: Initial Age Pension Rates (\$2007/08)

Category	Annual Age Pension
Single person	\$10,260
Couple (combined)	\$14,900

Table 4: Per capita aged care costs (\$2007/08)

Age	Aged care costs	Age	Aged care costs	Age	Aged care costs
0	19.50	37	19.50	74	988.31
1	19.50	38	19.50	75	1,143.45
2	19.50	39	19.50	76	1,257.73
3	19.50	40	19.50	77	1,403.36
4	19.50	41	19.50	78	1,561.23
5	19.50	42	19.50	79	1,762.68
6	19.50	43	19.50	80	2,112.71
7	19.50	44	19.50	81	2,390.17
8	19.50	45	19.50	82	2,722.38
9	19.50	46	19.50	83	3,115.25
10	19.50	47	19.50	84	3,561.04
11	19.50	48	19.50	85	4,299.32
12	19.50	49	19.50	86	4,910.84
13	19.50	50	52.71	87	5,642.07
14	19.50	51	52.71	88	6,421.13
15	19.50	52	52.71	89	7,426.07
16	19.50	53	52.71	90	8,494.34
17	19.50	54	52.71	91	9,738.94
18	19.50	55	55.51	92	11,115.93
19	19.50	56	55.51	93	12,678.11
20	19.50	57	55.52	94	14,348.52
21	19.50	58	55.52	95	15,548.87
22	19.50	59	55.51	96	15,548.87
23	19.50	60	63.82	97	15,548.87
24	19.50	61	63.82	98	15,548.87
25	19.50	62	63.82	99	15,548.87
26	19.50	63	63.81	100	15,548.87
27	19.50	64	63.82	101	15,548.87
28	19.50	65	140.56	102	15,548.87
29	19.50	66	157.95	103	15,548.87
30	19.50	67	180.28	104	15,548.87
31	19.50	68	206.58	105	15,548.87
32	19.50	69	239.03	106	15,548.87
33	19.50	70	735.13	107	15,548.87
34	19.50	71	781.37	108	15,548.87
35	19.50	72	839.63	109	15,548.87
36	19.50	73	909.90	110	15,548.87

Table 5: Male mortality rates (ALT2000-02)

Age	Mortality Rate	Age	Mortality Rate	Age	Mortality Rate
0	0.005674	37	0.001379	74	0.035338
1	0.000436	38	0.001440	75	0.039213
2	0.000309	39	0.001511	76	0.043495
3	0.000245	40	0.001593	77	0.048208
4	0.000192	41	0.001686	78	0.053377
5	0.000172	42	0.001790	79	0.058826
6	0.000154	43	0.001907	80	0.063990
7	0.000139	44	0.002035	81	0.069693
8	0.000128	45	0.002177	82	0.076872
9	0.000123	46	0.002332	83	0.085453
10	0.000125	47	0.002501	84	0.095119
11	0.000136	48	0.002690	85	0.105563
12	0.000156	49	0.002904	86	0.116484
13	0.000189	50	0.003148	87	0.127597
14	0.000233	51	0.003429	88	0.138628
15	0.000305	52	0.003751	89	0.149317
16	0.000462	53	0.004120	90	0.159337
17	0.000730	54	0.004541	91	0.168279
18	0.000938	55	0.005021	92	0.176379
19	0.000958	56	0.005564	93	0.184432
20	0.000956	57	0.006177	94	0.193093
21	0.000977	58	0.006863	95	0.202055
22	0.001014	59	0.007630	96	0.210694
23	0.001059	60	0.008482	97	0.219294
24	0.001104	61	0.009424	98	0.227845
25	0.001142	62	0.010462	99	0.236343
26	0.001167	63	0.011602	100	0.244785
27	0.001181	64	0.012847	101	0.253169
28	0.001187	65	0.014204	102	0.261492
29	0.001189	66	0.015681	103	0.269749
30	0.001191	67	0.017306	104	0.277940
31	0.001195	68	0.019108	105	0.286060
32	0.001206	69	0.021120	106	0.294106
33	0.001225	70	0.023369	107	0.302077
34	0.001250	71	0.025887	108	0.309969
35	0.001284	72	0.028703	109	0.317779
36	0.001327	73	0.031844	110	1.000000

Table 6: Female mortality rates (ALT2000-02)

Age	Mortality Rate	Age	Mortality Rate	Age	Mortality Rate
0	0.004659	37	0.000704	74	0.020565
1	0.000425	38	0.000757	75	0.022692
2	0.000188	39	0.000816	76	0.024998
3	0.000158	40	0.000879	77	0.027767
4	0.000139	41	0.000947	78	0.031233
5	0.000126	42	0.001021	79	0.035435
6	0.000113	43	0.001103	80	0.040359
7	0.000101	44	0.001194	81	0.045992
8	0.000092	45	0.001296	82	0.052318
9	0.000086	46	0.001410	83	0.059321
10	0.000085	47	0.001537	84	0.066983
11	0.000090	48	0.001680	85	0.075284
12	0.000103	49	0.001839	86	0.084204
13	0.000124	50	0.002016	87	0.093721
14	0.000154	51	0.002213	88	0.103812
15	0.000196	52	0.002430	89	0.114453
16	0.000247	53	0.002670	90	0.125786
17	0.000295	54	0.002933	91	0.137835
18	0.000329	55	0.003222	92	0.150115
19	0.000348	56	0.003538	93	0.162048
20	0.000359	57	0.003881	94	0.173366
21	0.000363	58	0.004254	95	0.184364
22	0.000365	59	0.004658	96	0.195404
23	0.000368	60	0.005095	97	0.206355
24	0.000372	61	0.005566	98	0.217213
25	0.000377	62	0.006071	99	0.227974
26	0.000386	63	0.006617	100	0.238633
27	0.000396	64	0.007218	101	0.249184
28	0.000410	65	0.007895	102	0.259623
29	0.000427	66	0.008667	103	0.269945
30	0.000448	67	0.009552	104	0.280144
31	0.000472	68	0.010571	105	0.290217
32	0.000500	69	0.011742	106	0.300159
33	0.000533	70	0.013084	107	0.309965
34	0.000569	71	0.014615	108	0.319631
35	0.000610	72	0.016374	109	0.329154
36	0.000654	73	0.018412	110	1.000000

Table 7: Male 25 year mortality improvement rates (ALT2000-02)

Age	Improvement (per cent)	Age	Improvement (per cent)	Age	Improvement (per cent)
0	-3.8166	37	-1.4467	74	-2.4856
1	-3.8071	38	-1.6436	75	-2.4174
2	-3.7977	39	-1.8397	76	-2.3481
3	-3.7882	40	-2.0332	77	-2.2779
4	-3.7788	41	-2.2224	78	-2.2067
5	-3.7693	42	-2.4054	79	-2.1348
6	-3.7599	43	-2.5803	80	-2.0622
7	-3.7410	44	-2.7454	81	-1.9891
8	-3.7022	45	-2.8987	82	-1.9154
9	-3.6388	46	-3.0386	83	-1.8415
10	-3.5465	47	-3.1631	84	-1.7673
11	-3.4208	48	-3.2705	85	-1.6643
12	-3.2361	49	-3.3589	86	-1.5648
13	-3.1156	50	-3.4265	87	-1.5083
14	-3.0914	51	-3.4715	88	-1.4633
15	-3.1127	52	-3.4920	89	-1.4271
16	-3.1497	53	-3.4863	90	-1.3967
17	-3.1727	54	-3.4524	91	-1.3693
18	-3.1521	55	-3.4333	92	-1.3421
19	-3.0582	56	-3.4059	93	-1.3123
20	-2.8613	57	-3.3755	94	-1.2769
21	-2.5461	58	-3.3420	95	-1.2332
22	-2.0187	59	-3.3056	96	-1.1556
23	-1.5152	60	-3.2665	97	-1.0747
24	-1.1245	61	-3.2247	98	-0.9938
25	-0.8143	62	-3.1803	99	-0.9129
26	-0.5802	63	-3.1334	100	-0.8319
27	-0.4175	64	-3.0842	101	-0.7510
28	-0.3219	65	-3.0328	102	-0.6701
29	-0.2886	66	-2.9792	103	-0.5892
30	-0.3132	67	-2.9235	104	-0.5082
31	-0.3912	68	-2.8659	105	-0.4273
32	-0.5179	69	-2.8065	106	-0.3464
33	-0.6886	70	-2.7453	107	-0.2655
34	-0.8699	71	-2.6826	108	-0.1845
35	-1.0581	72	-2.6183	109	-0.1036
36	-1.2509	73	-2.5526	110	-0.0227

Table 8: Female 25 year mortality improvement rates (ALT2000-02)

Age	Improvement (per cent)	Age	Improvement (per cent)	Age	Improvement (per cent)
0	-4.1221	37	-1.9824	74	-2.3002
1	-4.0607	38	-2.1212	75	-2.2939
2	-3.9958	39	-2.2701	76	-2.2857
3	-3.9268	40	-2.4121	77	-2.2728
4	-3.8533	41	-2.5299	78	-2.2525
5	-3.7749	42	-2.6249	79	-2.2222
6	-3.6912	43	-2.6988	80	-2.1376
7	-3.6017	44	-2.7535	81	-2.0697
8	-3.5061	45	-2.7907	82	-1.9795
9	-3.4039	46	-2.8122	83	-1.8798
10	-3.2947	47	-2.8198	84	-1.7950
11	-3.1781	48	-2.8152	85	-1.7190
12	-3.0536	49	-2.8001	86	-1.6508
13	-2.9208	50	-2.7764	87	-1.5894
14	-2.7867	51	-2.7459	88	-1.5336
15	-2.6288	52	-2.7102	89	-1.4826
16	-2.4523	53	-2.6712	90	-1.4351
17	-2.2630	54	-2.6307	91	-1.3902
18	-2.0676	55	-2.5903	92	-1.3468
19	-1.8823	56	-2.5519	93	-1.3038
20	-1.6794	57	-2.5172	94	-1.2603
21	-1.4640	58	-2.4880	95	-1.2152
22	-1.2928	59	-2.4661	96	-1.1673
23	-1.2208	60	-2.4563	97	-1.1157
24	-1.2089	61	-2.4565	98	-1.0749
25	-1.1947	62	-2.4651	99	-0.9934
26	-1.1923	63	-2.4795	100	-0.8866
27	-1.2032	64	-2.4961	101	-0.7485
28	-1.2271	65	-2.5108	102	-0.6242
29	-1.2638	66	-2.5183	103	-0.4999
30	-1.3129	67	-2.5127	104	-0.3756
31	-1.3742	68	-2.4870	105	-0.2513
32	-1.4474	69	-2.4551	106	-0.1271
33	-1.5323	70	-2.4007	107	-0.0028
34	-1.6285	71	-2.3459	108	0.0000
35	-1.7357	72	-2.3088	109	0.0000
36	-1.8538	73	-2.3072	110	0.0000

Table 9: Male 100 year mortality improvement rates (ALT2000-02)

Age	Improvement (per cent)	Age	Improvement (per cent)	Age	Improvement (per cent)
0	-2.8520	37	-1.7498	74	-0.8024
1	-3.8305	38	-1.7405	75	-0.7893
2	-3.0955	39	-1.7256	76	-0.7774
3	-3.0404	40	-1.7047	77	-0.7666
4	-3.0503	41	-1.6802	78	-0.7520
5	-2.9457	42	-1.6553	79	-0.7376
6	-2.8718	43	-1.6372	80	-0.7319
7	-2.8508	44	-1.6184	81	-0.7214
8	-2.8249	45	-1.5992	82	-0.6988
9	-2.7848	46	-1.5812	83	-0.6650
10	-2.7138	47	-1.5589	84	-0.6269
11	-2.5919	48	-1.5349	85	-0.5890
12	-2.4606	49	-1.5120	86	-0.5516
13	-2.3542	50	-1.4895	87	-0.5191
14	-2.2438	51	-1.4663	88	-0.4923
15	-2.1234	52	-1.4395	89	-0.4716
16	-1.8522	53	-1.4111	90	-0.4593
17	-1.5343	54	-1.3821	91	-0.4562
18	-1.3925	55	-1.3566	92	-0.4593
19	-1.4481	56	-1.3289	93	-0.4648
20	-1.5116	57	-1.2991	94	-0.4710
21	-1.5487	58	-1.2677	95	-0.4799
22	-1.5682	59	-1.2349	96	-0.4942
23	-1.5790	60	-1.2043	97	-0.5123
24	-1.5915	61	-1.1761	98	-0.5329
25	-1.5938	62	-1.1510	99	-0.5723
26	-1.6048	63	-1.1293	100	-0.6415
27	-1.6241	64	-1.1092	101	-0.5774
28	-1.6376	65	-1.0914	102	-0.5132
29	-1.6498	66	-1.0696	103	-0.4491
30	-1.6702	67	-1.0391	104	-0.3849
31	-1.6930	68	-1.0011	105	-0.3208
32	-1.7076	69	-0.9554	106	-0.2566
33	-1.7261	70	-0.9025	107	-0.1925
34	-1.7415	71	-0.8537	108	-0.1283
35	-1.7512	72	-0.8268	109	-0.0642
36	-1.7543	73	-0.8153	110	0.0000

Table 10: Female 100 year mortality improvement rates (ALT2000-02)

Age	Improvement (per cent)	Age	Improvement (per cent)	Age	Improvement (per cent)
0	-2.8909	37	-2.3306	74	-1.1375
1	-3.7967	38	-2.2797	75	-1.1483
2	-3.6752	39	-2.2107	76	-1.1603
3	-3.5036	40	-2.1237	77	-1.1574
4	-3.3284	41	-2.0362	78	-1.1321
5	-3.2113	42	-1.9657	79	-1.0951
6	-3.1346	43	-1.9139	80	-1.0507
7	-3.1070	44	-1.8800	81	-0.9985
8	-3.0769	45	-1.8462	82	-0.9451
9	-3.0372	46	-1.8064	83	-0.8952
10	-2.9632	47	-1.7619	84	-0.8460
11	-2.8315	48	-1.7212	85	-0.7981
12	-2.6861	49	-1.6787	86	-0.7545
13	-2.5640	50	-1.6380	87	-0.7147
14	-2.4734	51	-1.5989	88	-0.6783
15	-2.3884	52	-1.5589	89	-0.6451
16	-2.3185	53	-1.5282	90	-0.6134
17	-2.2617	54	-1.5026	91	-0.5828
18	-2.2255	55	-1.4800	92	-0.5578
19	-2.2249	56	-1.4593	93	-0.5417
20	-2.2419	57	-1.4390	94	-0.5361
21	-2.2911	58	-1.4230	95	-0.5404
22	-2.3492	59	-1.4108	96	-0.5521
23	-2.4038	60	-1.4025	97	-0.5710
24	-2.4509	61	-1.3920	98	-0.5959
25	-2.4901	62	-1.3811	99	-0.6384
26	-2.5245	63	-1.3696	100	-0.7056
27	-2.5361	64	-1.3548	101	-0.6350
28	-2.5357	65	-1.3354	102	-0.5645
29	-2.5265	66	-1.3133	103	-0.4939
30	-2.5190	67	-1.2867	104	-0.4234
31	-2.5114	68	-1.2594	105	-0.3528
32	-2.4999	69	-1.2321	106	-0.2822
33	-2.4787	70	-1.2049	107	-0.2117
34	-2.4541	71	-1.1802	108	-0.1411
35	-2.4197	72	-1.1592	109	-0.0706
36	-2.3744	73	-1.1419	110	0.0000

Table 11: Other program assumptions

Program Element	Assumption
Set up cost for Assurance of Support	\$800
Cost of activating Assurance of Support	\$2,000
Percentage of applicants activating Assurance of Support	5%
Cost of AMEP place	\$5,854
Percentage of applicants accessing AMEP	27%
Processing cost for visa application	\$392.10

Table 12: Financial assumptions

Variable	Assumption
CPI growth	2.5%
General wage growth	4.0%
GDP growth	5.5%
Discount rate	6.0%

Table 13: Visa charges

Visa Element	Charge
First visa application charge (temporary or permanent, offshore)	\$1,390
First visa application charge (temporary or permanent, onshore)	\$2,060
First visa application charge (transition from temporary to permanent)	\$190
Second visa application charge (permanent, adult)	\$31,555
Second visa application charge (permanent, child)	\$1,365
Second visa application charge (temporary, adult)	\$18,935
Second visa application charge (temporary, child)	\$1,365
Second visa application charge (transition from temporary to permanent, adult)	\$12,625
Second visa application charge (transition from temporary to permanent, child)	\$0

Table 14: Visa take-up rates

	Assumption
Proportion of temporary CPV holders who transition to a permanent visa	95%