**Productivity Commission Study**

**into the**

**Economic Implications of an Ageing Population**

# Tasmanian Government Submission

**November 2004**

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## INTRODUCTION

The Tasmanian Government welcomes the Productivity Commission research study into the economic and fiscal impacts of population ageing as an important first step in quantifying the effect of population ageing on all levels of Government.

While each State and Territory has its own specific demographic issues, the effect of population ageing is a national issue with significant consequential economic and fiscal pressures for all levels of Government. Not only should there therefore be a coordinated national response to population ageing, but this response must be sensitive to regional and jurisdictional differences.

In preparing this initial submission to the Productivity Commission, Treasury has undertaken preliminary economic modelling. The modelling has been undertaken using the model prepared by Access Economics and is consistent with the approach adopted by other States and Territories.

This preliminary modelling clearly illustrates the significance of the issue of ageing to Tasmania's economic and financial position over the next forty years. While this is the case, the Tasmanian Government strongly believes that further modelling is required to fully understand the likely impact of ageing on the Tasmanian economy.

As is the case with any economic modelling of this nature, the preliminary results which have been obtained through the modelling process are heavily dependent on model assumptions and data inputted. It is also often a case that a conservative approach is taken to these elements of the modelling process. The Government therefore notes that this preliminary modelling does not fully reflect the major changes which have occurred in the Tasmanian economy in recent years after a prolonged period of economic stagnation. The Government strongly believes that many of these changes are structural in nature and will be shown to be essential to include in modelling to be undertaken in future years.

It is also important to emphasise that the preliminary modelling results obtained by the Treasury takes no account of new Government policy initiatives which will continue to be implemented by the Government to address the economic, social and financial issues being faced by Tasmania. Such initiatives will have a significant impact on what ultimately occurs in Tasmania. An example of the Government's policy decision impact is its strong support for a Pulp Mill in Tasmania. Economic modelling undertaken in relation to this project shows that it could result in an increase of 2% in Tasmania's GSP which is a very significant positive impact on Tasmania's economy.

The Tasmanian Government looks forward to having the opportunity to comment on the Productivity Commission's draft report.

## TASMANIA'S POPULATION

Australia's population is ageing and the demographic profile will change significantly over the next forty years. However, the rapidity and structure of ageing varies between and within Australian States and Territories. It is projected that Tasmania's

population will experience ageing more rapidly and before all other Australian States and Territories.

## Historical and projected demographic trends

The Tasmanian population has been ageing since the late 1960s, when Census data indicated a turning point in the median age. The number of Tasmanians aged less than 15 years has been declining over time, and the number aged 65 and over has been increasing.

The results presented here use demographic assumptions based on the 2003 ABS Mid Series and 2003 ABS Series 28 projections which differ only in terms of their assumed level and composition of interstate migration for Tasmania.

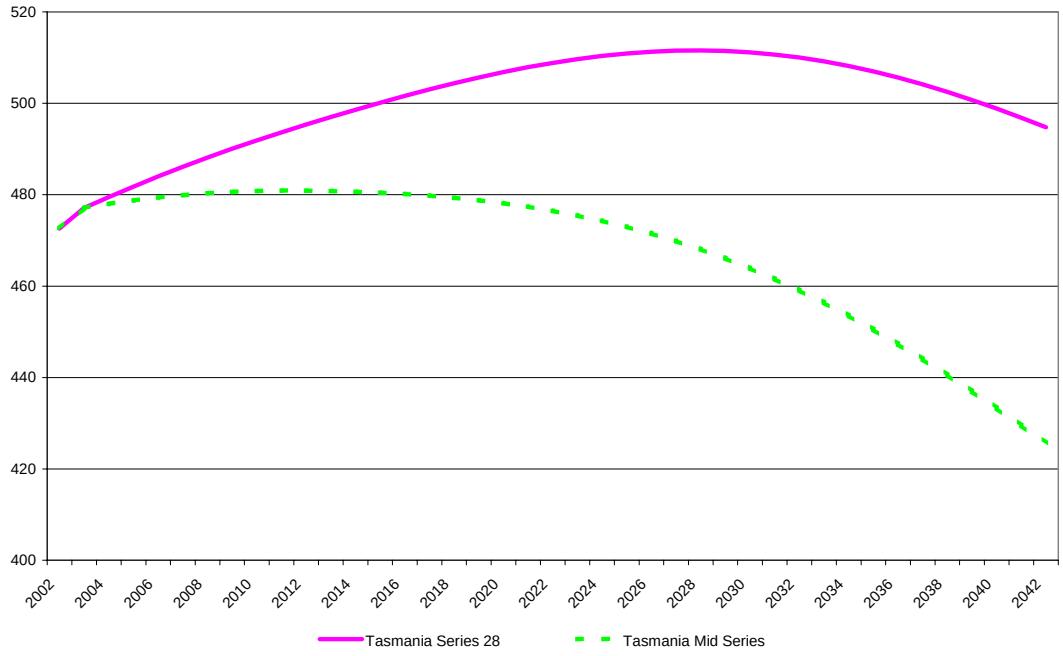
Until the turnaround in Tasmania's net interstate migration that began around two years ago, the Mid Series, which assumes net outward interstate migration of 1,500 per year, appeared to be the more plausible of the two sets of population projections for Tasmania. Now that Tasmania has experienced net interstate migration of 1,895 in 2002-03 and 2,531 in the three quarters to March 2004 the Mid Series projection appears pessimistic. The base model scenario therefore uses Series 28, which assumes no net interstate migration, rather than the Mid Series. An alternative scenario is presented using the Mid Series.

The most recent ABS population projections use estimated population at June 2002 as their starting point. Data are now available on the population by age and sex at June 2003. To reflect this, Tasmanian Treasury has updated the starting values for both series 28 and the Mid Series. Under these updated series the Tasmanian population is projected to follow a similar path but with a slightly higher starting point in June 2003 than the initial projected population for June 2003.

Compared to Tasmania's estimated population at March 2004 of around 482,000 persons, even the updated Series 28 appears pessimistic with a projected June 2004 population of only 479,000 persons.

Charts 1, 2 and 3 show the projected total Tasmanian population, the Tasmanian and Australian median ages, and the Tasmanian and Australian dependency ratios under the adjusted series. These show that while Series 28 projects a larger and younger Tasmanian population over time than the Mid Series, under both projections Tasmania's population is projected to age at a faster rate than Australia as a whole.

## Chart 1: Projected Tasmanian population ('000s)




## Chart 2: Tasmania and Australia projected median age (years)

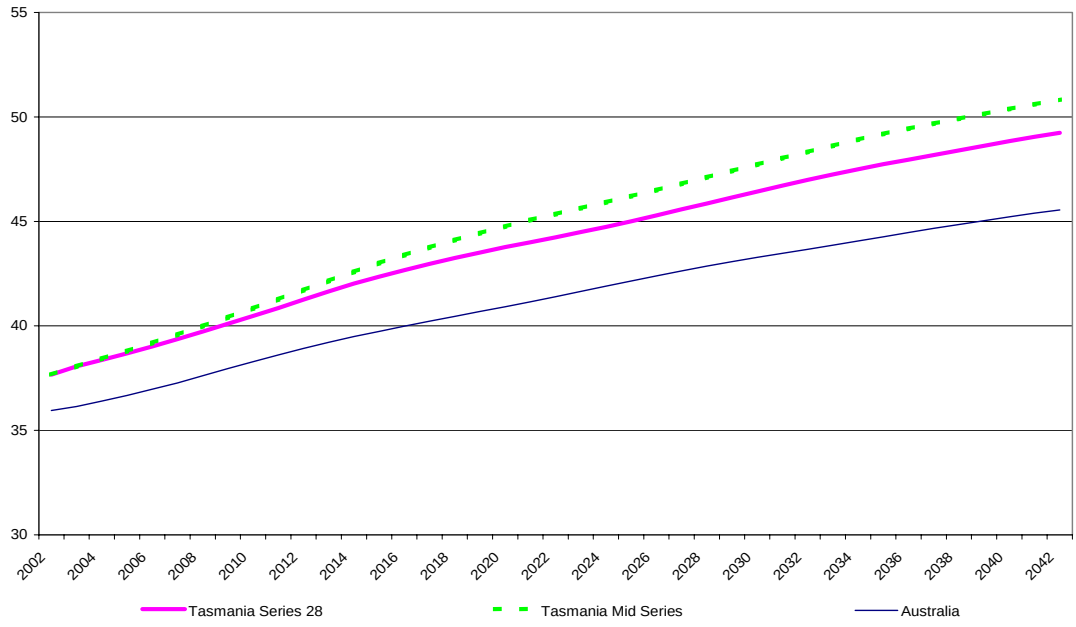
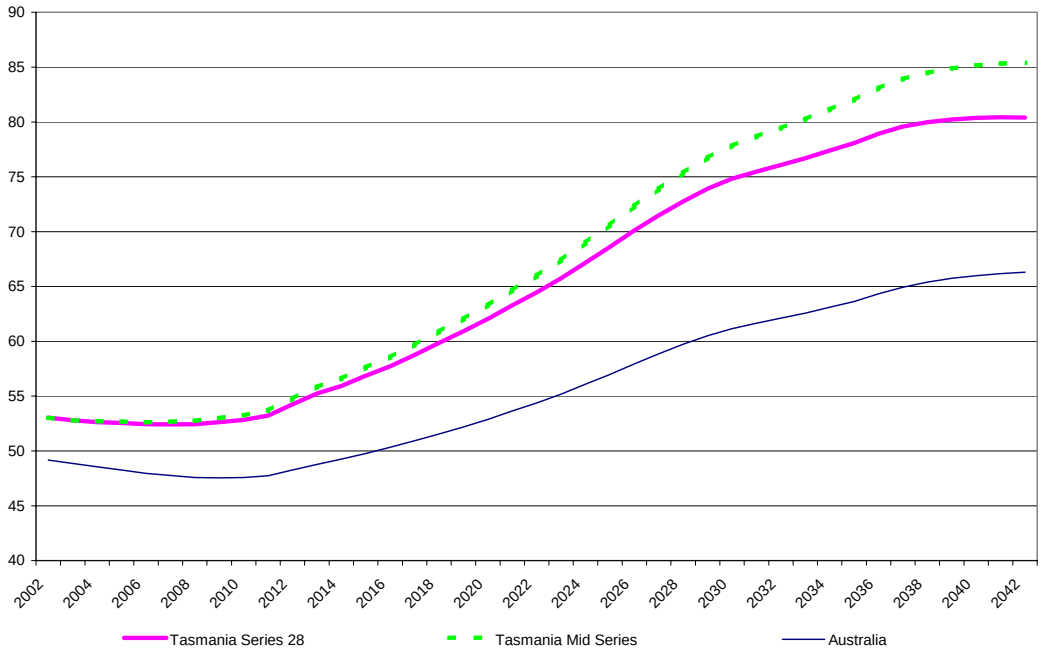


**Chart 3: Tasmanian and Australian total dependency ratio (per cent)**




The numbers of Tasmanians in younger age groups (under 15 years, 15–34 and 35–54) appear to have already peaked and are projected to decline significantly over the next four decades. In contrast, the number of Tasmanians aged 55–64 years is continuing to grow and the number aged 65 years and over is projected to more than double over the next four decades. The number aged 80 and over is projected to more than treble during the same period.

The dependency ratio is a measure intended to reflect the relative size of the population that is 'notionally dependent', or outside the traditional working age range.. The dependency ratio for Tasmania's population has been relatively stable since the mid 1980s and is projected to remain so before increasing substantially after 2011. This is because the growth in the proportion of Tasmanians aged 65 and over has been largely offset by the decline in the proportion aged less than 15 years. The dependency ratio is projected to rise over the next four decades. In the past, most of the dependents were children, whilst in the future, most of the dependents will be elderly. (see Chart 3)

The change to the dependency ratio will be accompanied by a change to the workforce 'exit ratio'. The exit ratio measures the number of workers exiting the labour force compared to the number of workers entering the labour force. Some commentators have projected that over the next ten years, Tasmania will experience an outflow of approximately two mature aged workers to every worker entering the labour force[1], which will have major implications for labour force participation and productivity. Other States and Territories will not experience the transformation of the workforce exit ratio as soon.

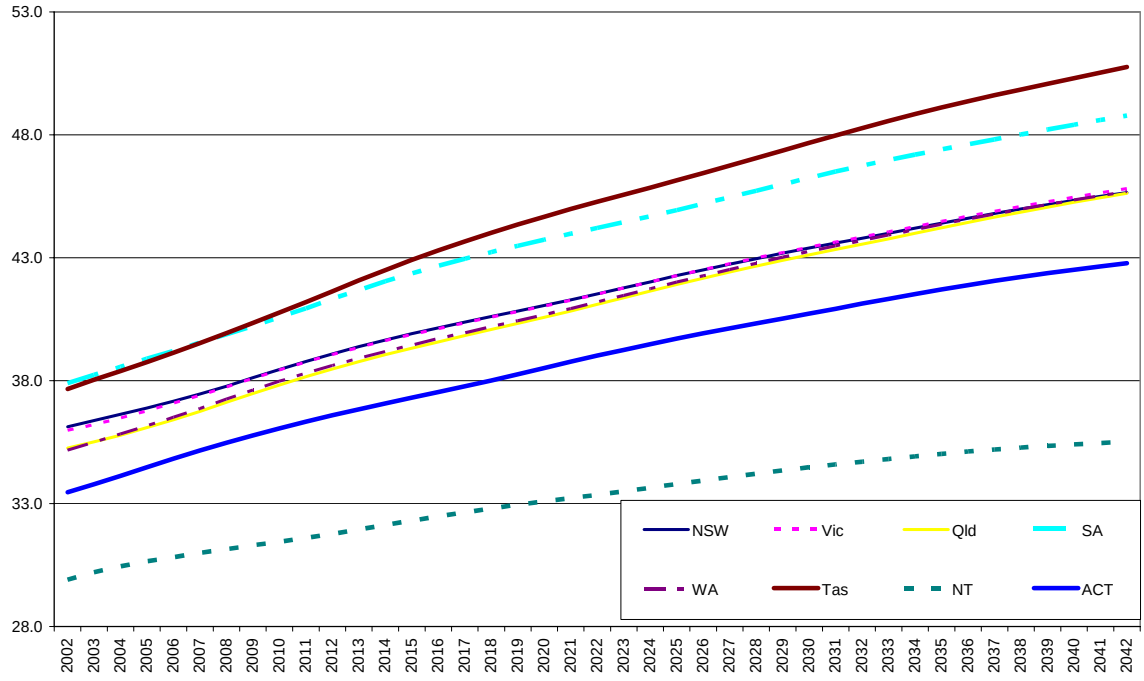
[1] Jackson, N. & Felminhgam, B. 2003 *The Demographic Gift in Australia* Centre for Economic Development.

## Interstate comparisons

In June 2002, fourteen per cent of Tasmanians were aged 65 years and over. Although this was only slightly higher than the national figure of 13 per cent, it is projected that under the ABS Mid Series assumptions by June 2042, 32 per cent of Tasmanians will be aged 65 and over, compared with 26 per cent nationally[2].

Chart 4 presents projections of median ages for all Australian States and Territories. With the exception of the Northern Territory, the median age in all Australian States and territories is projected to increase by between 9.3 years (for the ACT) and 13.1 years (for Tasmania). At June 2002, Tasmania had the second highest median age behind South Australia, and is projected to have the largest increase in median age over the period. Based on the ABS Mid-Series, in 2008 Tasmania will overtake South Australia as the oldest State in Australia.

**Chart 4: Projections of median age (ABS mid series)**

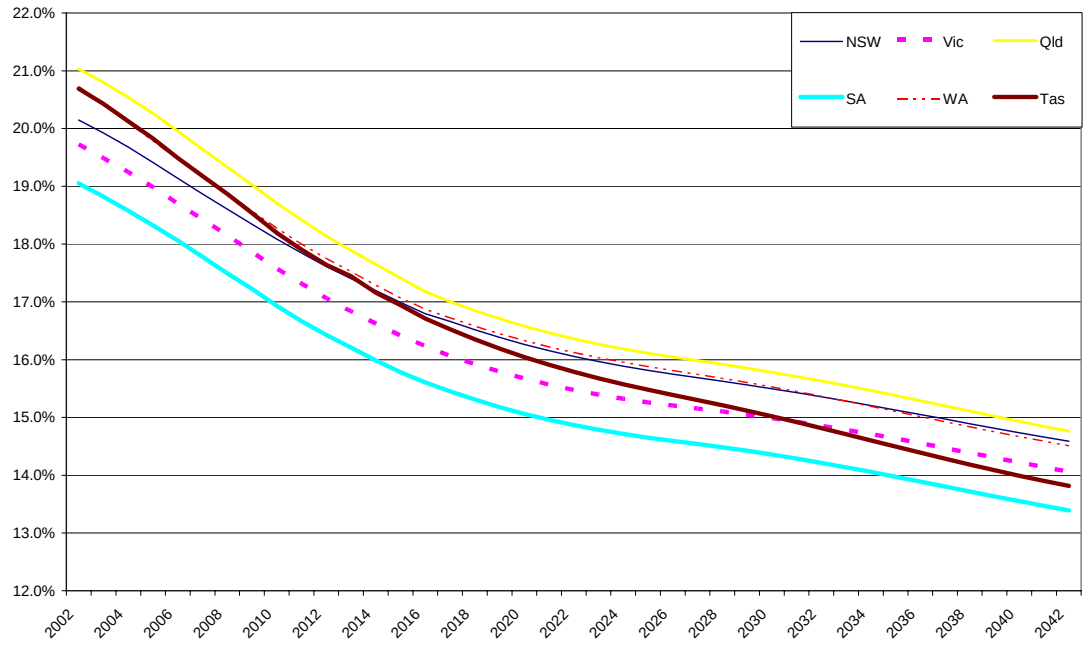



*Source: ABS Population Projections Cat No. 3222.0*

Charts 5 and 6 show that structural ageing is occurring in all Australian States and Territories, however, the effects will be most pronounced in Tasmania. Chart 5 indicates that the size of the projected decline in the population aged less than 15 years over the next forty years ranges from 4.9 percentage points in the Northern Territory to 6.9 in Tasmania.

[2] Australian Bureau of Statistics (2002) *Population Projections 2002–2101*, Cat No. 3222.0

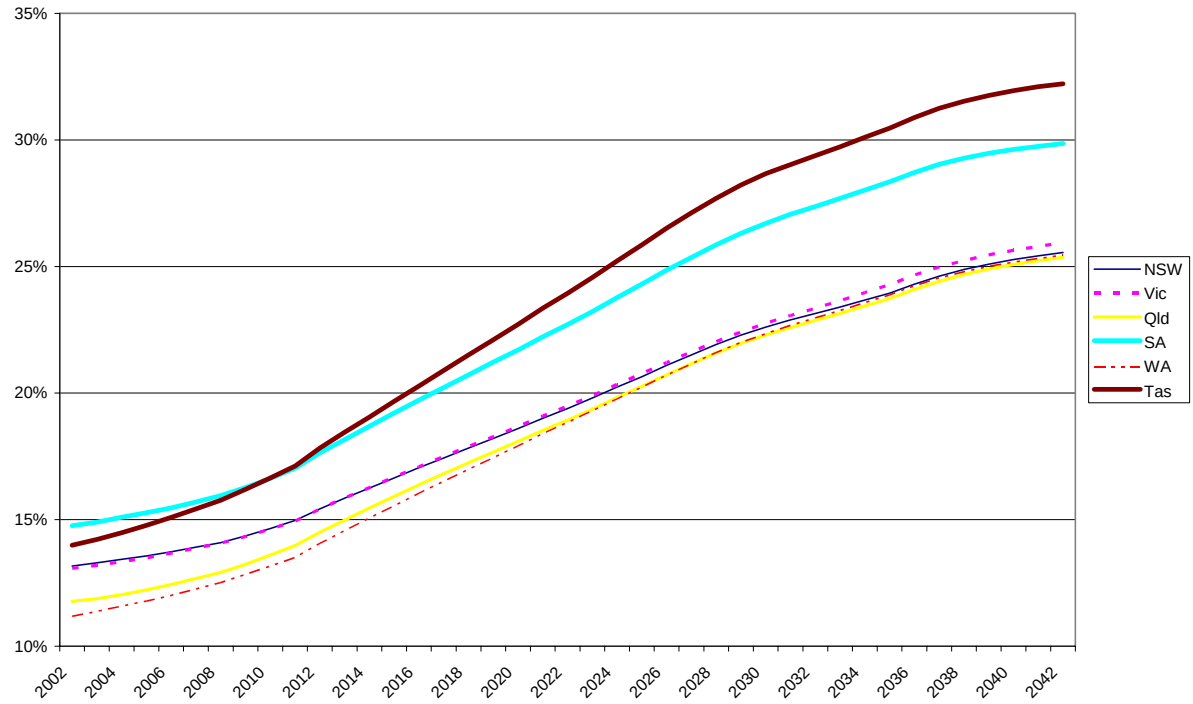
**Chart 5: Percentage of the population aged less than 15 (ABS mid series )**




*Source: ABS Population Projections Cat No. 3222.0*

Chart 6 shows that the proportion aged 65 and over has been increasing over time, but the projected increase, at 18.2 percentage points, is greatest for Tasmania. The projected increase for other jurisdictions ranges from 12.4 percent in New South Wales to 15.1 percent in South Australia.

**Chart 6: Projections of the percentage of the population aged 65 and over (ABS mid-series)**



Clearly, Tasmania is projected to have one of the oldest populations of all the States and Territories. It will also have less time than other Australian states to manage the transition to an older population.

Population ageing occurs at varying rates in different States, Territories and regions. The data indicates that in terms of ageing, Tasmania's population is relatively homogeneous across the three main regions and even at the local government area (LGA) level[3].

## MODELLING THE IMPACT OF POPULATION AGEING

Consistent with the approach of other state and territory governments, the Tasmanian Department of Treasury and Finance (Tasmanian Treasury) has examined some possible economic and fiscal impacts of population ageing based on a model prepared by Access Economics.

The following section presents preliminary results for a number of scenarios developed by Tasmanian Treasury. It is expected that additional work will be undertaken following the release of the Commission's draft report and the results will be presented to the Commission as part of the Tasmanian Government's response to that report. It is important to note that the results are projections and not forecasts, and are heavily dependent on the starting point and assumptions. In particular, the modelling does not allow for any policy-induced changes that governments would impose in order to ensure responsible fiscal management.

The modelling framework and some of the technical issues associated with it are outlined in more detail in Appendix 1.

### Summary of the modelling results

The modelling suggests that the Tasmanian economy will grow significantly over the next four decades. However, the modelling also suggests that Tasmania will continue to be faced with additional economic and fiscal challenges resulting from factors such as a relatively low participation rate and a population which is expected to age faster than other jurisdictions.

The modelling projects increasing pressure on the State's fiscal position over the next four decades under most scenarios. While the modelling generates Tasmanian Government revenue that is similar to expenditure levels for the first decade or two under most of the scenarios examined, the modelling projects increasing fiscal demands on government expenditure over the third and fourth decades. This is because the growth in demand for government services is not matched by growth in available government revenue. As a result, by 2042, the modelling generates a primary deficit for Tasmania of between two and six per cent of Tasmania's GSP under most scenarios, even when Commonwealth Special Purpose Payments (SPPs) are assumed to grow with national GDP.

[3] ABS (2001) *Preliminary Census Results* (Basic Community Profile), ABS Population Projections, Cat No. 3222.0, and Jackson, N (2004) Regional Population Ageing and Local Government Funding: Some Considerations, paper accepted for publication in *Australasian Journal of Regional Studies*, 10(1)

While governments would obviously take measures to prevent this outcome, the modelling suggests that the greater the delay in addressing these issues, the more far reaching the changes would have to be.

The modelling finds that under all scenarios, the demands on the State's budget increase for each future decade. Short or medium term solutions would not, therefore, address the fiscal issues that the modelling projects. This is unlike some other fiscal pressures, such as the funding of public sector superannuation after closure of an unfunded defined benefit scheme. In this case, funding demands may peak after 10 or 20 years and then ease, and there are sound reasons for building up funds to match expenditure needs over the peak period.

The modelling presented below suggests that long term economic and fiscal policy measures would be required to promote economic growth and ensure fiscal stability, and that any build up of funds in the next decade would only provide a temporary solution and not address the underlying fiscal pressures.

**Scenarios presented**

The results of 10 different scenarios, based on different assumptions, are presented below.

The range of assumptions is set out below. More detail is provided in Appendix 1.

*Demographic assumptions*

The model uses two sets of demographic assumptions based on the 2003 ABS Mid Series population projections and the 2003 ABS Series 28 population projections for Australia and Tasmania.

The ABS Series 28 is identical to the Mid Series in terms of its assumptions concerning fertility and mortality rates by age and the level and composition of inward and outward migration for Australia as a whole and for different States. Consequently, Series 28 and the Mid Series produce identical population projections at a national level.

The two series differ in that the Mid Series assumes Tasmania has annual net outward interstate migration of 1,500 persons per year while Series 28 assumes net interstate migration for Tasmania of zero. The composition of interstate migration assumed in the two sets of projections is such that under Series 28 Tasmania's population is larger and ages more slowly, compared to the outcome under the Mid Series.

*Participation rates*

Results are presented based on three sets of assumptions concerning participation rates by age and gender. Under the 'low case' assumptions, participation rates by age and sex are assumed to remain constant at their average levels for the five years to September 2004. The 'mid case' assumptions involve some modest future increases in participation rates, such as in several female age classes, based on past trends. The 'high case' assumptions also allow for future increases in participation rates, based on

past trends but have higher projected increases in participation rates for persons aged 55 to 69.

*Real income effect*

The model assumes that there is a positive relationship between real per capita income and the demand for services provided by the Tasmanian Government. Two assumptions are adopted:

- demand for Tasmanian Government services grows in line with growth in real Tasmanian GSP per capita; and
- demand for Tasmanian Government services grows in line with growth in real Australian GDP per capita.

*Excess expenditure growth*

Excess expenditure growth is growth in projected expenditure by the Tasmanian Government in addition to that driven by population size and structure, real income, inflation and wage growth. This includes super-inflation in the cost of providing government services. Three assumptions are adopted:

- no excess expenditure growth;
- excess expenditure growth of 0.5 per cent per annum in health, education and public order and safety services; and
- excess expenditure growth of 1.0 per cent per annum in health, education and public order and safety services.

*Commonwealth-State relations*

Commonwealth payments accounted for some 62 per cent of Tasmanian Government revenue in 2003-04. Of this, 71 per cent were General Purpose Payments (overwhelmingly GST revenue) while 29 per cent were Specific Purpose Payments (SPPs).

Two assumptions are adopted concerning SPPs:

- the total pool of SPPs grows with GDP; and
- the total pool of SPPs remains constant in real per capita terms.

The GST rate is assumed to remain at 10 per cent.

Tasmanian Treasury believes an important area of future research is an investigation of the detailed indexation arrangements for the different SPPs and whether these are adequate to meet the future costs of delivering services.

An important determinant of Tasmania's fiscal situation into the future will be the extent to which the current Horizontal Fiscal Equalisation (HFE) arrangements for the distribution of GST revenue are maintained. Three assumptions are adopted:

- Tasmania's GST relativity remains constant after 2007-08;
- Tasmania's GST relativity declines linearly by 10 per cent over the 34 years from 2007-08 to 2042-42;

- Tasmania's GST relativity increases linearly by 10 per cent over the 34 years from 2007-08 to 2042-42.

**Table 1 – Scenarios presented**

| Scenario | Population | Participation rates | Real income effect | Excess expenditure growth | SPPs | GST relativity |
|---|---|---|---|---|---|---|
| 1 | Series 28 | Mid case | GSP | None | Grow with GDP | Constant |
| 2 | Mid Series | Mid case | GSP | None | Grow with GDP | Constant |
| 3 | Series 28 | Low case | GSP | None | Grow with GDP | Constant |
| 4 | Series 28 | High case | GSP | None | Grow with GDP | Constant |
| 5 | Series 28 | Mid case | GDP | None | Grow with GDP | Constant |
| 6 | Series 28 | Mid case | GSP | 0.5% | Grow with GDP | Constant |
| 7 | Series 28 | Mid case | GSP | 1% | Grow with GDP | Constant |
| 8 | Series 28 | Mid case | GSP | None | Constant in real per capita terms | Constant |
| 9 | Series 28 | Mid case | GSP | None | Grow with GDP | Falls over time |
| 10 | Series 28 | Mid case | GSP | None | Grow with GDP | Rises over time |

Rather than present combinations of all the possible variations in assumptions discussed above, Tasmanian Treasury has developed 10 scenarios, as described in Table 1, that allow the isolation of the impacts of different assumptions by varying them one at a time. Tasmanian Treasury does not have a view on which of these scenarios is more plausible than any others. Scenario 1 has been adopted as a base case against which the other scenarios are compared in order to examine the impact of changes in assumptions.

**Economic Results: Scenarios 1 – 4**

Scenarios 1 to 4 examine the economic and financial impacts of alternative population and participation rate assumptions.

Charts 7 and 8 show the total Tasmanian and Australian participation rates under the four scenarios. In all cases, the participation rates decline significantly due to the increasing proportion of those of working age in the older age classes. The modelling finds that, in each scenario, the gap between the Tasmanian and national participation rate increases. These results are summarised in Table 2.

In Scenarios 1 and 2, as shown in Chart 7, the national participation rates are identical as the national population size and structure are the same in the Series 28 and the Mid Series.

**Chart 7: Participation rates, Tasmania and Australia, Scenarios 1 and 2 (per cent)**

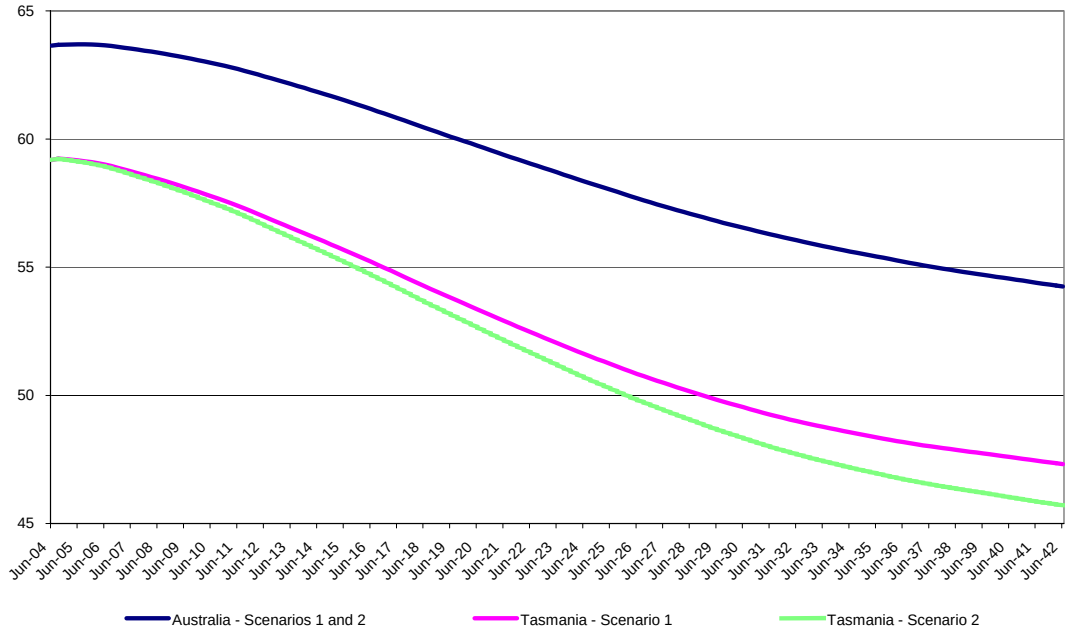



**Chart 8: Participation rates, Tasmania and Australia, Scenarios 3 and 4 (per cent)**

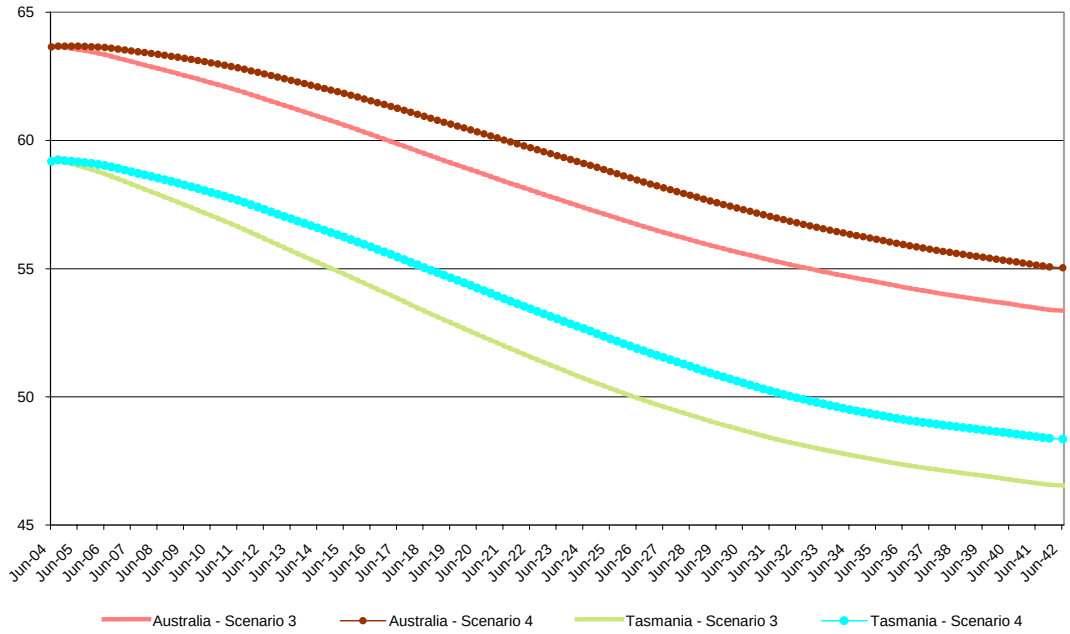


**Table 2: Projected Tasmanian and Australian participation rates at June 2042**

| Scenario | Australia (%) | Tasmania (%) | Difference (pp) | Decline in Tas. rate from 2004 (pp) |
|---|---|---|---|---|
| 1 | 54.3 | 47.3 | 7.0 | 11.9 |
| 2 | 54.3 | 45.7 | 8.6 | 13.5 |
| 3 | 53.3 | 46.5 | 6.8 | 12.7 |
| 4 | 55.0 | 48.3 | 6.7 | 10.9 |

Tasmania's seasonally adjusted participation rate in the June quarter 2004 was 59.2 per cent. The modelling produces participation rates by 2042 that are more than 10 percentage points below the current rate, even when some increases in age specific participation rates are allowed for. The modelling does not take into account the greater preference of those in older age classes for part-time work, which would further constrain total labour supply.

Charts 9 and 10 show projected annual GDP and Tasmanian GSP per capita over the four scenarios. The charts show a continuing gap between national and Tasmanian income per capita over time in all scenarios. The charts also show that income per capita is higher in Tasmania under the scenario that projects a slower rate of population ageing (Scenario 1) and where the age-specific participation rates are highest (Scenario 4).

**Chart 9: Australian GDP and Tasmanian real GSP per capita: Scenarios 1 and 2 ($'000)**

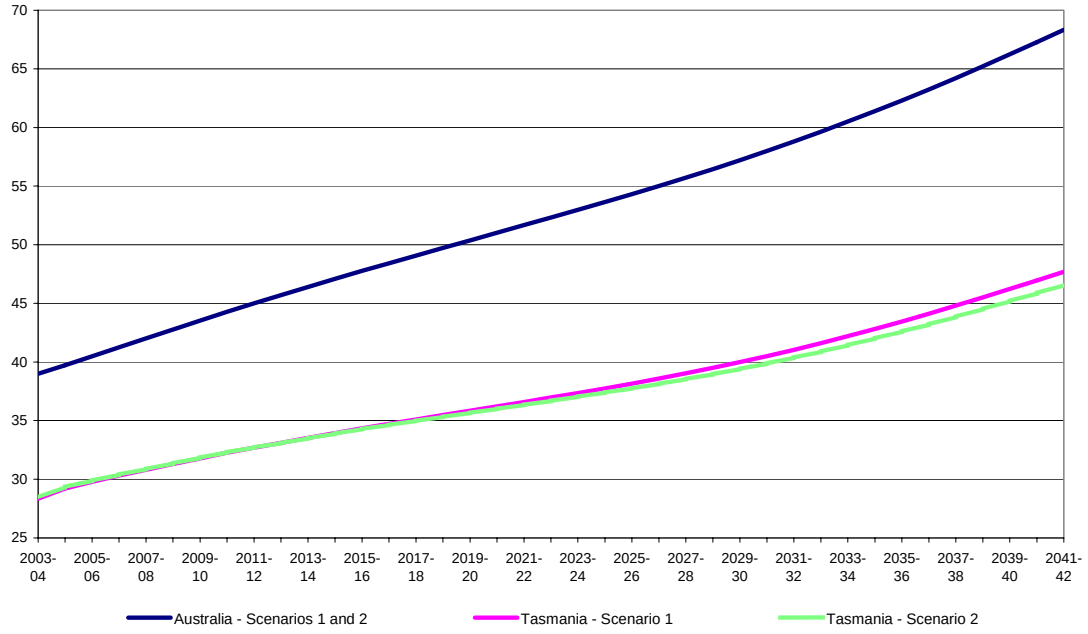


**Chart 10: Australian GDP and Tasmanian real GSP per capita: Scenarios 3 and 4 ($'000)**

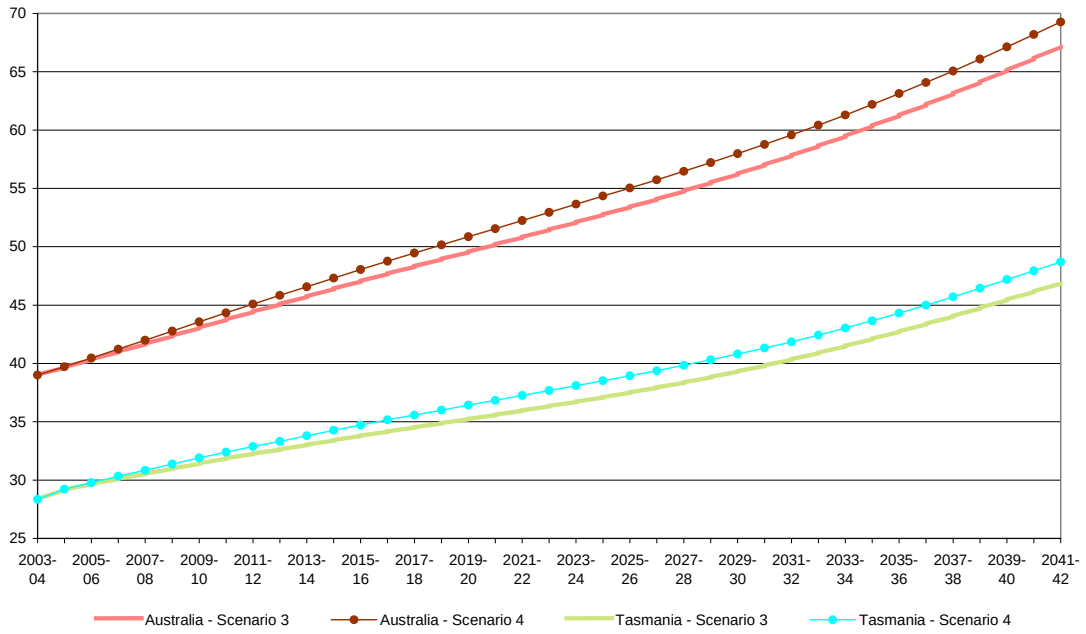



Table 3 compares the annual average rates of GDP and GSP per capita growth under the two scenarios over the projection period. In all cases, the average growth rate is projected to be less than the productivity growth rate assumed (1.75 per cent), as a result of declining labour supply relative to the total population.

**Table 3: Projected average annual real GSP/GDP per capita Tasmania and Australia (per cent)**

| | Tasmania | Australia |
|---|---|---|
| Scenario 1 | 1.38 | 1.49 |
| Scenario 2 | 1.31 | 1.49 |
| Scenario 3 | 1.33 | 1.44 |
| Scenario 4 | 1.43 | 1.43 |

The estimated impact of the greater decline in participation rates in Tasmania is shown in the slower growth in real income per head. However, real per capita incomes in Tasmania are still projected to be between 64 and 72 per cent higher in 2042 than in 2004.

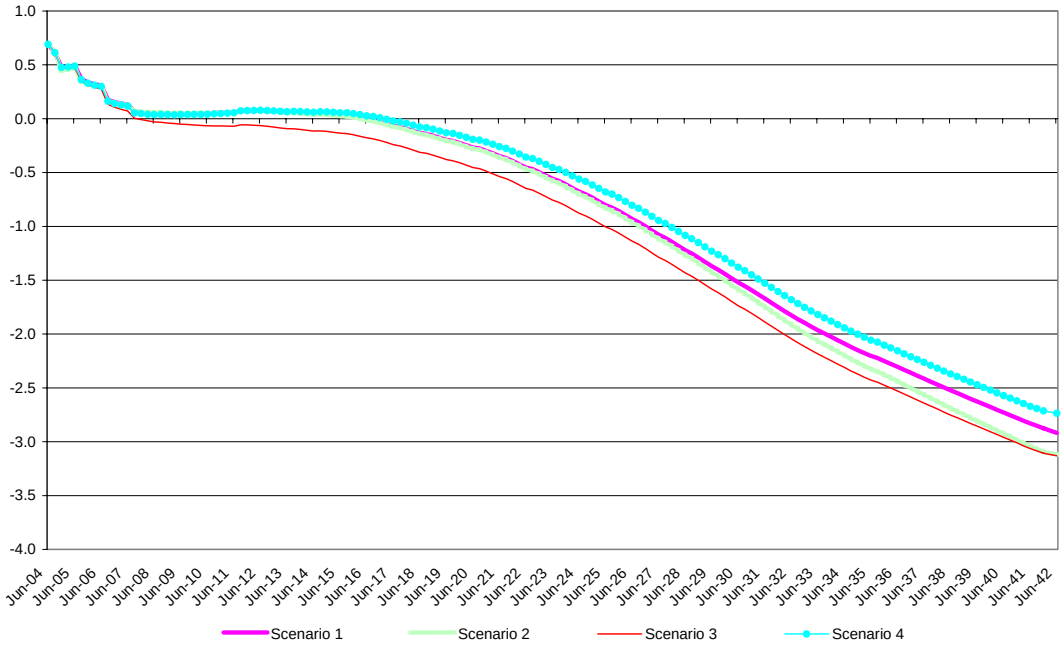
The economic results are highly sensitive to the assumed rate of annual productivity growth. Should Tasmania or Australia experience productivity growth that is less than the assumed rate of 1.75 per cent over the next four decades, the model would generate lower levels of real income. For example, if Scenario 1 is altered so that productivity in Tasmania is assumed to grow at 1.25 per cent per year, Tasmania's real GSP per capita is projected to grow at an average annual rate of only 0.88 per cent, or a total of 39 per cent over the 38-year projection period.

The remaining scenarios do not produce different levels of employment and output to Scenario 1 as the economic assumptions are identical. While the different assumptions do have some effects on the composition of GDP and GSP, these are relatively minor and tend to reinforce the effects of the different assumptions.

**Fiscal Results - varying the economic assumptions (Scenarios 1 – 4).**

Chart 11 shows the fiscal results for Scenarios 1 to 4 in terms of the primary balance as a proportion of GSP.

**Chart 11: Tasmanian underlying primary balance, Scenarios 1 – 4 (per cent of GSP)**



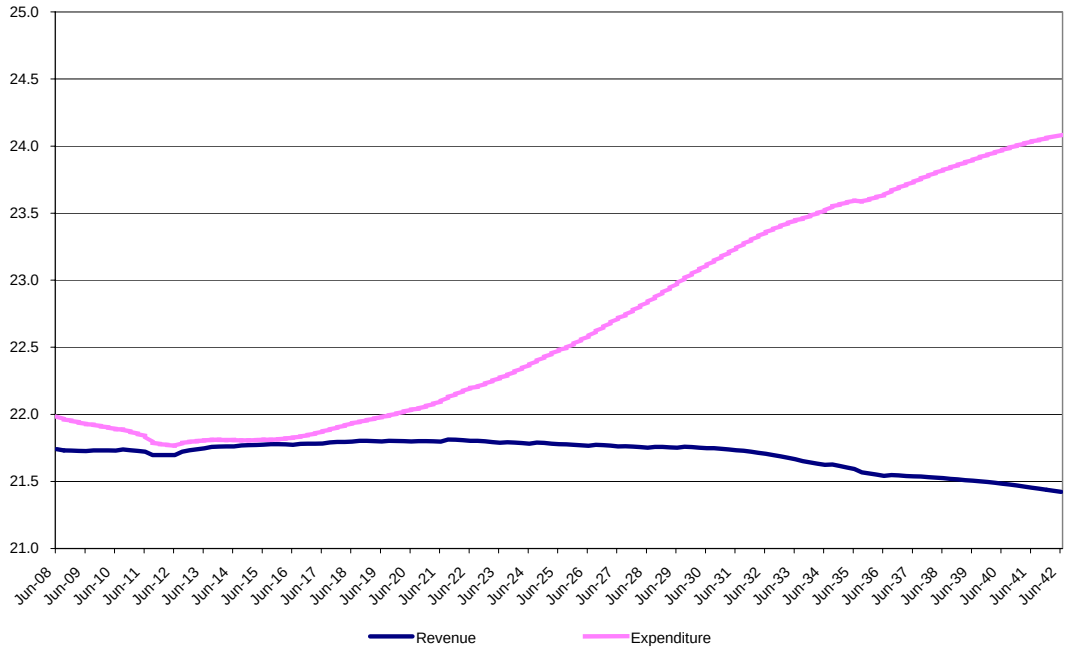

While the four scenarios produce different results, the path of the primary balance relative to GSP is very similar for the four scenarios with the modelling generating primary deficits of between 2.5 and 3.5 per cent of GSP by June 2042.

Scenarios 1, 2 and 4 produce primary deficits within 13 years.[4] Scenario 3 produces a deficit within three years because of the effect on revenue of the relatively lower economic growth due to lower participation rates. While Scenario 2 initially tracks Scenarios 1 and 4, the primary balance deteriorates more rapidly under Scenario 2 as the impact of differences in the projected age structure between Series 28 and the Mid Series take effect.

More explanation of the projected trend in the primary balance under Scenario 1 is provided in Chart 12, which shows projected revenue and expenditure (ignoring interest) as a proportion of GSP.

[4] The staggered deterioration in the primary balance up to June 2008 is based on the impact of medium-term estimates of changes in Tasmania's GST relativity, following the most recent Commonwealth Grants Commission review of relativities.

**Chart 12: Tasmanian revenue and expenditure (Scenario 1, per cent of GSP)**



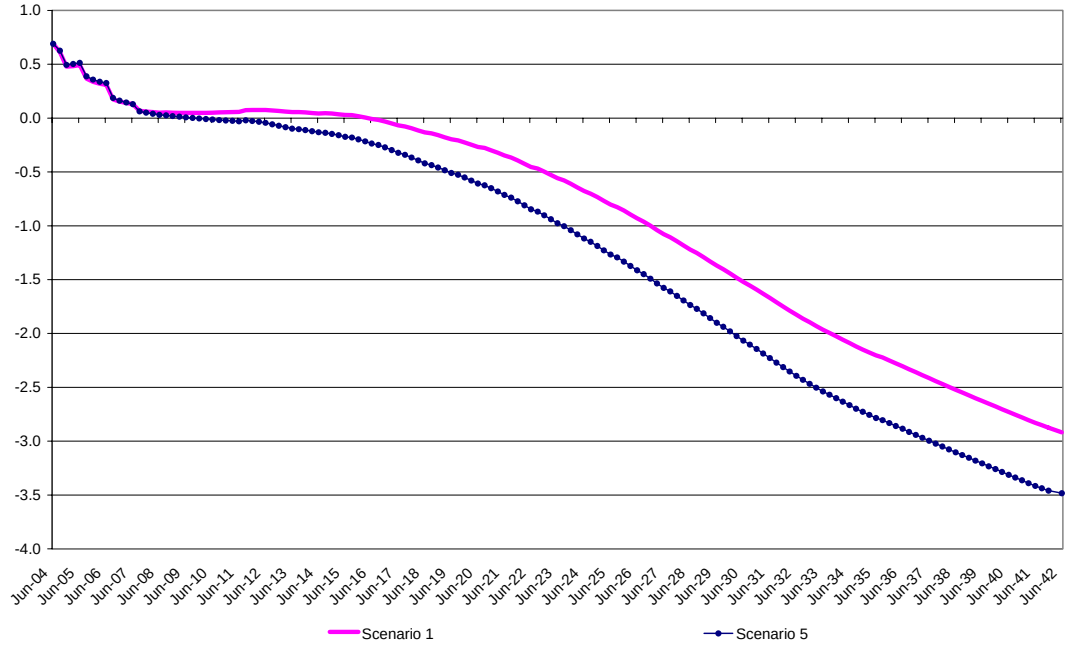

Revenue is projected to rise slightly as a proportion of GSP after June 2008 before flattening and declining. The initial rise is driven by the assumption that SPPs grow at the same rate as GDP, which is projected to grow faster than GSP. The eventual decline in revenue as a proportion of GSP is driven by the projected decline in the total pool of GST revenue relative to GDP as ageing causes a shift in the composition of consumption towards health services which are exempt from the GST.

The growth in expenditure relative to GSP is driven largely by health expenditure which is projected to grow from approximately 4.9 per cent of GSP in 2003-04 to 7.9 per cent by June 2042. The growth in health expenditure is initially offset by declining education expenditure (as a share of GSP). However, over time, the impact of the relative decline of the number persons in age groups with high education attendance rates is far outweighed by the increase in demand for health services driven by the growth in the older age groups.

**Fiscal Results - varying the real income effect assumption (Scenarios 1 and 5 compared)**

Scenario 5 produces different fiscal outcomes from those in Scenario 1 because of the different rate of growth in expenditure arising from the differences in the assumed real income effect. Chart 13 shows the model's estimates of the Tasmanian underlying primary balance as a proportion of GSP for Scenarios 1 and 5.

**Chart 13: Tasmanian underlying primary balance: Scenarios 1 and 5 (per cent of GSP)**




The chart demonstrates the importance of the assumptions made concerning the real income effect. If the demand for Tasmanian Government services is driven by the growth in GDP per capita (Scenario 1), the State's primary balance deteriorates more rapidly than if demand is driven by growth in Tasmanian GSP per capita (Scenario 5). This is because GDP is projected to grow more rapidly than Tasmania's GSP and also because Commonwealth payments no longer grow faster than the demand for services in Tasmania as they do for a period under Scenario 1.

**Fiscal Results – varying the excess expenditure growth assumption (Scenarios 1, 6 and 7 compared)**

Scenarios 6 and 7 generate different fiscal outcomes due to differences in the rate of expenditure growth, this time as a result of differences in the assumed rates of excess expenditure growth. Chart 14 compares the Tasmanian underlying primary balance as a proportion of GSP between Scenarios 1 (no excess expenditure growth), Scenario 6 (annual excess expenditure growth of 0.5 per cent) and Scenario 7 (annual excess expenditure growth of 1.0 per cent).

**Chart 14: Tasmanian underlying primary balance: Scenarios 1, 6 and 7 (per cent of GSP)**

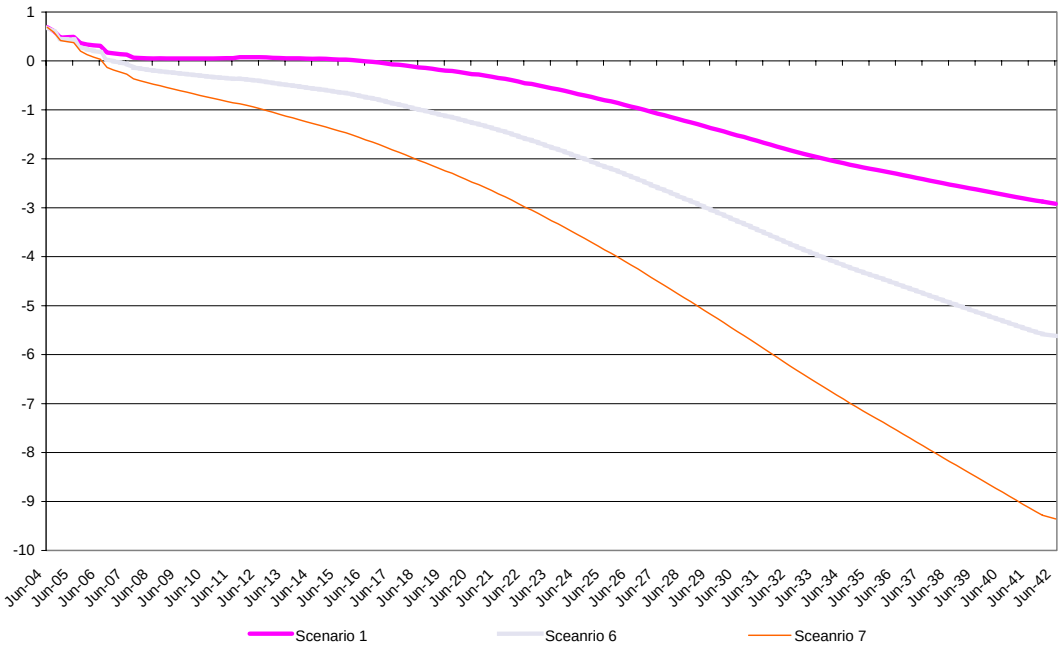



Chart 14 shows the very significant effects that small variations in the assumed annual rate of excess expenditure growth in key expenditure areas have on the projected fiscal outcomes.

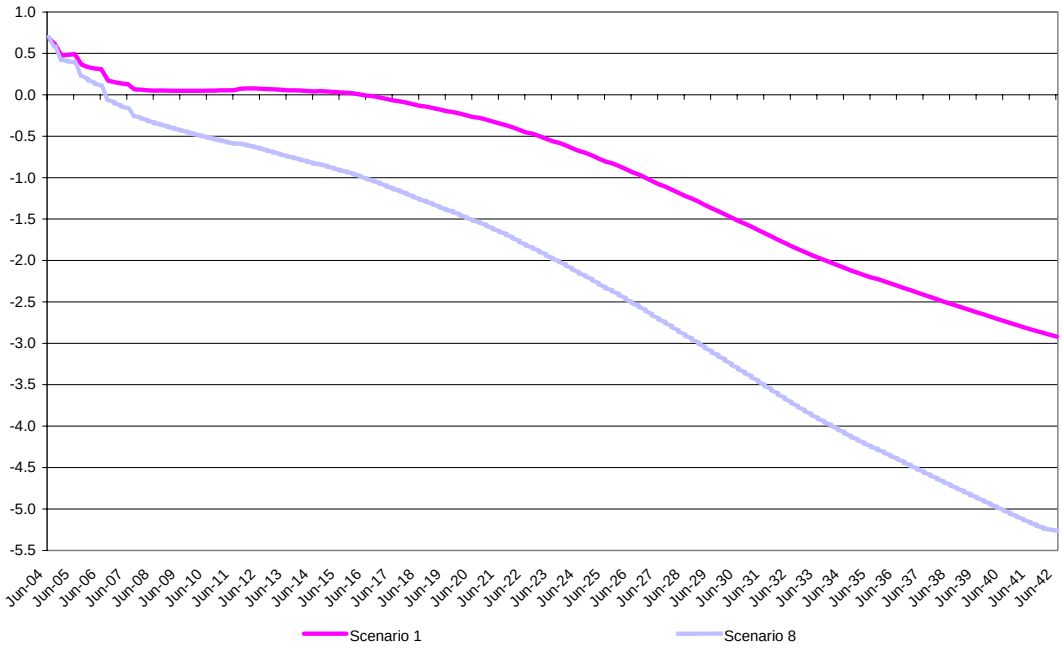
In the Tasmanian context, the rate of excess expenditure growth has a major influence on the timing and magnitude of the projected structural gap between revenue and expenditure.

This highlights the importance of future research to understand the sources and magnitude of excess expenditure growth effects in the main areas of government expenditure. This also demonstrates the importance of securing ongoing productivity improvements in the delivery of government services and ensuring that the allocation of roles and responsibilities between different levels of government encourage the efficient delivery of government services.

### Fiscal Results - varying the SPP growth assumption (Scenarios 1 and 8 compared)

Scenario 8 produces different fiscal outcomes for Tasmania because of the assumed differences in the growth of SPPs paid to the Tasmanian Government. Chart 15 shows the Tasmanian underlying primary balance as a proportion of GSP for Scenario 1 (where the total pool of SPPs grows with GDP) and Scenario 8 (where the pool of SPPs remains constant in real per capita terms).

**Chart 15: Tasmanian underlying primary balance: Scenarios 1 and 8 (per cent of GSP)**

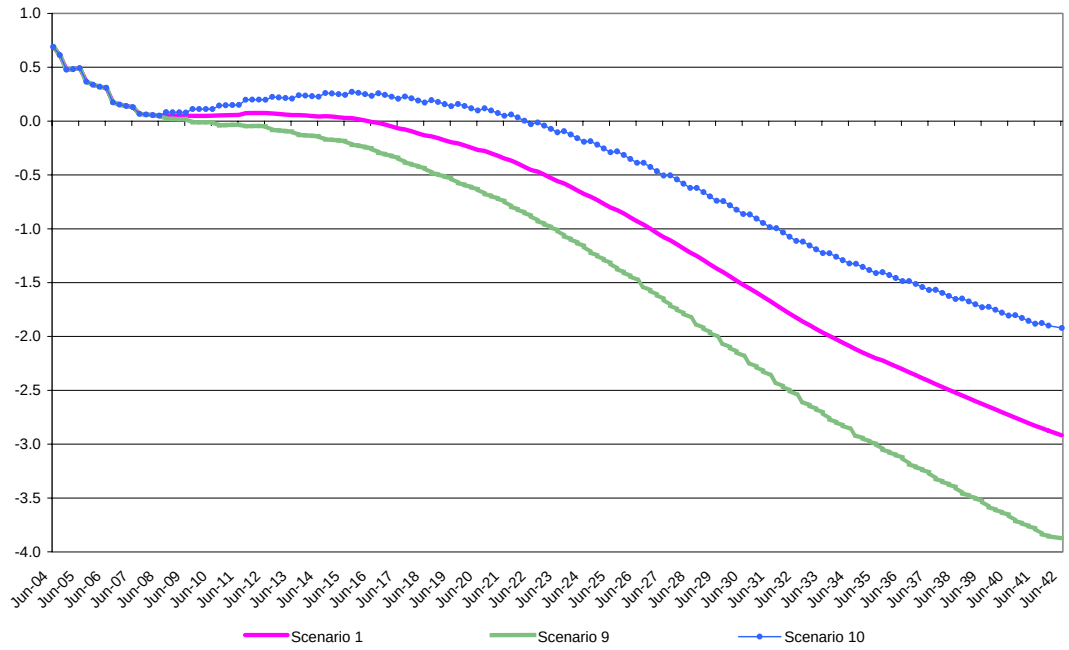



This modelling suggests that the indexation arrangements for SPPs may be important in influencing the fiscal outcome for State and Territory governments over time.

**Fiscal Results - varying the GST relativity assumption (Scenarios 1, 9 and 10 compared)**

Scenarios 9 and 10 produce different fiscal results to Scenario 1 because of the different assumptions concerning the Tasmania's GST relativity. Chart 16 shows the Tasmanian underlying primary balance as a proportion of GSP for Scenario 1 (where the Tasmanian GST relativity remains constant after 2007-08), Scenario 9 (where the Tasmanian GST relativity declines by 10 per cent between 2007-08 and 2041-42) and Scenario 10 (where the Tasmanian GST relativity increases by 10 per cent between 2007-08 and 2041-42).

**Chart 16: Tasmanian underlying primary balance: Scenarios 1, 9 and 10 (per cent of GSP)**




Relative to Scenario 1, the primary deficit by 2042 is greater by 1.0 per cent of GSP in Scenario 9 and lower by a similar amount in Scenario 10. These results suggest that the Tasmanian fiscal position in future decades may be sensitive to relatively small changes in Tasmania's GST relativity.

## KEY ISSUES

The challenges associated with an ageing population, will be felt across Australia, albeit at different rates and to different degrees. Given that Tasmania is projected to age faster than any other state or territory, the demographic pressures will be felt first in Tasmania.

Three broad issues are the focus for addressing the challenges associated with population ageing. These issues are:

- Improving performance in terms of the underlying drivers of economic growth, namely population, productivity and participation;
- Ensuring sufficient resources to provide core government services and achieving an appropriate balance between State and Commonwealth funding for these services; and
- Ensuring more effective, equitable and sustainable delivery of Government services across the three levels of government.

### Influencing Population Size and Structure

In the discussion paper *Tasmania's Population 2003*, Tasmanian Treasury examined the main influences on the State's population growth and demographic structure. It

concluded that there is little scope for State Government policy to slow the rate of population ageing through influencing the fertility rate.

Tasmanian Treasury concluded that economic factors were a strong influence on the level of interstate migration to and from Tasmania. During the second half of the 1990s Tasmania experienced net outward migration of over 2,000 people per year, including the loss of large numbers of people in the younger age groups. In 2002-03, Tasmanian had four successive quarters of net inward migration for the first time since September 1991.

The main driver of reduced outward migration and increased inward migration was the robust employment opportunities in Tasmania relative to other Australian states. A key policy challenge is to continue growing the economy and provide employment opportunities, particularly for younger people.

There is also scope to influence population size and structure through international migration. International migration has historically made up a small part of Tasmania's population growth. However, there is potential to increase the State's intake of overseas skilled and business migrants through continued cooperation with the Commonwealth, initiatives such as promoting a tolerant multicultural society and encouraging more international students to Tasmania.

**Increasing productivity**

Tasmania's rate of productivity growth will be an important determinant of future living standards and the sustainability of Government services. The State's productivity growth over the 1990s did not match the average growth of 2.2 per cent for Australia as a whole. The challenge in the decades to come will be to achieve productivity growth at least equal to the national average.

There are three sources of productivity growth:

- Improvements in labour skills through education and training;
- Higher levels of capital per worker – capital deepening; and
- Combining capital and labour more efficiently – multi-factor productivity.

Higher productivity will therefore be achieved through a combination of policies to improve education and training to encourage investment and to promote better workplace practices, better management and more efficient resource allocation across industries.

Achieving high levels of productivity growth over the next forty years will require the policy attention of both State and Commonwealth Governments. The Commonwealth has responsibility for national macroeconomic management and a range of taxation and regulatory arrangements that can affect productivity, including the regulation of market conduct by business and international trade policy.

State governments also have considerable scope for improving productivity growth through a number of policy levers, including:

- Contributing to a stable macroeconomic environment through sound financial management;

- Improving workforce skills by providing and promoting quality education and training;
- Providing an attractive environment for investment;
- Implementing industry development programs to encourage particular industries and business practices;
- Encouraging competition through an ongoing process of regulatory reform;
- Striving for higher productivity in the State Government sector, which constitutes some 16 per cent of employment.

A number of Government initiatives already underway will make an important contribution to productivity growth in the State. Many of these are outlined in the Government's Industry Development Plan.[5]

## An Ageing Population and the Labour Market

The overall rate of labour force participation in Tasmania is likely to decline as the population ages if age specific participation rates remain at their current levels. A range of factors influences an individual's decision on whether to remain in or enter the workforce. In the case of older people, health is often a major constraint on continued participation. The likelihood of finding work is also important to those either outside the labour force or who have become unemployed. Personal satisfaction gained from working is also a key factor, particularly for people considering retirement or withdrawing from the labour market for family reasons.

The upward trend in national participation among older age groups may continue to some extent without government intervention. Better health outcomes, higher wages and a range of other possible changes may encourage participation in the labour force. However, there is a need for State and Commonwealth Governments to improve opportunities and incentives for Australians aged 45 years and over to continue in or re-enter paid employment. These might include financial incentives embodied in taxation and retirement income systems, policies aimed at reducing age-based discrimination and measures to encourage employers to retain and employ older workers.

### *Mature Age Workers and Aged-based Discrimination*

Age discrimination in employment is prohibited by law under the Tasmanian *Anti-Discrimination Act 1988* (with certain exemptions).

Despite the legislative requirements in Tasmania and other jurisdictions, the available evidence suggests that employment discrimination on the basis of age is widespread around Australia. Survey and focus group research in Tasmania undertaken by the Office of the State Service Commissioner has found a common view amongst older workers, job seekers and employment agencies that while most employers were

[5] The *Tasmanian Government Industry Development Plan* can be viewed or downloaded at http://www.development.tas.gov.au/publications/IDP2003.pdf

careful not to discriminate overtly, employment decisions were often influenced by a person's age[6].

This appears to be the result of relatively the common attitude amongst employers that older workers are less productive, have higher rates of workplace injury and absence due to ill-health and are less flexible – particularly in terms of developing new skills such as using information technology. The State Service Commissioner's research found that these attitudes are misguided. Employees aged 45 and over have fewer accidents, lower rates of absenteeism and are often more productive than younger workers.

According to the Human Rights and Equal Opportunity Commission (HREOC), recruitment is the main area where older workers experience discrimination, although, where restructuring or downsizing is concerned, it is often older employees who are targeted for redundancies.[7] Forced retirement and/or the inability to find employment imposes major social and economic disadvantages in many older persons and results in a loss of skills and capacity from the labour market.

While it is true that health status generally deteriorates with age, there is now a view that as people live longer, they experience a greater number of years disability-free.[8] This suggests greater scope for older persons to work productively for longer than previous generations. Furthermore, there are a number of benefits associated with employing older workers, including lower turnover, less absenteeism, tendency towards loyalty, strong work ethic and reliability and corporate memory.[9]

There are also opportunities for Commonwealth and State Governments to act as 'model employers' in terms of practices to retain older workers. In the case of the public sector, this is more than a matter of setting an example for the private sector. The age profile of many public sector occupations is such that retaining greater numbers of older workers will be essential to the continued provision of quality government services, particularly where demand pressures are strong such as health and aged care. One important initiative already undertaken by the Tasmanian Government is the abolition of compulsory retirement at age 65 for State Service employees.

*Incentives to labour force participation*

Tasmania's participation rates have historically been lower than those for Australia as a whole, and the gap has grown wider over time. Tasmania's lower age specific participation rates may be explained by a range of factors. In particular, the relative financial benefits of labour force participation in Tasmania are less than for Australia as a whole due to the lower than average wages in the State and the cost of living has been lower historically. Tasmanian average weekly ordinary time earnings (AWOTE),

[6] Tasmanian Office of the State Service Commissioner (2001) *Employment Issues Facing Mature-Aged Workers and Jobseekers in Tasmania*, p30-31

[7] Human Rights and Equal Opportunity Commission (2000) *Age Matters: A Report on Age Discrimination*

[8] DHAC (1999) *Compression of Morbidity: Workshop Papers*, Occasional Paper Series No. 4, Commonwealth of Australia: Canberra, p1

[9] Research cited in Commonwealth of Australia (1999) *Employment for Mature Age Workers*, Issues Paper, p34

as a percentage of Australian AWOTE, have declined over the past twenty years[10] and the cost of housing, a major factor in living costs, continues to be more affordable in the State relative to the national average.

The interaction of the taxation and social security systems can serve as a powerful disincentive to participate in the labour market or for those in employment to seek to work additional hours. Recent debate has focused on the high effective marginal tax rates created by the loss of welfare and family tax benefits and the increases in tax rates as individuals move up the income scale. Similar disincentives exist for individuals eligible for payments such as the Disability Support Pension and the Aged Pension.

The ability to access superannuation benefits well before the traditional retirement age is likely to provide some employees with an incentive to retire early. Incentives for early retirement are particularly strong in certain defined benefits schemes where benefits are maximised at age 55. Current superannuation arrangements also allow people to take their benefit in a lump sum which may encourage people to retire early, spend all or part of that lump sum and then rely on the aged pension. However, as life expectancies increase and people become more aware of the standard of living their superannuation savings are likely to provide in retirement, individuals may defer their retirement in order to increase their savings to a more adequate level. This effect is also likely to depend on the future investment performance of superannuation funds.[11]

The fact that women are less likely to have adequate superannuation than men of a similar age may help explain the growth in female labour market participation in the older age groups.

*Workforce and skills shortages in Tasmania*

Tasmania's relatively low participation rates and low average weekly earnings may reflect low skill levels or a mismatch of skills with current employment opportunities. Statistics show comparatively low levels of (formal) educational attainment among the Tasmanian population. However, they also show that the proportion of the population participating in structured and work-related training courses was the highest of all states and territories.[12]

*Lifelong education and training*

Mismatches between skills and employment opportunities may be associated with a long-term decline in particular industries, with former employees failing to retrain and becoming unemployed or withdrawing from the labour market. Direct evidence of this is largely anecdotal, however, the decline of employment in a number of industries that traditionally employed substantial numbers of male manual workers on a full-time basis, e.g., manufacturing, mining and utilities, may help explain the long-term decline in male participation rates, particularly in older age groups.[13]

[10] ABS, *Labour Force Detail*, Cat No. 6291.0.55.001
[11] Patrickson, M (2002) 'Early Retirement: Choosing to Stay or Go' (International Federation of Scholarly Associations of Management Conference, Gold Coast)
[12] ABS *Education and Training Experience*, Cat No. 6278.0
[13] ABS *Employed Persons by State and Industry*, Cat No. 6291.0.55.001

In order to facilitate continued economic growth through improving productivity the population ages, there must be an emphasis on ensuring a highly skilled and actively learning workforce. Lifelong learning is increasingly important for mature age workers to adapt to changing labour market needs, have the choice to work later in life and remain active.[14] There must be focused effort on the accessibility and take up of tertiary education and vocational education and training throughout the life cycle. The Tasmanian Government has implemented a number of strategies to designed to facilitate lifelong learning under its post-compulsory education and training strategy *Tasmania: A State of Learning.*

*Retaining Critical Mass and Workforce Issues*

Tasmania faces some specific challenges relating to the geographic dispersal of the population and associated rural/regional employment opportunities, lack of some professional training courses in the State (e.g. radiography, dentistry, occupational therapy) and lack of critical mass.

Tasmania's population is dispersed across the State, much of it in small rural areas. The existence of many small facilities makes economies of scale difficult to achieve and many services can only be delivered from a small number of sites due to their specialisation and infrastructure requirements.

## Health and Aged Care

*Improving cost effectiveness*

All Australian Governments face health issues, including the ageing of the population and associated growth in demand, the growing cost of new health technologies, the increasing cost of recruiting and retaining specialist staff, and the need to maintain the highest standards of patient care.

The Tasmanian Government agrees with the Commission's view that predicting future health care costs in this environment is a complex process with major uncertainties.

The task of predicting future health care costs is made more difficult by the different responsibilities each level of government carries for parts of the primary, secondary and acute care policy, funding, and service delivery system across both the public and private health care arena.

It is likely that increasing complexity, improved clinical practices, better technology and drugs, growing consumer expectations, and service provider responses will be influential demand drivers, particularly in the health sector. Aged peoples inappropriate utilisation of health services because of an inadequate supply of aged care services will place further budgetary pressure on State Governments.

The Commonwealth's supply of aged care services is determined by a "benchmark" based on the population aged 70 years and older. Local demand issues are considered in the allocation of aged care services but this is within the overall supply determined

[14] Commonwealth of Australia (1999) *Employment for Mature Age Workers*, Issues Paper, p22-23

by the "benchmark". There is no process to match provision with the overall demand for services.

Demand for aged care services will increase at a significantly faster rate than the supply of aged care services allocated on the current benchmark of people aged 70 years and older. The anticipated increase in demand is based on the fact that the number of people aged 85 years and over is projected to increase at a faster rate than the population 70 years and over. Peoples' likelihood of using aged care services increases significantly with age. Typically, people now entering residential aged care services in Tasmania are aged mid eighties or older. Failure in aged care service provision will push unmet need into the health sector at a substantially higher cost.

The barriers to effective policy development, planning and service delivery across the 'aged-acute care interface' created by split funding and split responsibilities must be overcome if high standard, affordable services are to be provided to our ageing population. The Commission could usefully examine the potential efficiencies and improved standard of care to be gained from better planned and integrated service delivery systems.

The Tasmanian Government is working on a range of responses to this issue within the existing intergovernmental relations framework. This work has included national models to inform local needs; participation in the Care of Older Australians work program; and, developing a Memorandum of Understanding with the Division of General Practice to explore ways of better linking GPs with patient management.

The Tasmanian Government, the Commonwealth Government and the Local Government Association of Tasmania have also agreed to develop a Tri-Partite Agreement on Population Ageing with the objective to deliver improved services from all spheres of government for the care of older Tasmanians; and to improve living and community environments for older people living in Tasmania.

The desired outcomes of this Agreement include:

Development and delivery of services will be streamlined;
Improved collaboration in implementing standards for aged care facilities;
Enhanced provision of aged care facilities across levels of government;
Encouraging more private investment in aged care services;
Better communication amongst all stakeholders leading to improved planning and development; and,
Greater access to information.

*Health care for the 65 plus population*

Given the projected demographic trends, the higher incidence of morbidity and disability among older persons, Tasmania will experience increasing demand on health and aged care services.

ABS National Health Survey data indicates that people aged 65 years and over have:

- higher rates of reporting a recent illness or recurrent episode of a long-term illness;

- higher rates of undertaking a health-related action such as visiting a doctor or taking medication;
- higher prevalence of long-term conditions, the most commonly reported long-term health conditions relating to vision and hearing;
- higher medication usage rates, the most commonly used medications being for heart problems and blood pressure.

Among the main causes of disease burden in Tasmania's older population are cardiovascular disease, cancer, chronic bronchitis and emphysema, diabetes, dementia, arthritis, and injury due to falls.

However, focusing on the 'aged' or 'population ageing' as comprising a single grouping of people aged 65 years and older is to overlook the policy opportunities available to governments in responding to some of the challenges of an ageing population.

An individual's age is not the sole determining factor in assessing need but some targeted research into the healthcare needs and morbidities of cohorts *within* the 65 plus aged group promises some useful dividends in policy responses aimed at maintaining more years of healthy living, and reducing the contingent costs of health care on all levels of government.

Research led changes in health care policies, along with movements in community perceptions and expectations could generate significantly improved health outcomes and reduce health care costs in the population aged between 65 and 75 years. Similarly, advancements in treatments together with increased self-management of chronic conditions is likely to lesson the health cost burden in the 75 years and older aged group.

Cost effective improvements in primary care, health promotion programs and chronic disease management are possible and can achieve improved health outcomes.

Tasmania's stable population and significantly ageing population provides an excellent opportunity for collaborative policy relevant research on healthy ageing that can provide the essential evidence base for policy and program development, which can then be used elsewhere in Australia. This is an immediate challenge because any delay will inevitably mean later, more inefficient and costly policy intervention.

*Health workforce issues*

Workforce shortages are already a major issue in providing health and aged care services in Tasmania and should be a significant focus in relation to population ageing.

The Tasmanian Department of Health and Human Services conducted a survey in 2001 that showed 44.6 per cent of registered and enrolled nurses were aged over 45 years. Ten per cent were aged over 55 and therefore likely to retire at some stage during the next ten years. The medical labour force also appears to be ageing. In

1996, the average age of medical practitioners nationally and in Tasmania was around 45 years[15].

Labour and skill shortages in the health sector are key issues currently facing Tasmania and other jurisdictions. Service demand will grow into the future as larger numbers of older people require health and aged care services.

While it can be argued that other States and Territories are experiencing similar workforce shortages due to population ageing, it is recognised that retaining graduates in Tasmania is harder because, upon graduation, many young people choose to relocate to mainland Australia or overseas[16].

In addition, for a number of health professions, Tasmania must source graduates from other states owing to a lack of training courses in the State. These health professions include dentistry, selected medical specialties, occupational therapy and various other allied health professions.

Competition for a single pool of professionals and other skilled workers is also high among different areas of the health and aged care sectors within the State. As a consequence, those areas without the prestige and/or capacity to offer remuneration packages needed – for example, aged care services – are facing a double disadvantage.

The Tasmanian Government is devoting considerable effort and resources to implement a range of strategies to address health workforce shortages. These include; shifting to state-wide service provision through a combination of dedicated and general service centres; the establishment of centres of excellence; negotiating optimal salary payments for many public (health and non-health) sector and community sector workers ; and, working closely with other States and Territories at the highest level to address the critical issue of workforce shortages nationally.

**Commonwealth-State Financial Relations**

The challenges that Tasmania's ageing population will present over the coming decades will require a concerted effort by all levels of government.

While strong economic performance and Tasmanian Government fiscal and other policy will help manage the projected fiscal pressures, the majority of State Government revenue is in the form of Commonwealth Government payments. These payments are currently subject to the principle of horizontal fiscal equalisation intended to assist those States, such as Tasmania, with less capacity to raise revenue and with greater expenditure needs per capita.

The modelling presented earlier in this submission assumes that the total SPP pool grows in line with GDP. The agreements governing most major SPPs include some

[15] Australian Institute of Health and Welfare (2003) *Medical Labour Force* (National Health Labour Force Series, No. 28)

[16] Richardson, R (2004) *The Tasmanian Hospital System: Reforms for the 21st Century* (report on a review into key issues for hospital services in Tasmania, p. 43.

provisions for demand and cost pressures. While such provisions offer a degree of short-term financial security for Tasmania there is no guarantee that these provisions will be adequate in the long-term. In fact, given that the Commonwealth will face very significant fiscal pressures of its own over the next forty years (although not necessarily of the magnitude projected in the *Intergenerational Report*), there can be no certainty that such an approach will continue at all.

There are compelling arguments as to why the Commonwealth should assist Tasmania in meeting the fiscal pressures it faces over the next forty years to a greater extent than is assumed in the base scenarios. These include the underlying principle of horizontal fiscal equalisation that all Australians should have access to a similar standard of government services, regardless of the jurisdiction in which they reside. It is important that this principle continues to be applied to the distribution of Commonwealth grants, particularly given the differences in projected rates of population ageing and consequent demand for services over the next four decades.

## The Contribution of Carers and Volunteers

Older people make valuable and significant contributions to the community and the economy through voluntary work, including in the aged care sector. In 1999–2000 the estimated worth of work performed by volunteers nationally through community service organisations was $1,269 million, and household members were providing six times the number of hours in welfare services than was provided by health and welfare workers.[17]

However, older people have a lower participation in volunteering than younger age groups. In 2000, 30.3 per cent of 65-74 year olds and 17.8 per cent of over 75 year olds undertook volunteering compared with 31 per cent of all people 18 or over.[18] The projected ageing of the population in Tasmania highlights the need for strategies to increase volunteering rates amongst older people if voluntary work is to maintain its substantial contribution to services in the community . It is important that the extent to which older people, particularly the ‘baby boomer’ generation, are likely to be willing and able to take on caring and volunteering roles, is explored and the likely impact assessed.

Older people also play an extremely important role in the provision of informal care, for example, to aged partners and grandchildren. In this respect, older people are both facilitating increased (predominantly female) labour force participation and supporting the health, aged care and community sectors. Informal care will become even more important as larger numbers of older people live at home, with high levels of dependency.

Tasmania has a higher proportion of people with a disability, including people with profound or severe disabilities, than the national average. Carers and volunteers are therefore particularly important for Tasmania. The ageing phenomenon will have implications for caring and volunteering in that the number of people who require care in the future can be expected to increase as the population ages with the number of

[17] Australian Institute of Health and Welfare (2002) *Australia’s Welfare*, p13–17
[18] ABS (2001) Voluntary Work Cat No.4441.0

older people making the transition from being care providers to requiring care themselves further adding to this need. Of the seventeen per cent of Tasmanians who report providing regular or ongoing special, unpaid care to people who are physically ill, mentally ill, disabled or elderly, 82 per cent were aged 45 years or more; with 45.5 per cent of all carers aged 60 or more and 13.6 per cent aged 75 or older.[19]

Recent research conducted by Anglicare Tasmania has highlighted the major financial, psychological and/or physical costs reported by carers of people with serious mental illness.[20] Support for carers will be an increasingly important consideration into the future as the population ages.

Of course, declining participation in the labour force may serve to increase the availability of volunteers and informal carers. However, there are a number of emerging trends that may limit the capacity of the informal care system, such as increases in the number of older people living alone, increasing rates of childlessness, geographic separation of older people and their children and the substantial increase in workforce participation of women.

**Reliance on Government benefits**

The end of 'full employment' in the late 1970s has had a particularly significant impact on the lives of those entering the labour market through the 1980s and 1990s. As a consequence, many Tasmanians have been unable to secure consistent paid employment, make significant contributions to superannuation or become home owners.

Currently 36 per cent of Tasmanians rely on Commonwealth pensions and benefits as their main source of income, compared to the national average of 28 per cent.[21] Of those Tasmanians aged over 65 years, 68 per cent are on the aged pension, slightly higher than the national average of 66 per cent.[22] Tasmanians can therefore be expected to continue to have a higher reliance on the aged pension and publicly provided services into the future.

The 1980s and 1990s have left many with lower than average retirement savings and incomes. Even some of those Tasmanians who have paid employment are not accruing superannuation. ABS figures indicate that 18,000 Tasmanian workers aged between 15 and 54 have no superannuation savings at all, including 7,700 who are aged over 35 years. An additional 13,200 workers have some superannuation but, at the time of the survey, were earning an income so low that no super contributions were being made.[23]

The combined impacts of unemployment, low average earnings and limited superannuation coverage mean that older Tasmanians will continue to rely largely on the public provision of services during their retirement.

[19] Tasmania Department of Health and Human Services, unpublished
[20] Cameron, P & Flanagan, J (2004) *Thin Ice: Living with Serious Mental Illness and Poverty in Tasmania*, Anglicare Tasmania, Hobart
[21] ABS (2001) *Australian Social Trends 2004* (Economic Resources), *Cat No. 4102.0*
[22] ABS (2002) *Australian Social Trends 2004* (Economic Resources), *Cat No. 4102.0*
[23] ABS (2000) *Survey of Employment Arrangements and Superannuation (Tasmania), Cat No. 6361.6*

## Changing nature of crime

Shifts in demographic trends may change the nature of crime and offending. For example, with an ageing population there may be a reduction in offences against the person, but an increase in the incidence and sophistication of e-crime and fraud through the use of technology. As the elderly are more likely to be at risk of exploitation and fraud, there is a greater likelihood that police services will need to respond to this issue in the future. Police resources will therefore need to accommodate the need for an increased emphasis on specialised technology and training will therefore be required. However, given the structural ageing of Tasmania's population, the incidence of crime generally associated with younger people may reduce and resulting in savings that offset the increased cost associated with emerging, ageing-related crime trends.

## Local Government

The modelling framework does not explore the challenges likely to face Local Government as a result of population ageing. However, there will be significant implications for this sector, especially in relation to infrastructure and planning. Local Governments will need to plan for and accommodate changing requirements in the style and location of housing, transport and other infrastructure. They will also be faced with increased demand for a range of community services used by older persons, together with a general increase in the quality of services demanded across all functions.[24]

[24] Australian Local Government Association *State of the Regions Report 2002–03*

## APPENDIX 1 – MODELLING FRAMEWORK

The modelling framework consists of seven component models:

- two demographic models – national and Tasmanian;
- two economic models – national and Tasmanian; and
- three budget models – national, Tasmanian and combined states and territories

The national and Tasmanian economic models use the demographic models and other key assumptions to project future values of major economic variables from historical values. For some variables the model adopts a 'top-down' approach with the Tasmanian growth rate derived as a share of the national growth rate. Similarly for the Tasmanian Budget, some projections are based directly on the Tasmanian economy and demographics while others are based in part on the Commonwealth and combined budgets. All projections are produced as quarterly values.

The following is a brief description of the main component models.

### The demographic models

The national and Tasmanian demographic models use population assumptions based on ABS population projections.

The outputs from the demographic model are used to calculate a range of age-related service usage indices based on current national rates of service usage by age, which are used, in part, to drive the growth of expenditure in certain portfolio areas.

Population projections are also used to calculate growth rates for a range of key economic variables.

*Demographic scenarios*

The results presented here use demographic assumptions based on the 2003 ABS Mid Series and 2003 ABS Series 28 projections which differ only in terms of their assumed level and composition of interstate migration for Tasmania.

Until the turnaround in Tasmania's net interstate migration that began around two years ago, the Mid Series, which assumes net outward interstate migration of 1,500 per year, appeared to be the more plausible of the two sets of population projections for Tasmania. Now that Tasmania has experienced net interstate migration of 1,895 in 2002-03 and 2,531 in the three quarters to March 2004 the Mid Series projection appears pessimistic. The base model scenario therefore uses Series 28, which assumes no net interstate migration, rather than the Mid Series. An alternative scenario is presented using the Mid Series.

The most recent ABS population projections use estimated population at June 2002 as their starting point. Data are now available on the population by age and sex at June 2003. To reflect this, Tasmanian Treasury has updated the starting values for both series 28 and the Mid Series. Under these updated series the Tasmanian population is

projected to follow a similar path but with a slightly higher starting point in June 2003 than the initial projected population for June 2003.

Compared to Tasmania's estimated population at March 2004 of around 482,000 persons, even the updated Series 28 appears pessimistic with a projected June 2004 population of only 479,000 persons.

Charts 1A, 2A and 3A show the projected total Tasmanian population, the Tasmanian and Australian median ages, and the Tasmanian and Australian dependency ratios under the adjusted series. These show that while Series 28 projects a larger and younger Tasmanian population over time than the Mid Series, under both projections Tasmania's population is projected to age at a faster rate than Australia as a whole.

**Chart 1A: Projected Tasmanian population ('000s)**

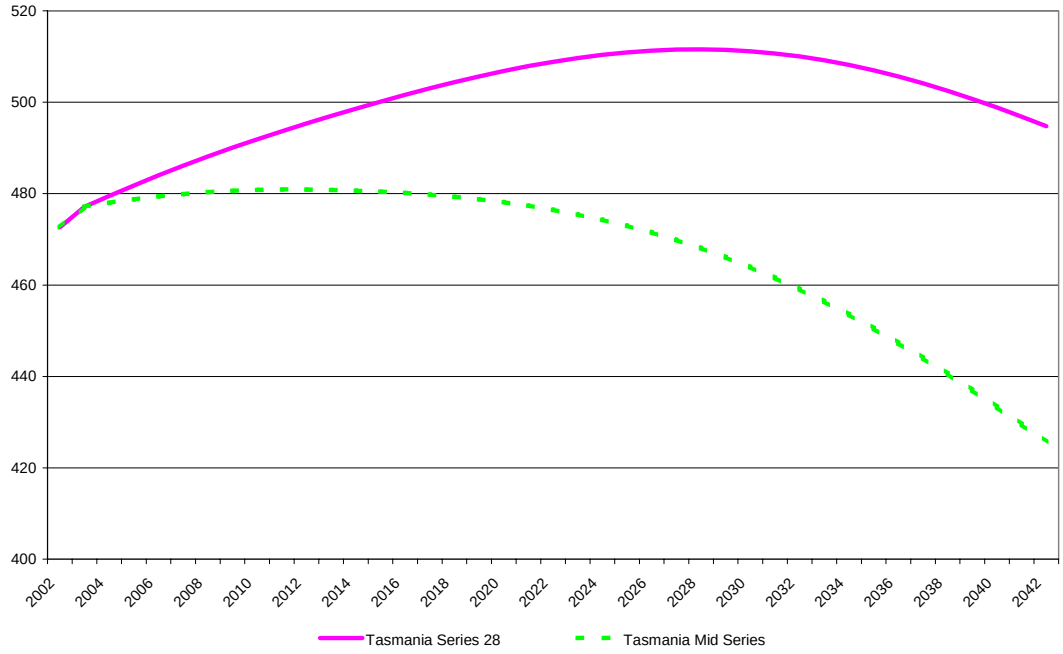


**Chart 2A: Tasmania and Australia projected median age (years)**

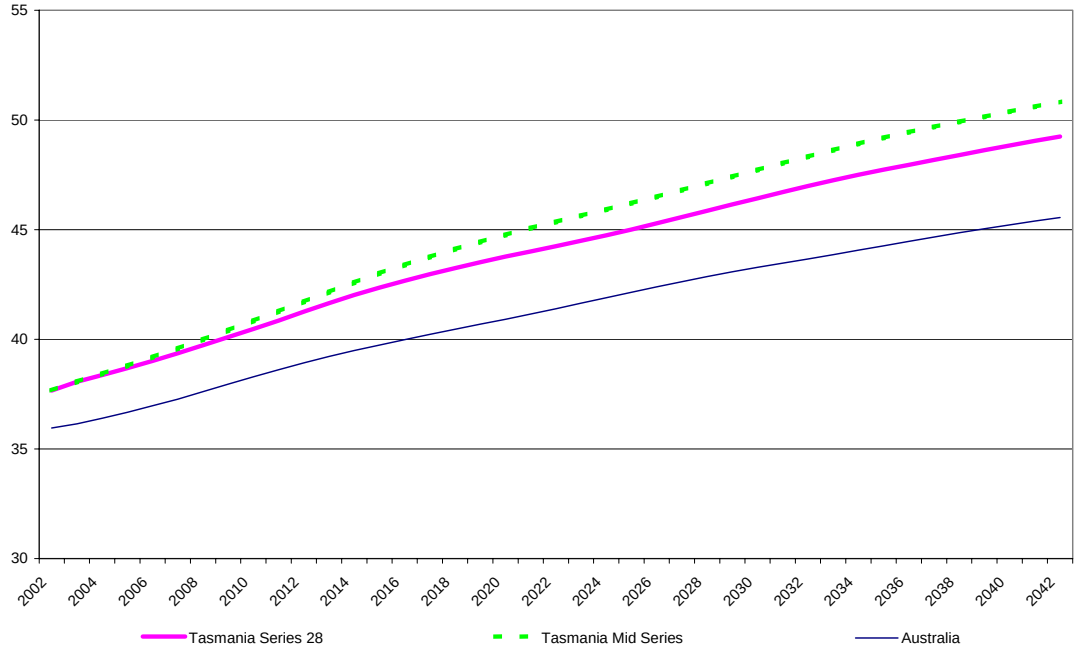
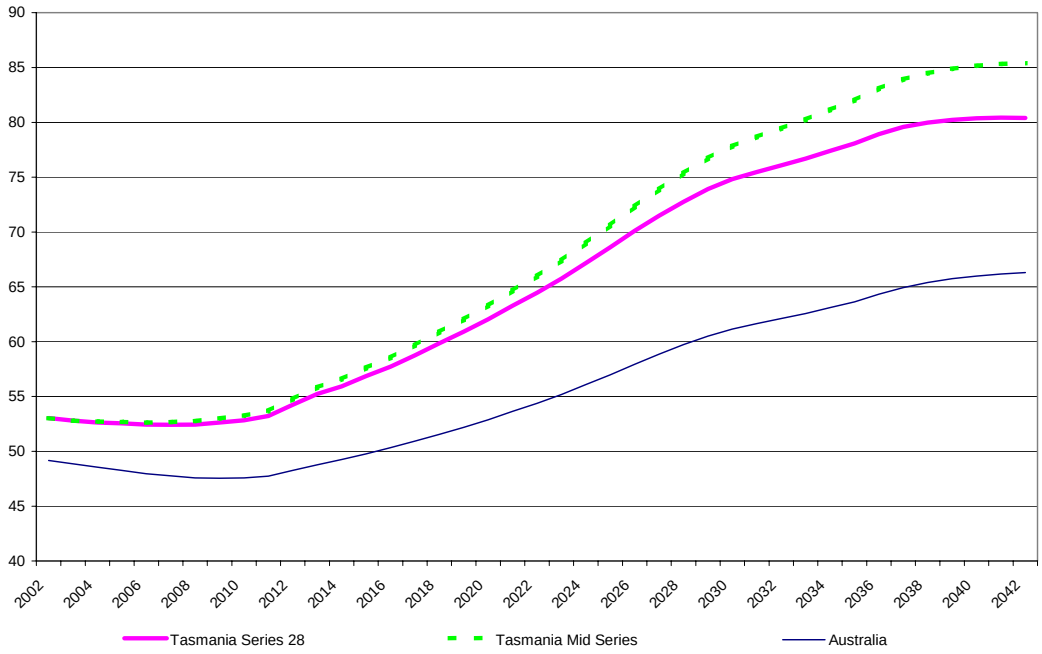



**Chart 3A: Tasmanian and Australian total dependency ratio (per cent)**




*Service usage indices*

As noted earlier, the demographic models are used to derive indices of service usage that, in turn, help drive the growth in expenditure. The indices use national rates of service usage by age. The key indices for determining the growth in the demand for Tasmanian Government services over time are the indices of hospital usage (based on number of patient days), disability (based on disability rates by age), school attendance (based on school attendance by age, assuming all persons children of compulsory school attendance age attend school) and three indices relating to the cost

of public order and safety – crime (based on crime victimisation by age), court appearances and incarceration.

Movements in these indices reflect both changes in the size and age structure of the population. The Tasmanian shares of the corresponding national indicators provide an indication of how changes in the size and structure of the Tasmanian population are projected to impact on the demand for services in Tasmania, relative to Australia as a whole. In order to isolate the effect of relative changes in the population structure rather than the size, the following chart presents the projected Tasmanian shares of selected national indicators in terms of the deviation of these shares from Tasmania's population share (using the updated Series 28 population projections).

**Chart 4A: Tasmanian service usage indices (Series 28)**
**(percentage point deviation of share of national indices from population share)**

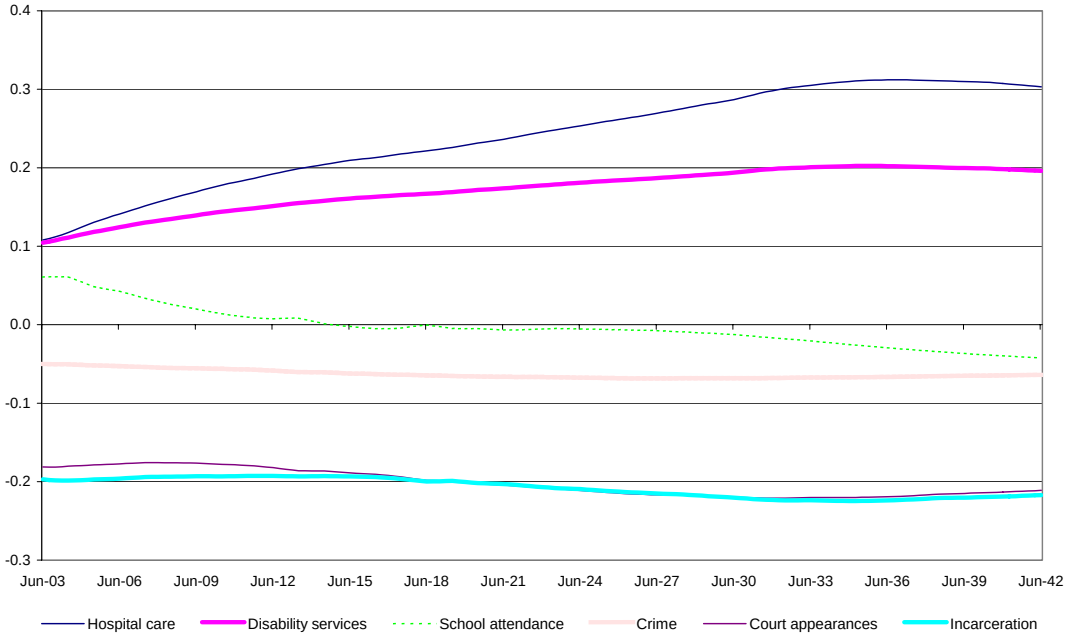
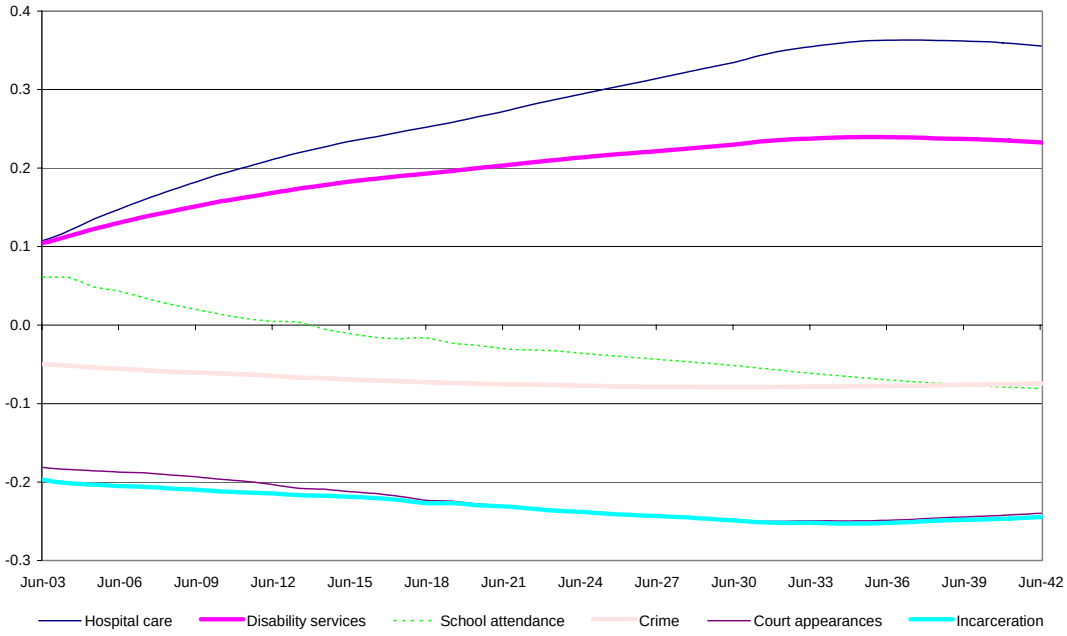



Chart 4A shows that, considering demographic factors alone, the use of hospital and disability services in Tasmania as a share of national usage are projected to grow relative to the State's population share. The share of school attendance usage, relative to the State's population share, is expected to decline, while the State's shares of the three indicators for public order and safety are expected to decline slightly relative to the State's population share.

Chart 5A shows that under the Mid Series population projections the projected increase in usage for services used predominantly by the aged and the decrease in usage of services used predominantly by younger persons are more pronounced. This is because of the faster rate of projected population ageing in the Mid Series.

**Chart 5A: Tasmanian service usage indices (Mid Series)**
**(percentage point deviation of share of national indices from population share)**




Care should be taken in interpreting these charts as they show only the assumed relationship between population structure and service usage. This relationship is assumed to drive, in part, the level of expenditure on particular services. However, the starting level of Tasmanian Government expenditure on a particular portfolio area, relative to national expenditure in this area, is a result of a range of factors and may not correspond to the Tasmanian share of the demographic indicator or indicators for that portfolio area.

The approach used here assumes that the age distribution of services usage over time is constant and that unit costs are the same over the age distribution. Tasmanian Treasury notes that the question of whether the age profile of usage rates, particularly for health services, will remain stable over time is a contentious one and that further research in this area is required.

The Commission may wish to consider how projections of health demand, in particular, could be enhanced by the consideration of the epidemiological characteristics of different age cohorts and variations in the cost of medical interventions for different categories of illness and injury.

**The economic models**

The economic models aim to provide an internally consistent treatment of the main forces shaping the Australian and Tasmanian economies over the 38 years to 2042. The models do not attempt to provide detailed analysis at a sectoral level. The models are concerned with long-run trends and deliberately abstract from cyclical influences on the economy. The model outputs for a given year therefore should not be interpreted as forecasts of the actual level of economic activity and are likely to differ from official or private sector forecasts.

In projecting the long-run rate of economic growth, the models assume that the levels of national and Tasmanian output, measured in Gross Domestic Product (GDP) and Gross State Product (GSP) respectively, are determined by the levels of employment and productivity as follows:

$$\text{GDP} = \text{Population aged 15 and over} \times \frac{\text{Labour force}}{\text{Population aged 15 and over}} \times \frac{\text{Employment}}{\text{Labour Force}} \times \frac{\text{GDP}}{\text{Employment}}$$

National unemployment is assumed to move to a non-accelerating inflation rate of unemployment (NAIRU) of 6.0 per cent with the Tasmanian unemployment rate remaining fixed over the projection period. Therefore, outside the initial movement to the NAIRU, the ratio of employment to the size of the labour force is constant and employment is determined by the size of the population aged over 15 and the participation rate.

The participation rate is projected based on projected participation rates by age and the projected age structure of the population.

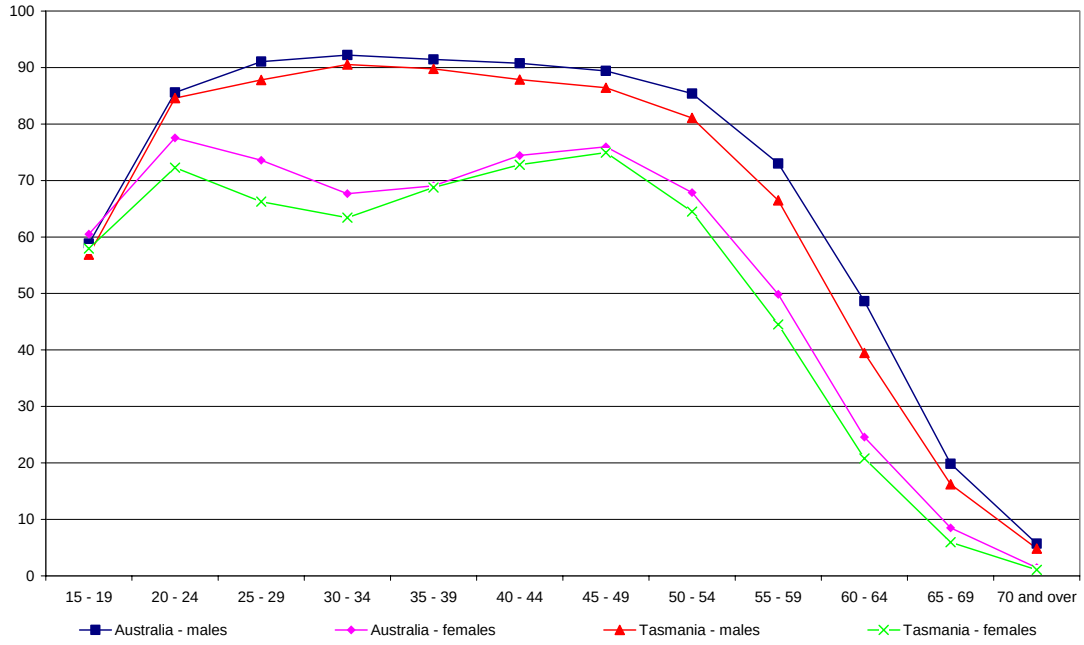
Tasmanian Treasury has developed three sets of assumptions for participation rates by age based on the available ABS data on male and female participation rates by age.

Tasmanian Treasury notes the work undertaken by the Commission on the cohort dynamics of participation rates by age and believes that further work in this area will be helpful in developing plausible scenarios for future participation rates. From a Tasmanian perspective, some areas of future research by the Commission that would be useful include analysis of cohort effects on participation rates by age and gender at a state level and analysis of the reasons for variations in participation rates by age and gender between states.

The three scenarios developed by Tasmanian Treasury do not consider the issue of cohort effects: they are designed to examine the impact of different participation rates by age on the Tasmanian and national economies.

Chart 6A shows the average participation rates by age and sex for Tasmania and Australia for the five years to September 2004.

**Chart 6A: Tasmania and Australia - Participation rates by age and gender (five years to September 2004, per cent)**




*Source: ABS Cat. No 6291.0.55.001 Labour Force Detailed*

The three sets of assumptions developed for Tasmanian and Australian participation rates by age are as follows:

- low case – participation rates by age and sex remain constant at the average for the five years to September 2004;
- mid case – participation rates by age and gender change over the 20 years to September 2024. For Australia, the participation rates by age and sex change initially by the average monthly change in their five-year moving average over the five years to September 2004. Over the 20-year period to 2024 the change in each participation rate is reduced each month such that they are close to static by 2024. Tasmanian participation rates by age and sex are projected to grow at the same rate as the corresponding Australian rates[25];
- high case – participation rates for all age groups except the 55-59, 60-64 and 65-69 age groups are assumed to change in the same way as in the mid scenario. The Tasmanian and Australian participation rates for age and gender for the 55-59 age group are assumed to converge gradually towards the corresponding participation rate for the 50-54 age group. The rates by age and sex for the 60-64 and 65-69 age groups are assumed to grow at the same rate as the corresponding rates for the 55-59 age groups.

All participation rates by age and gender are assumed to be unchanged after September 2024.

[25] The historical trends in Tasmanian and Australian participation rates by age are slightly different. However, for simplicity it is assumed that they change at the same rate over the projection period.

Chart 7A shows the assumed participation rates by age and gender from September 2024 onwards for Tasmania and Australia under the mid case. Chart 8A shows the assumed rates under the high case.

**Chart 7A: Tasmania and Australia - Participation rates by age and gender (September 2024 onwards mid case, per cent)**

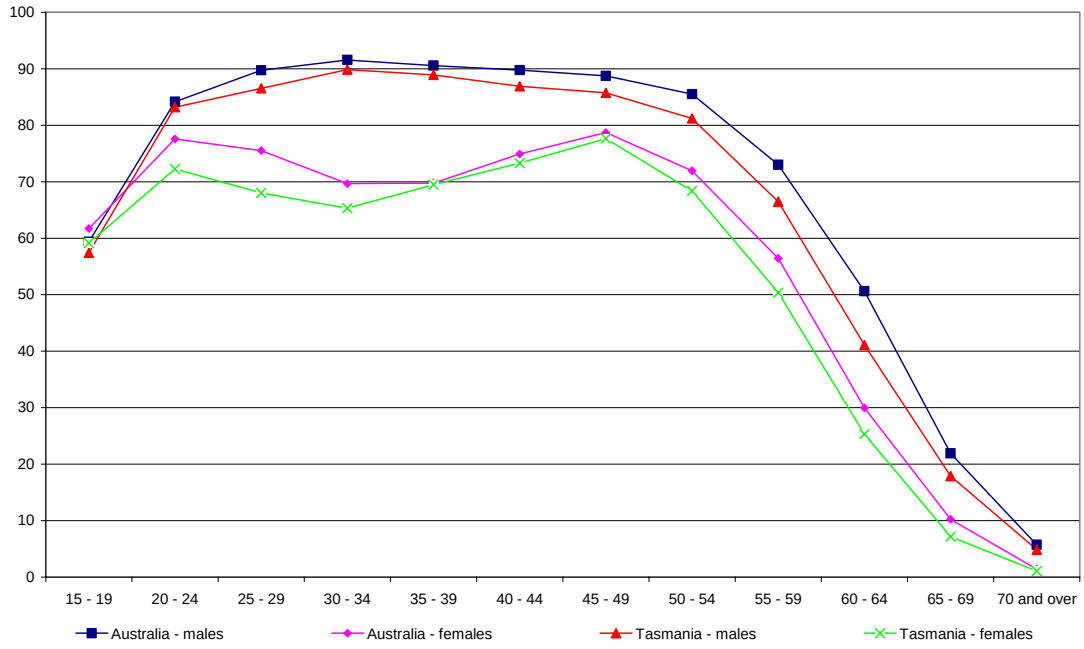
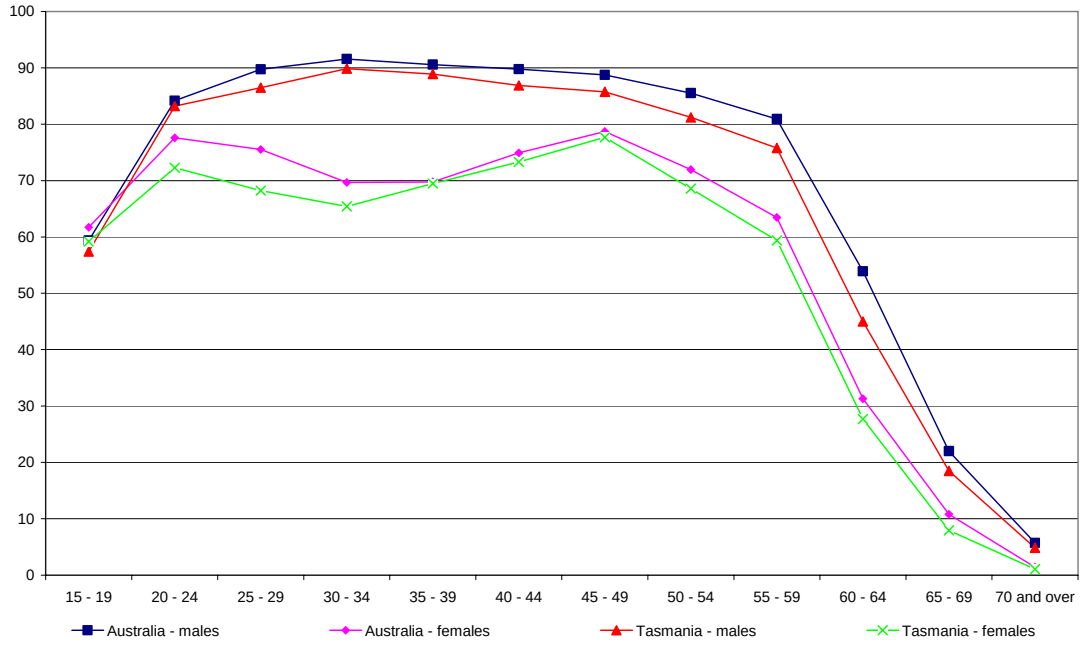



**Chart 8A: Tasmania and Australia - Participation rates by age and gender (September 2024 onwards high case, per cent)**




The models assume that average hours per employee remain fixed. In other words, there is no shift between full and part-time employment within the total number of persons projected to be employed.

Tasmanian Treasury notes the work the Commission has undertaken on the possible impact of population ageing on the unemployment rate and the average number of hours worked. These issues will be considered further in Tasmanian Treasury's future development of the modelling framework but to date have not been incorporated. Tasmanian Treasury notes that according to the *ABS Labour Force Survey* there is some variation between the national and Tasmanian age profiles of unemployment and average hours worked, as there is with participation rates.

As in the Commonwealth Government's *Intergenerational Report*, annual productivity growth is assumed to equal 1.75 per cent over the projection period.

Starting with this basic framework, the models derive growth rates for a range of other variables such as consumption, investment and wages.

There are a number of limitations to the economic modelling framework used in this model that drive national and Tasmanian output growth using exogenous population and participation rate assumptions and a fixed rate of productivity growth. In particular, the model does not allow for any feedback from Tasmania's performance in terms of labour force participation and unemployment on the State's population. The modelling results show that the projected economic and fiscal outcomes are sensitive to the assumed level and composition of net interstate migration to Tasmania. Research presented by the Tasmanian Treasury in its discussion paper *Tasmania's Population 2003* found a strong relationship between the proportion of Tasmanians in employment relative to the proportion for Australia as a whole and the level of outward interstate migration. Tasmania's future levels of population and economic growth are likely to depend in part on the State's relative performance in terms of its rates of unemployment and labour force participation.

The modelling framework does not seek to project the possible impact of population ageing or a range of other possible institutional and technological changes on the rate of productivity growth nor does it seek to project possible differences in productivity growth between Tasmania and Australia as a whole. Tasmanian Treasury notes the contributions of a number of other submissions on the issue of how population ageing could affect productivity growth and considers this to be an important area of research for the Commission.

**The Budget models**

The projections of Tasmanian own-source revenue are based on projected changes in Tasmanian economic variables. For example, payroll tax is calculated from the historical effective rate of payroll tax, Tasmanian employment and Tasmanian average weekly earnings. Stamp duty is projected to change with the projected values of dwelling and other construction investment. Motor vehicle taxes are projected to grow at the same rate as Tasmanian private consumption. Revenue from gambling taxes is also projected to grow.

For Commonwealth payments, the Commonwealth budget model projects the size of the total national pool. The Tasmanian budget model calculates the Tasmanian share of GST revenue and SPPs. Total GST revenue is projected to grow at the same rate as

an indicator for the GST base (calculated as private consumption excluding education and health plus dwelling investment).

The expenditure side of the Tasmanian budget model projects the major expense categories within each portfolio as a share of total expenditure in the combined jurisdictions budget model. The combined jurisdictions projection is calculated by adjusting the historical figure by a combination of factors including demographic driven service usage, real per capita income growth, the general rate of inflation, growth in wage and other employee costs, and, where applicable, the assumed rate of excess expenditure growth.[26]

For those expenditure categories where population ageing is projected to influence service usage, the Tasmanian share of each expenditure line is projected to change to reflect the impact of different rates of population ageing on expenditure between Tasmania and Australia as a whole. For the other expenditure lines, Tasmania's share is projected to reflect changes in Tasmania's share of the relevant national economic or demographic aggregate.[27]

The use of real income per capita as one of the factors that drives expenditure growth (the so-called real income effect) implicitly assumes that the demand for government services have positive income elasticities. This is broadly consistent with the evidence in a Tasmanian context although the precise nature of the relationship between the demand for government services and per capita income (or indeed what is meant by 'demand' in this context) is less clear.

In a Tasmanian context, the question of the appropriate measure of real income per capita for the purpose of projecting Tasmanian Government expenditure is important. It is not clear which measure of real income is most appropriate for Tasmania. It is plausible that the demand for Tasmanian government services is determined with reference to local factors and will be driven by GSP per capita but it is also plausible that Tasmanian residents take the range and quality of services available elsewhere in Australia into account and therefore that GDP per capita is more relevant in determining the demand for services. Another possibility, as discussed in the submission by the Queensland Government, is that the real income effect, while still positive, will be less than 100 per cent of the growth in real income (however defined) because over time, as average incomes rise, there will be some substitution of demand away from government provided services to similar services offered by the private sector.

To take account of this issue, two scenarios are presented, with Tasmanian Government expenditure growth driven by the growth in Tasmanian GSP per capita and by the growth in GDP per capita.

[26] For those portfolios without a clear link between service usage and age (these include housing and community amenities, recreation and culture, transport and communications) the relevant demographic factor is either total population or, in the case of housing and water supply, dwelling investment which, in turn, is based on demographic factors.

[27] In a number of expenditure items without a clear link to population ageing, the relevant variable is the State's share of the national population.

As with the real income effect, there is considerable uncertainty as to the future rates of 'excess' expenditure growth in different portfolio areas. Conceptually, excess expenditure growth is any growth in government expenditure that is not related to demographic change, real income growth and inflation. It therefore includes any pure price inflation in a given portfolio effects in excess of the economy-wide rate of inflation, as well as any improvements in the volume or quality of services provided that are not captured by changes in population size and structure and real income growth.

Tasmanian Treasury has undertaken some preliminary research to determine historical rates of excess expenditure growth in the key portfolios of health, education and public order and safety in Tasmania. The results are highly sensitive to the assumptions made concerning the appropriate measure of real per capita income growth and the time period under consideration. This, together with a lack of long-term data for certain variables, means that this research has thus far been inconclusive. Consequently, for the purpose of the results presented here assumptions have been made concerning the rates of excess expenditures growth in key portfolios, namely that there is no excess expenditure growth, there is annual excess expenditure growth of 0.5 per cent and that there is annual excess expenditure growth of 1.0 per cent.

**Starting values for models**

For most variables, the models use data for the June quarter 2004 as the starting values. In the economic modules, where possible, seasonally adjusted quarterly data have been used. In the case of GSP some adjustments were necessary. GDP and State Final Demand (SFD) data are available on a quarterly basis up to June 2004 with the chain-volume measures presented in 2002-03 prices. However, GSP data are only available on an annual basis up to 2002-03 with the chain volume measure presented in 2001-02 prices. The Tasmanian chain-volume GSP series was converted into 2002-03 prices by inflating all values by the change in the GSP deflator between 2001-02 and 2002-03. Annual values of GSP were converted to quarterly values based on the quarterly split of SFD plus net international merchandise trade. GSP estimates for the four quarters to June 2004 were estimated by applying the June quarter 2003 ratio of GSP to SFD plus net trade in goods to the quarterly values of SFD plus net trade in goods up to June 2004. Tasmanian Treasury will produce updated modelling results when the 2003-04 GSP data becomes available later this month.

The starting values for the three budget modules are based on the *2003-04 Final Budget Outcome* for the Commonwealth, the 2003-04 ABS *Government Financial Estimates* publication for the combined states module and the 2003-04 *Treasurer's Financial Statements* for the Tasmanian budget module. Where data were not available at the required level of detail or was inconsistent, the proportionate splits in expenditure from the 2002-03 ABS *Government Finance Statistics* publication were used.

The data in the ABS Government Financial Estimates publication are now out of date compared to the data used for the Commonwealth and Tasmania. This has only a

minor impact on the Tasmanian budget outcomes but, partly for this reason, no results for the combined states budget are presented here.