

**Queensland Government**

**Submission**

**on the**

**Economic Implications**

**of an**

**Ageing Australia**

**September 2004**

## Executive Summary

Population ageing will bring about significant social and economic change, requiring appropriate planning and policy responses from all levels of government in Australia.

In recognition of these challenges, the Council of Australian Governments agreed in late 2002 to request the Productivity Commission to undertake research into the impact of population ageing. Following this decision, on 24 June 2004, the Treasurer of the Commonwealth of Australia instructed the Commission to undertake a study into the economic implications of ageing covering:

- the likely impact of an ageing population on Australia's overall productivity and economic growth;
- the potential economic implications of future demographic trends for labour supply and retirement age, and the implications for unpaid work such as caring and volunteering; and
- the potential fiscal impact of the above factors on Commonwealth, State and Territory and, to the extent practicable, local governments.

It is critical for governments at all levels to begin to consider and assess appropriate policy responses to the challenges associated with the ageing of the population. Accordingly, this Productivity Commission study should play an important role in establishing a research consensus to guide the development of considered strategies and policies. An assessment of how ageing will differentially affect the States will also represent an important output of this research.

The study should also support and facilitate an exchange of information across sectors of government, business and the community and assist in developing a shared understanding of the important challenges which lie ahead as the population ages. In Queensland, this dialogue has already commenced through community consultation on the Government's discussion paper, *Queensland 2020: A State for All Ages*.

In common with the rest of Australia and other industrialised countries, the State of Queensland faces the challenges of an ageing population. According to Queensland Government population projections, the median age of Queenslanders is projected to increase from 35.3 years in 2002 to 40.2 years in 2021, and to 47.3 years in 2051. While population ageing will be a feature of all Queensland regions, there will be important regional differences which will need to be accommodated in future policy and planning.

The Queensland Government's response to population ageing is to deliver policies and programs for Queenslanders that maximise the opportunities presented by an ageing population while meeting the challenges. As identified in the Queensland Government's response to the Commonwealth Treasury discussion paper, *Australia's Demographic Challenges*, the Government is already delivering policies and strategies that will help to address the challenges of an ageing population. However, in some areas, responses to ageing will require a collaborative approach involving the Commonwealth Government.

Reflecting the need to account for the differential impact of ageing on the Australian states, this submission discusses population ageing in the Queensland context. **Chapter 1** provides an overview of the submission and highlights a number of Queensland's salient demographic characteristics which need to be considered when assessing the impact of population ageing on the State:

- Queensland has a slightly younger population profile reflecting two main factors — the age composition of net interstate migration to Queensland and, to a lesser extent, the State's Indigenous population;
- Queensland's aged dependency ratio — the population aged 65 years and over expressed as a ratio of the working age population (20-64 years) — is expected to increase from 19.7 persons for every 100 persons of working age to 46.9 over the next 40 years.
- Queensland is unique in that the State is projected to record stronger growth than Australia in aged persons (aged 65 years and over) over the next 40 years as well as continued growth in younger age cohorts (specifically aged 19 years and under) — this growth differential in the youth cohort means that Queensland will continue to face increasing demand for education services from a growing school age population, while the school age population in the rest of Australia declines; and
- Queensland's population is the most decentralised of all mainland states and the effects of ageing within and across the regions need to be taken into consideration when assessing future service delivery and infrastructure needs.

**Chapter 2** examines the potential impact of ageing on the State's labour force and finds that under a number of alternative scenarios, Queensland's labour force growth will slow until at least 2050-51. However, there are a number of uncertainties in these projections as a range of factors will influence future age-specific participation rates, particularly participation rates for older workers, who currently record the lowest rates of labour force attachment.

Population ageing is one of several factors that will influence Queensland's future productivity and growth performance. **Chapter 3** discusses the outlook for future living standards in Queensland. Projections, produced under three alternative scenarios for participation and productivity, indicate ageing will slow growth in real GSP per capita, increasing the importance of strategies to raise economic growth in response to ageing.

**Chapter 4** discusses the fiscal implications of ageing. The Queensland Government has developed a number of modelling scenarios to investigate the potential fiscal impact of population ageing over a 40 year period. The results of this scenario analysis confirm that fiscal projections are highly sensitive to underlying economic, expenditure and revenue assumptions. It is therefore critically important for the Commission to provide a research consensus in these areas to inform fiscal modelling of the impacts of ageing.

This submission also identifies a number of critical areas of research for the Productivity Commission to consider in responding to its Terms of Reference.

## Areas for further research

### *Demographic projections*

- develop Indigenous population projections to assist service delivery and planning;
- investigate mortality assumptions underpinning population projections to increase the reliability of projections of the aged population; and
- examine drivers of retirement migration.

### *Assessing impacts of ageing on labour force*

- examine profiles of retirement age by industry and also age profiles by industry;
- identify the factors which influence retirement decisions and how these factors may differ between age cohorts and by occupation/by industry;
- identify institutional arrangements, such as eligibility and access to pensions and superannuation, that may encourage early retirement;
- examine the capacity of the aged to supplement pensions by accessing capital (such as investments in property and shares) to fund retirement incomes;
- identify whether flexible work arrangements are more attractive to, or utilised by, specific age groups;
- identify factors which may impede the ability of older workers to find and retain employment;
- identify the impact of ageing on workplace health and safety costs; and
- identify how the consumption patterns of the aged differ from the rest of the population — in particular, the impact of ageing on the transient population and the associated demand for infrastructure and services.

### *Assessing impacts of ageing on productivity and economic growth*

- identify whether broad assumptions for capital deepening in Australia can be inferred to improve modelling of the economic impact of ageing;
- identify links between age and creativity or inventiveness and age and entrepreneurship; and
- identify implications of increasing average levels of human capital for future productivity growth, and evidence or projections of how the incentives to acquire human capital might change in the future.

### *Assessing fiscal impacts of ageing*

- assess future health cost pressures and the long-term capacity of the health and aged care systems to remain efficient, equitable and sustainable;
- assess the importance of non-demographic factors that could compound the fiscal effects of population ageing;
- examine the fiscal impact of ageing on local government, using appropriate modelling which is consistent and can be integrated with the modelling developed for the Commonwealth and State governments; and
- assess the effect of higher per capita incomes on government expenditure and capacity and willingness to pay and the scale of net intergenerational inequity that may arise as the population ages.

Attachment 4 also raises specific research questions in relation to the long-term fiscal modelling of the impact of ageing.

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## **1. Introduction**

### **1.1 Purpose of this submission**

The Commonwealth Government, following a request from the Council of Australian Governments, has instructed the Productivity Commission to undertake a research study examining the productivity, labour supply and fiscal implications of population ageing over the next 40 years for all levels of government.

The Productivity Commission is to report on:

- the likely impact of an ageing population on Australia's productivity and economic growth;
- the potential implications of future demographic trends for labour supply and retirement age, and the implications for unpaid work such as caring and volunteering; and
- the potential fiscal impact of the above factors on Commonwealth, State and Territory and, to the extent practicable, local governments.

This document comprises the formal response by the Queensland Government to the invitation by the Productivity Commission to provide a submission addressing issues raised in the Terms of Reference of the study.

### **1.2 The challenge of population ageing in Queensland**

#### **1.2.1 Relevance**

In common with the rest of Australia and other industrialised countries, the State of Queensland faces the challenges of an ageing population.

While detailed features of the demographic characteristics of the State are contained in Attachment 1 to this Submission, important points to note include:

- Queensland has a slightly younger population profile reflecting two main factors — the age composition of net interstate migration to Queensland and, to a lesser extent, the State's Indigenous population;
- Queensland's aged dependency ratio — the population aged 65 years and over expressed as a ratio of the working age population (20-64 years) — is expected to increase from 19.7 persons for every 100 persons of working age to 46.9 over the next 40 years;
- Queensland is unique in that the State is projected to record stronger growth than Australia in aged persons (aged 65 years and over) over the next 40 years as well as continued growth in younger age cohorts (specifically aged 19 years and under) — this growth differential in the youth cohort means that Queensland will continue to face increasing demand for education services from a growing school age population, while the school age population in the rest of Australia declines; and

- Queensland's population is the most decentralised of all mainland states and the effects of ageing within and across the regions need to be taken into consideration when assessing future service delivery and infrastructure needs.

### **1.2.2 Importance**

Population ageing will bring about significant social and economic change, requiring appropriate planning and policy responses from all levels of government in Australia. Accordingly, it is critical for governments at all levels to begin to consider and assess appropriate policy responses to the challenges associated with the ageing of the population.

The Queensland Government's response to population ageing is to deliver policies and programs for Queenslanders that maximise the opportunities presented by an ageing population while meeting the challenges. As identified in the Queensland Government's response to the Commonwealth Treasury discussion paper, *Australia's Demographic Challenges*, the Government is already delivering policies and strategies that will help to address the challenges of an ageing population. However, in some areas, responses to ageing will require a collaborative approach involving the Commonwealth Government.

Reflecting the need to account for the differential impact of ageing on the Australian states, this submission responds to the Commission's Terms of Reference from a Queensland perspective. This submission:

- discusses population ageing in Queensland, drawing on the Government's official population projections to identify demographic characteristics unique to this State;
- examines the potential impact of ageing on the State's labour force under a number of alternative scenarios;
- identifies population ageing as one of several factors that will influence Queensland's future productivity and growth performance;
- examines the impact of population ageing on improvements in material living standards as represented by growth in real gross state product per capita;
- discusses the fiscal implications of population ageing on the Queensland Budget by drawing on a number of modelling scenarios; and
- identifies discrete areas of further research, drawing on gaps in existing research.

This submission draws heavily on the Queensland Government's extensive demographic research agenda which aims to provide a high-quality evidence base to inform future policy responses to demographic challenges, including population ageing.

### **1.3 Areas for research**

In addition to its own analysis, this submission also identifies a number of critical areas of research for the Productivity Commission to consider in responding to its Terms of Reference. These include:



*Demographic projections*

- develop Indigenous population projections to assist service delivery and planning;
- investigate mortality assumptions underpinning population projections to increase the reliability of projections of the aged population; and
- examine drivers of retirement migration.

*Assessing impacts of ageing on labour force*

- examine profiles of retirement age by industry and also age profiles by industry;
- identify the factors which influence retirement decisions and how these factors may differ between age cohorts and by occupation/by industry;
- identify institutional arrangements, such as eligibility and access to pensions and superannuation, that may encourage early retirement;
- examine the capacity of the aged to supplement pensions by accessing capital (such as investments in property and shares) to fund retirement incomes;
- identify whether flexible work arrangements are more attractive to, or utilised by, specific age groups;
- identify factors which may impede the ability of older workers to find and retain employment;
- identify the impact of ageing on workplace health and safety costs; and
- identify how the consumption patterns of the aged differ from the rest of the population — in particular, the impact of ageing on the transient population and the associated demand for infrastructure and services.

*Assessing impacts of ageing on productivity and economic growth*

- identify whether broad assumptions for capital deepening in Australia can be inferred to improve modelling of the economic impact of ageing;
- identify links between age and creativity or inventiveness and age and entrepreneurship; and
- identify implications of increasing average levels of human capital for future productivity growth, and evidence or projections of how the incentives to acquire human capital might change in the future.

*Assessing fiscal impacts of ageing*

- assess future health cost pressures and the long-term capacity of the health and aged care systems to remain efficient, equitable and sustainable;
- assess the importance of non-demographic factors that could compound the fiscal effects of population ageing;
- examine the fiscal impact of ageing on local government, using appropriate modelling which is consistent and can be integrated with the modelling developed for the Commonwealth and State governments; and
- assess the effect of higher per capita incomes on government expenditure and capacity and willingness to pay and the scale of net intergenerational inequity that may arise as the population ages.

Attachment 4 also raises specific research questions in relation to the long-term fiscal modelling of the impact of ageing.

## 1.4 Outline of this submission

**Chapter 2** examines the potential impact of ageing on the State's labour force and finds that under a number of alternative scenarios, Queensland's labour force growth will slow until at least 2050-51. However, there are a number of uncertainties in these projections as a range of factors will influence future age-specific participation rates, particularly participation rates for older workers, who currently record the lowest rates of labour force attachment. These factors include the cost of retirement, family responsibilities including access to affordable quality childcare, employment flexibility, employer perceptions, access to training, health and safety and access to transport and housing.

Population ageing is one of several factors that will influence Queensland's future productivity and growth performance. **Chapter 3** discusses the outlook for future living standards in Queensland. Projections, produced under three alternative scenarios for participation and productivity, indicate ageing will slow growth in real GSP per capita, increasing the importance of strategies to raise economic growth in response to ageing.

**Chapter 4** discusses the fiscal implications of ageing. This submission flags potential fiscal pressures for Queensland, arising from population ageing and non-demographic cost pressures over the next 40 years. The Queensland Government has developed a number of modelling scenarios to investigate the potential fiscal impact of population ageing. A high level discussion of the issues surrounding the modelling of long-term fiscal projections is provided in Attachment 4. The results of scenario analysis confirm that fiscal projections are highly sensitive to underlying assumptions, with three main areas of uncertainty in the analysis of long-term fiscal pressure. These are:

- how productivity growth and labour force participation will affect fiscal pressures over the long-run;
- the impact on government expenditures arising from ageing, cost inflation and economic growth translating to higher household incomes and increased demand; and
- how revenues (grants from the Commonwealth and own source revenue) will track relative to the economy as a whole and affect fiscal pressure.

Queensland's salient demographic characteristics are outlined in detail in **Attachment 1**, which presents a detailed overview of population ageing in the State, drawing on the Government's official population projections. This attachment also outlines the Government's demographic research program.

**Attachment 2** presents information on the health status of the Queensland population in terms of life expectancy, self-reported health status, mortality and burden of disease and injury. **Attachment 3** briefly discusses the Queensland Government's economic strategy which plays a significant role in informing the Government's response to population ageing. **Attachment 4** provides a high level discussion of the issues surrounding the modelling of long-term fiscal projections which were referred to in Chapter 4. **Attachment 5** provides a broad overview of the accommodation provided to seniors through the Queensland Government's Public Housing Program.

## 2. The Impact of Ageing on the Labour Force

### Key points

- Queensland records a higher aggregate labour force participation rate than the national average, reflecting important interstate differences in participation across age cohorts. However, labour force participation rates fall markedly in both Queensland and Australia for people aged over 54 years.
- The State's future labour force growth will be affected by two key factors as the population ages — changes in Queensland's age profile and shifts in labour force participation by age. Projections of Queensland's age profile over the next 40 years indicate a much higher share of the population in the older age groups. The age groups that are projected to grow the most rapidly over the next 40 years are also those that currently have the lowest rates of participation in the labour force. Under a number of alternative scenarios, ageing is projected to slow Queensland's labour force growth until at least 2050-51.
- There are a range of factors that may influence future age-specific participation rates, particularly the decision of older workers to participate in the labour force, which need to be considered when assessing the impact of ageing on the labour force. These factors include the cost of retirement, family responsibilities including access to affordable quality childcare, employment flexibility, employer perceptions, access to training, health and safety and access to transport and housing.
- Ageing may also affect unpaid work, such as caring and volunteering. Current research indicates the potential for a 'caring deficit' as demand for unpaid care associated with population ageing may outpace growth in the potential pool of carers.

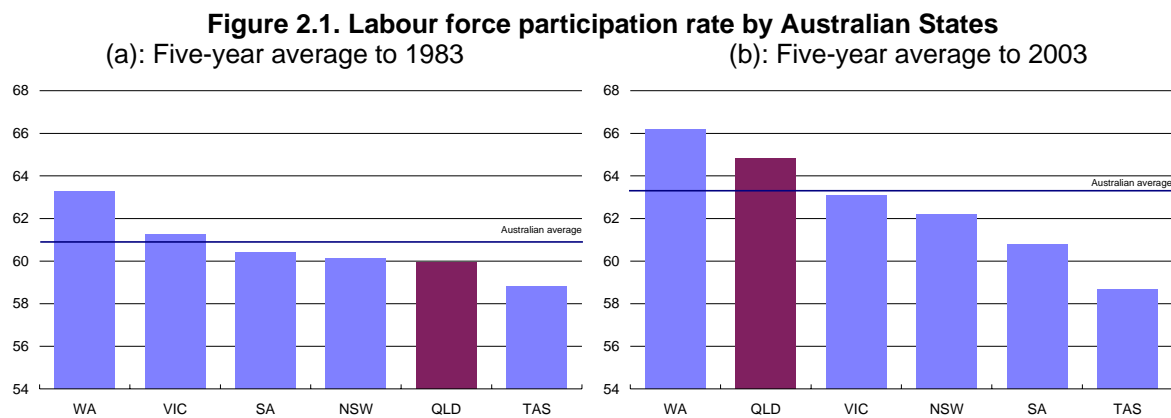
### Areas for further research

- examine profiles of retirement age by industry and also age profiles by industry;
- identify the factors which influence retirement decisions and how these factors may differ between age cohorts and by occupation/by industry;
- identify institutional arrangements, such as eligibility and access to pensions and superannuation, that may encourage early retirement;
- examine the capacity of the aged to supplement pensions by accessing capital (such as investments in property and shares) to fund retirement incomes;
- identify whether flexible work arrangements are more attractive to, or utilised by, specific age groups;
- identify factors which may impede the ability of older workers to find and retain employment;
- identify the impact of ageing on workplace health and safety costs; and
- identify how the consumption patterns of the aged differ from the rest of the population — in particular, the impact of ageing on the transient population and the associated demand for infrastructure and services.

This chapter examines the potential impact of ageing on the labour force, initially by comparing age-specific participation rates in Queensland with those of other Australian states. Participation in the labour force by older people and the factors that influence participation decisions are also discussed. This chapter also examines the nature of unpaid work, such as caring and volunteering, identifying how demand and supply for care may change as the population ages.

## 2.1 Labour force participation rates in Queensland

Queensland's labour force participation rate for the five years to 2003 averaged 64.8 per cent, higher than the 63.3 per cent recorded nationally.<sup>1</sup> The State's labour force participation rate has increased at a faster rate than the other states over the past 20 years, rising from a five-year average of 59.9 per cent in 1983 to 64.8 per cent in 2003. Figure 2.1 compares participation rates across the States and shows the substantial rise in Queensland's labour force participation rate over the last 20 years.



Source: Australian Bureau of Statistics Cat. No. 6202.0

Since Queensland's relatively high participation rate may reflect different age structures, rather than interstate differences in propensities to participate, it is instructive to compare Queensland's participation rate with that of other Australian states at a more disaggregated level. This analysis enables us to gauge the relative importance of age structure *vis-à-vis* age cohort effects in explaining differences in labour force participation rates between states. Table 2.1 compares the five-year average participation rate by age and gender in Queensland with that of Western Australia (with the highest participation rate) and Victoria (with the third highest participation rate behind Queensland) in 1983 and 2003.

Higher male *and* female participation explain why Western Australia has a higher labour force participation rate than Queensland and why Queensland ranks above Victoria in 2003. However, more detailed points to note about Table 2.1 include:

- While male participation rates have fallen in Queensland and Western Australia over the past 20 years, Queensland's total male participation rate has remained over 2 percentage points lower than Western Australia's. This is largely due to lower participation by males aged 35 years and over in Queensland.

<sup>1</sup> Participation rates are compared on a five-year average basis, to abstract from the influence of business cycles.

- Female labour force participation rates were generally lower in Queensland relative to Western Australia in 1983. However, in contrast to males, female labour force participation rates in Queensland have actually caught up to and overtaken those in Western Australia in 2003, with the exception of the 45-54 and 50-59 age groups.
- Higher participation by youth (15-19 year olds) is the main reason Queensland has a higher participation rate relative to Victoria, with the differential between the two states for this age group for both males and females remaining fairly constant over time. Higher youth labour force participation in Queensland may reflect a lower rate of education participation by this group. States with a higher share of the youth population in education, such as Victoria, have lower youth participation rates than those with a lower share of youth in education due to relatively lower labour force participation by students.

**Table 2.1. Participation rates by selected states and gender**  
(a) Male participation (b) Female participation

Age group	1983 rates			Qld differential	
	Qld	WA	Vic	WA	Vic
15-19	69.4	69.0	60.9	0.4	8.4
20-24	92.9	90.7	90.0	2.2	2.9
25-34	95.4	95.4	96.2	0.0	-0.8
35-44	94.7	95.8	95.7	-1.1	-0.9
45-54	89.9	92.5	91.3	-2.6	-1.4
55-59	78.1	82.5	82.1	-4.5	-4.0
60-64	46.5	50.3	51.9	-3.8	-5.4
65+	9.6	9.3	11.5	0.3	-1.9
<b>Total</b>	<b>77.3</b>	<b>79.7</b>	<b>77.6</b>	<b>-2.4</b>	<b>-0.3</b>

Age group	1983 rates			Qld differential	
	Qld	WA	Vic	WA	Vic
15-19	64.9	65.0	57.2	-0.1	7.8
20-24	68.3	67.5	74.5	0.8	-6.2
25-34	49.2	52.5	55.6	-3.3	-6.5
35-44	54.3	59.8	59.5	-5.6	-5.2
45-54	43.7	50.6	49.8	-6.9	-6.1
55-59	25.2	28.8	29.7	-3.6	-4.5
60-64	10.7	12.0	12.9	-1.3	-2.2
65+	2.4	2.4	2.9	0.0	-0.5
<b>Total</b>	<b>42.8</b>	<b>46.8</b>	<b>45.6</b>	<b>-4.0</b>	<b>-2.8</b>

Age group	2003 rates			Qld differential	
	Qld	WA	Vic	WA	Vic
15-19	64.6	63.1	56.4	1.5	8.2
20-24	88.0	85.6	85.1	2.4	2.9
25-34	91.0	91.8	92.6	-0.8	-1.5
35-44	90.6	92.9	91.8	-2.4	-1.3
45-54	87.6	89.4	87.9	-1.8	-0.3
55-59	73.4	78.0	72.8	-4.5	0.7
60-64	48.9	53.7	49.8	-4.7	-0.9
65+	10.4	10.8	10.3	-0.4	0.1
<b>Total</b>	<b>73.0</b>	<b>75.2</b>	<b>72.1</b>	<b>-2.2</b>	<b>0.9</b>

Age group	2003 rates			Qld differential	
	Qld	WA	Vic	WA	Vic
15-19	67.1	65.5	58.0	1.5	9.1
20-24	78.0	76.5	78.6	1.4	-0.6
25-34	69.9	67.9	71.5	2.0	-1.5
35-44	72.8	71.8	71.1	1.0	1.7
45-54	71.8	74.5	71.0	-2.7	0.7
55-59	48.8	53.0	47.8	-4.3	1.0
60-64	25.1	24.1	22.3	1.0	2.8
65+	3.5	3.5	3.0	0.0	0.5
<b>Total</b>	<b>56.9</b>	<b>57.3</b>	<b>54.5</b>	<b>-0.4</b>	<b>2.4</b>

Source: Australian Bureau of Statistics Cat. No. 6202.0

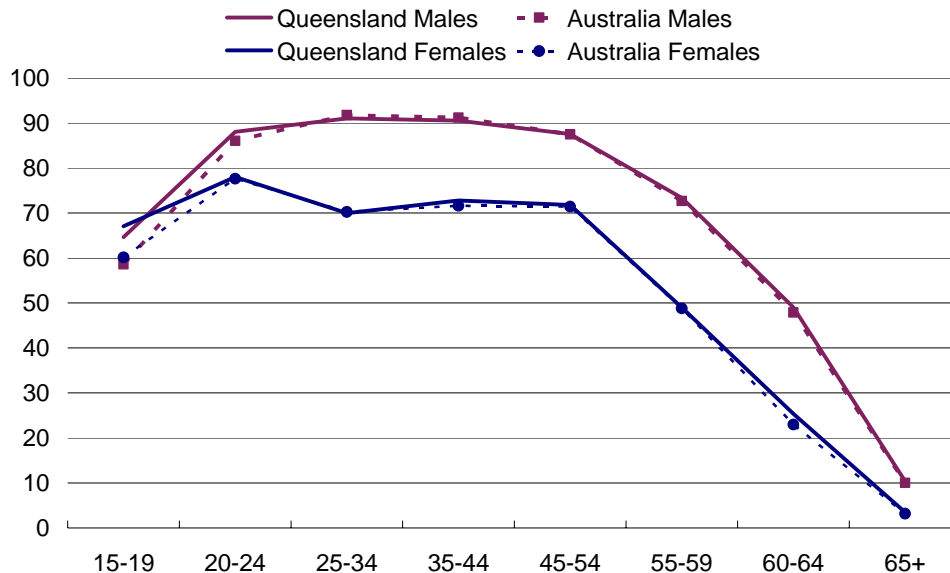
This interstate comparison of participation rates confirms that comparing Queensland's aggregate participation rate with other states may mask important differences in labour force participation across age groups and gender. While not examined here, there are also important differences in participation rates between the non-Indigenous and Indigenous population. These differences need to be recognised in the development of policy responses to the impact of population ageing.

## 2.2 Ageing and the Queensland labour force

The State's labour force growth will be affected by two key factors as the population ages — changes in Queensland's age profile and shifts in labour force participation by age. Projections of Queensland's age profile over the next 40 years, as detailed in Attachment 1, indicate a much higher share of the population in the older age cohorts. The age groups that are projected to grow the most rapidly over the next 40 years are also those that currently

have the lowest rates of participation in the labour force. Figure 2.2 shows Queensland and Australia share a key feature of labour force participation by age, that is, the sharp drop in attachment to the labour force after 54 years of age.

**Figure 2.2. Age specific participation rates, Queensland and Australia**  
(five year average to 2003)



Source: Australian Bureau of Statistics Cat. No. 6202.0

However, assuming current patterns of age-specific labour force participation will remain the same into the future is simplistic and is likely to overstate the impact of ageing on the labour force. Current participation rates reflect a range of factors including institutional arrangements, social norms and economic conditions, which are subject to change. In particular, the ‘cohort’ effects of higher levels of educational attainment and increased attachment of females to the workforce are likely to alter future labour participation rates, particularly for people aged over 44 years.

Hence, projections of future labour force growth should ideally employ a structural model that explicitly accounts for these factors. The Queensland Government is currently planning the development of such a model as part of its long-term research agenda on ageing and the labour force.

However, for the purpose of this submission, three hypothetical scenarios have been developed in order to illustrate the impacts of ageing on Queensland’s labour force growth:

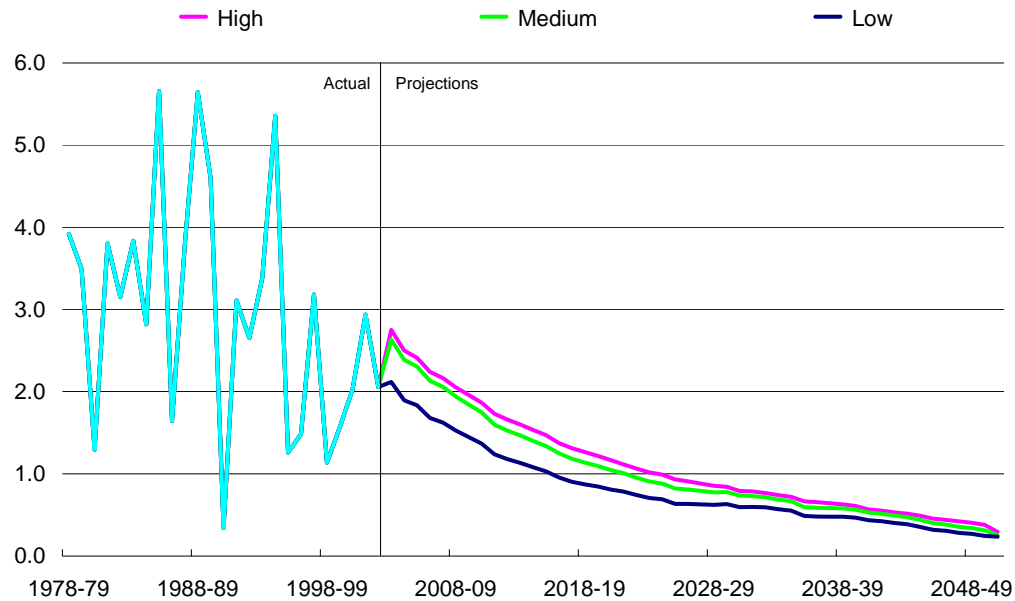
- ‘Low’ scenario — assumes current male and female participation rates (as at 2002-03) remain the same for the projection period;
- ‘Medium’ scenario — assumes male rates remain at 2002-03 levels, while female participation rates converge with male participation rates on the basis that females will continue to record higher educational attainment and increased opportunities for part-time employment;<sup>2</sup> and

<sup>2</sup> The dominant role of women in fulfilling caring responsibilities is recognised and causes a permanent participation rate differential between males and females.

- ‘High’ scenario — uses the relationship between male and female participation rates established in the medium scenario and assumes that male and female rates converge on the projected United States participation rates for 2050.<sup>3</sup>

Labour force growth rate projections, shown in Figure 2.3, indicate that under any reasonable labour force participation scenario, Queensland’s labour force is projected to grow until at least 2050-51.

**Figure 2.3. Projected labour force growth, historical and projected, Queensland**  
(annual growth, per cent)



Source: Office of Economic and Statistical Research

As noted above, these projections are not based on a structural model that explicitly accounts for factors that influence the labour force participation decision. The following section discusses a range of these factors, particularly the factors which affect the decision of older workers to participate in the labour force.

## 2.3 Factors affecting labour force participation

In the context of assessing the impact of population ageing on the labour force, an important area of research is identifying the factors which influence the decision to retire or withdraw from the labour force. Changes in these factors could shape future retirement decisions with implications for labour force growth as the population ages. In the absence of a compulsory retirement age, labour force participation, particularly for older people, reflects individual choices and preferences.<sup>4</sup>

A number of factors which will affect the labour force participation of older workers can be identified, including:

<sup>3</sup> Convergence with the generally higher United States participation rates provide an upper bound for the projections, rather than a target or anticipated change in Queensland rates.

<sup>4</sup> The compulsory retirement age was removed in Queensland through the *Anti-Discrimination Act 1991*, with the exception of certain occupations such as members of the judiciary and police officers. Most States abolished the compulsory retirement age from the early 1990s.

- the opportunity cost of retirement;
- family responsibilities;
- employment flexibility;
- employer perceptions;
- access to training and impact of new technology;
- health and safety; and
- access to transport and housing.

### **2.3.1 The opportunity cost of retirement**

The choice to retire from the labour force is influenced by the opportunity cost of retirement, that is, the income forgone by withdrawing from the labour force. In addition to life expectancy, the cost of retirement can be influenced by a range of factors, including expected level of wages, superannuation, the age pension and associated taxation and institutional arrangements.

In essence, the more post-retirement wealth or income a person acquires the greater their capacity to retire. However, there are many reasons why older people may not have saved, or otherwise obtained, a sufficient sum to fund their retirement lifestyle to the level they prefer. These could include circumstances such as: financial set backs, including periods of unemployment, business failure or illness; study; starting their family later in life or starting a second family; choosing to support adult children; and caring for their aged parents, other elderly relatives or grandchildren. For these people the opportunity cost of retirement may induce them to remain in the labour force. Women are likely to be over-represented in this group because their lower average wages and greater propensity to engage in caring roles tends to reduce their capacity to accumulate wealth to fund retirement.

Analogous to the opportunity cost of retirement is the *replacement rate* — post-retirement income (such as the age pension and superannuation) expressed as a proportion of pre-retirement income. The higher the replacement rate, the closer standards of living are to lifestyles enjoyed while working. The Australian replacement rate increased from 19.1 per cent in 1961 to 32.8 per cent in 1975 and 40.9 per cent in 1995, which translates into annual average growth of 3.9 per cent and 1.1 per cent for the two periods respectively (OECD 2002). With a higher replacement rate, the attractiveness of retirement increased, as seen in the high level of ‘early’ retirement during the 1970s, and into the 1990s, as people perceived that they could ‘afford’ to retire. Should the increase in the replacement rate be unanticipated, such as through a more generous age pension or returns on savings, the attractiveness of retirement may increase.

The actuarial fairness of a pension or superannuation scheme can also influence the retirement decision. If a person continues working after a particular age, does their net retirement wealth increase or decrease? If it decreases, or does not increase at an actuarially fair rate, continuing to work beyond that date contains an implicit tax that acts as a disincentive to remain in the labour force. An example of this situation is the anomaly in some older Commonwealth public service pension schemes that induce retirement at 54 years and 11 months because retirement benefits are actually more valuable just prior to age 55 than they are after. However, this anomaly does not exist in the superannuation schemes covering the Queensland public sector.



Further, superannuation benefits that are based on a multiple of the final salary, primarily defined benefit schemes, may affect the participation decision. Reducing participation in the labour force, rather than withdrawing completely, in this situation would result in a much lower retirement wealth and/or income, which may reduce the appeal of some flexible work arrangements.

The opportunity cost of retirement can also be influenced by the availability of other pre-retirement pension-type benefits, such as unemployment benefits, early retirement schemes and disability pensions. A change in either the generosity of these benefits or a change in the eligibility requirements has been shown to influence the retirement decision. For example, there has been a significant increase in the number of older persons on the Disability Support Pension (DSP) in Australia. The proportion of males aged 55-59 on the DSP increased from 4 per cent in 1972 to 16 per cent in 1997, and those on DSP aged 60-64 increased from 8 per cent to 25 per cent over the same period (O'Brien 2001).

Altering the age at which superannuation can be accessed may not change the age at which individuals leave the labour force, but could possibly change the way they save for retirement – separately saving enough money to live on until they can access their superannuation, much as some retirees currently use their superannuation as a means to retire before the age pension qualifying age.

The qualifying age for the age pension, which was the former compulsory retirement age, and the age at which superannuation becomes accessible may be perceived as an indicator of the appropriate age at which an individual should retire. The Australian age pension is not an income replacement scheme, like many European schemes, but rather a safety-net for those without adequate savings for their retirement. Despite this, around 74 per cent of those aged over 65 years received a pension in 2001 (FACS 2003). Part of the reason that the take-up rate for the age pension is so high is that a great number of other concessions that make retirement income stretch further are linked to the receipt of the age pension. For example, reductions in property and water rates and concessions on energy and telephone bills, motor vehicle registration, public transport and health care are available to those people in receipt of the age pension. For those receiving an age pension, 36 per cent only received a part-pension (FACS 2003), which indicates that the associated concessions may be more valuable than the pension itself.

Identifying institutional arrangements, such as eligibility and access to pensions and superannuation, that may encourage early retirement is an area for further research. Assessing the capacity of the aged to supplement pensions by accessing capital (such as investments in property and shares) to fund retirement incomes is also an area of research.

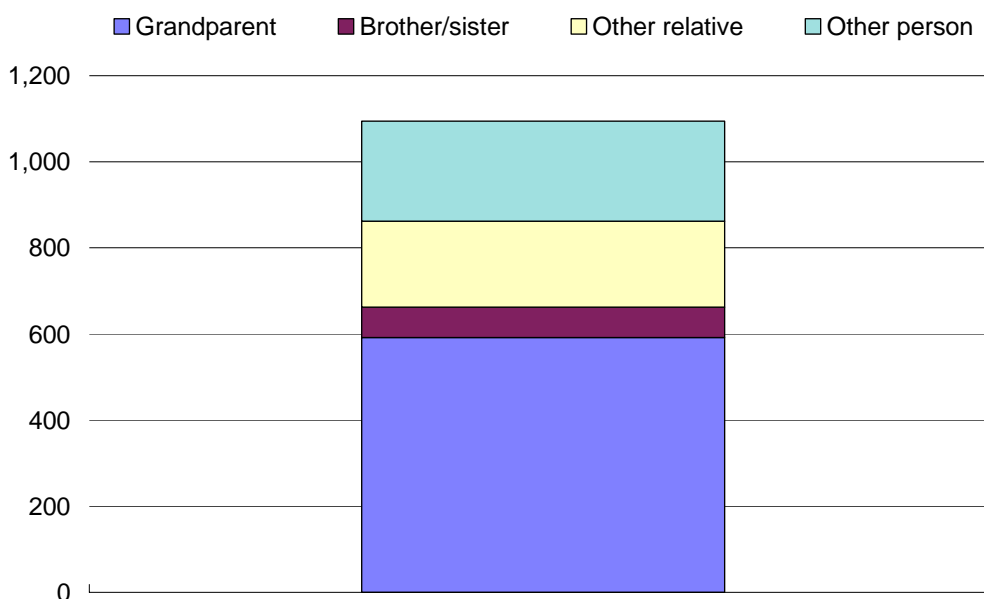
### **2.3.2 Family responsibilities**

Despite falling fertility rates, family responsibilities are likely to continue to be an important factor in the labour force participation decision as the population ages. The continued importance of this issue arises from the increasing participation of women in the labour force, combined with childbearing at older ages than in the past, and the trend for adult children to remain in the family home for longer as they complete education. However, as the population ages, responsibility for elder care is also likely to weigh on labour force participation decisions.

Important issues for workers with caring responsibilities, particularly for workers with children under five, include access to affordable quality childcare in addition to flexible working arrangements. Although not directly an issue for the aged, they may be affected by the expectations of their own children to provide care for their grandchildren.

Childcare can be provided formally, that is, in childcare centres that utilise members of the paid labour force, and informally by family and friends. Up to the age of 11 years, the majority of childcare is provided informally varying from 6 per cent at age four, when children are generally attending pre-school, to around 80 per cent before the child's first birthday (AIHW 2003). Figure 2.4 shows grandparents provide a large share of informal childcare, with most care provided by a relative of the child.

**Figure 2.4. Informal childcare by care provider, Australia, 2002**  
(number of children, 000s)



Source: AIHW (2003)

Note: Children may appear in more than one category.

Responsibility for caring for those with a disability, including older people with a disability, may also affect labour force participation. The proportion of older people with a disability *who sometimes or always require assistance with self-care, mobility or communication* increases from less than 10 per cent in those aged under 70, to more than 50 per cent in those aged 85 years or more. Unless this profile of disability changes, there may be large increases in the demand for care, formal and informal, between 2030 and 2050 as baby boomers reach the age of 85 years. This increase in demand may affect the ability of some workers to remain in the labour force if quality formal care is not available.

Table 2.2 shows that, particularly for primary carers, labour force participation by carers is lower than for non-carers. More than half (58.3 per cent) of all primary carers in Queensland aged more than 64 years spend more than 40 hours per week in caring activities, while between 40 and 50 per cent of younger carers are involved in caring for a similar period.

**Table 2.2 Carers by labour force status, Queensland, 1998**

	<b>Primary carers %</b>	<b>Other carers %</b>	<b>All carers %</b>	<b>Not a carer %</b>	<b>All persons %</b>
Employed					
Full time worker	14.9	37.1	32.5	43.8	42.2
Part time worker	25.5	20.1	21.2	18.6	19.0
Total	40.4	57.2	53.7	62.5	61.2
Unemployed					
Seeking full time work	2.4	3.9	3.6	5.1	4.9
Seeking part time work	1.8	1.3	1.4	1.3	1.3
Not in the labour force	55.3	37.5	41.3	31.1	32.6
Total	100.0	100.0	100.0	100.0	100.0

Source: Australian Bureau of Statistics Cat. No. 4430.3.40.001

Women comprised 70 per cent of all primary carers for people with a disability in 1998 (AIHW 2003). Seeking to increase women's labour force participation may affect the supply of care currently provided by women who are not in the paid labour force. For many older people, having family responsibilities, such as caring for children or aged relatives, does not necessarily entail exclusion from the labour force. However, to participate in the labour force, carers require a balance between work and caring. Accordingly, an ageing population will reinforce the need for flexible working arrangements.

### **2.3.3 Employment flexibility**

Flexible working arrangements provide the opportunity for people to work and to either fulfil other responsibilities, such as caring or studying, or to suit their lifestyle choices. Accordingly, providing quality workplaces, which accommodate the preferences of workers, may become increasingly important in raising labour force participation as the population ages. Employer benefits include amongst other things, increased staff morale, decreased stress levels, efficient use of resources through multiskilling, increased performance and productivity, reduced absenteeism and reduced recruitment and training costs.

Flexible working arrangements include part-time employment, casual employment, tele-commuting and purchased leave schemes. Having an industrial relations system that provides the capacity for flexible working arrangements may encourage higher labour force participation. Moreover, policies which allow workers, particularly women, to combine their paid employment and their caring responsibilities across their working lives will provide greater opportunities to build private retirement incomes.

For older workers in particular, flexible working arrangements may provide a way to smooth the transition from work to retirement. Older workers may be prepared to continue in employment, but in a less intensive manner, utilising part-time or work from home options, or even in self-employment (Samorodov 1999). There are important advantages of gradual retirement. For the workplace, experience is retained within the organisation and the transfer of knowledge and skills to the next generation is facilitated. For workers, a preference for more leisure time may be balanced with the need to maintain some level of income. Part-time or reduced hours in the transition to retirement may also provide workers with more recovery time from physically demanding or stressful jobs.

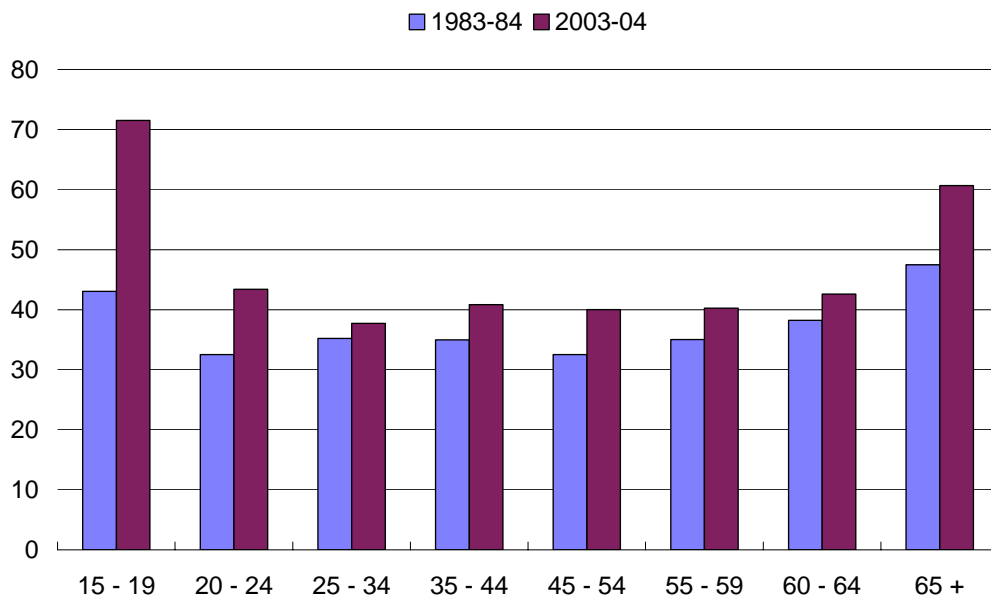
It should be noted that, while these arrangements may be appealing to older workers, the interaction of these arrangements with remuneration and superannuation may influence the decision to work or retire. As noted earlier, some defined benefit superannuation schemes have disincentives for part-time work at the end of a career.

Further, the OECD suggests that some types of flexible working arrangements, such as variable work scheduling and out of standard hours work arrangements tend to disrupt the work and family life balance. For flexible work arrangements to appeal to older workers, and encourage labour force participation, the arrangements will need to suit employees, rather than be seen as a tool for employers to re-organise their workforce (OECD 2004).

Although flexible working arrangements can be seen as a tool to encourage the continued participation of older workers in the labour force, the legislative removal of discrimination on the basis of age means that the existing flexible working arrangements are available to the entire labour force. Any promotion of flexible working arrangements, even if targeted at older workers, may also increase the attractiveness of the arrangements to younger people.

Figure 2.5 shows that there is some evidence of mature aged workers, and other workers, in Queensland taking up more flexible working arrangements, in the form of reduced hours over the past 20 years. This shift is particularly marked in the 65-plus age group, where those working less than 35 hours per week has increased by 13.1 percentage points to be 60.6 per cent of all employed persons in that age cohort.

**Figure 2.5. Employed persons working less than 35 hours per week by age group, Queensland**  
(proportion of employed persons in age group, per cent)



Source: Australian Bureau of Statistics, Cat. No. 6291.0.55.001, unpublished Labour Force survey data

In the Queensland public sector, the Department of Industrial Relations has been examining the feasibility of more flexible work practices, such as the extension of half-pay long service leave, from only being available for family or study purposes, to any purpose, and “purchased leave” arrangements. Other initiatives that are being canvassed by the Queensland Government to increase work flexibility and provide older workers with increased employment options include improved management of the transition to part-time or part-year

employment, providing staff with the flexibility to work in a different capacity and learning and knowledge transfer opportunities.

As flexible work arrangements are perceived as a tool that could increase the labour force participation of older workers, further research on the future workplace needs of older workers would usefully inform government policy and strategies.

#### **2.3.4 Employer perceptions**

Although discrimination in employment on the basis of age is outlawed in all state jurisdictions and at the federal level, many national recruitment agencies report that age discrimination is the number one barrier to employment for mature aged persons. Similarly, focus group consultation with older people and seniors' organisations on *Queensland 2020: A State for All Ages* has identified that age discrimination remains a significant workplace problem.

A study by the Australian Centre for Industrial Relations Research and Training (ACIRRT) found mature age workers were perceived at:

*“One level ... as being more experienced and mature, having a better work ethic, being more committed to their jobs, and being more reliable and loyal (as evidenced by their lower rates of absenteeism and turnover). However, they can also be perceived as inflexible and rigid, with fewer abilities (physical and psychological), unreceptive to new technology, more resistant to organisational change, lacking appropriate skills, difficult to retrain, and lacking energy and enthusiasm.”* (Pickersgill et al. 1996)

Other perceptions employers have of mature age workers are that they are less innovative and creative, have higher accident rates, and block the career paths of younger people. Older workers are also faced with changing workplace cultures that value adaptability and flexibility over longevity and commitment. This culture shift finds some employers prefer a younger person who has had a varied employment history to someone who has a long history with only one employer.

A preference for younger workers may be related to their, be it actual or perceived, lower overall cost of employment. That is, although wages may be similar, the on-costs for a mature age worker may be higher because of long service leave, a bank of unused sick leave and/or recreation leave. Although mandatory retirement has been abolished in most occupations, some mature workers and employers continue to expect older workers to retire by the age of 65 years.

Accordingly, changing employer perceptions about mature age workers is critical if older workers are to fully participate in the workforce. On a more positive note, as the population ages and labour force growth slows, non-job related assumptions and stereotypes are likely to have less weight in recruitment decisions, leading to more merit-based outcomes. Nevertheless, encouraging people to stay in the labour force at an older age requires community acknowledgement and acceptance that mature age workers have much to contribute. However, mature age people too need to recognise the importance of lifelong learning in maintaining and updating their skills and adapting their experience to an evolving workplace or to a new occupation. Further, any response to raise participation among older

people should be formulated in a manner that ensures an age-inclusive society, rather than promote differences between old and young people.

Further research is needed to understand employer perceptions of older people to determine if the current reported difficulties faced by mature age people in obtaining or retaining employment are related to a mis-match of skills, are based on stereotypes of older people or reflect any financial disincentive due to relative costs of employment.

### **2.3.5 Access to training and impact of new technology**

Lifelong learning can enhance the prospects of mature age people to obtain and retain employment. Studies show that exposure to continuous training contributes to on-going employability and reduces skill obsolescence — one reason for mature aged workers to be considered less employable (OECD 1996b). For instance, the OECD (2004) reports that differences in training rates can explain up to 40 per cent of the cross-country variation in employment and participation rates. Accordingly, all workers, regardless of age, need to upgrade their skills on an on-going basis to be productive in a rapidly changing knowledge-based economy

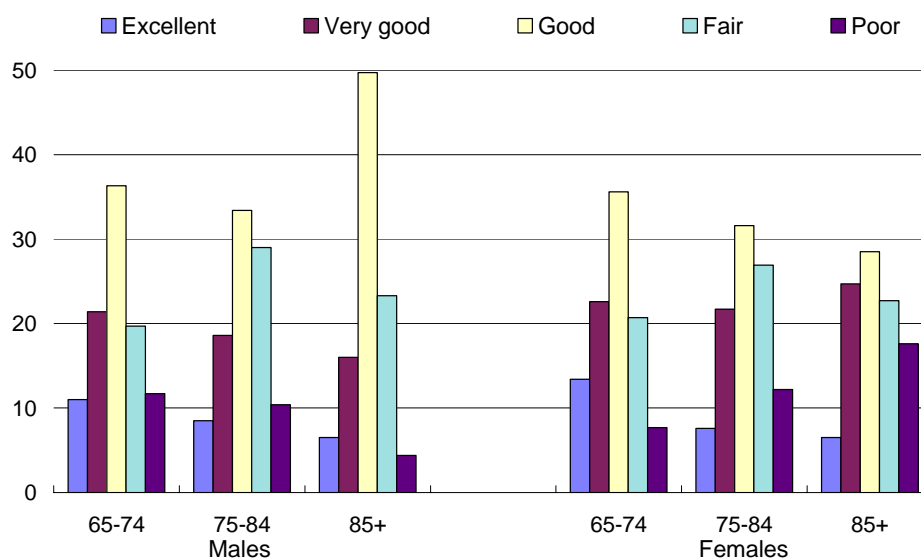
The OECD (1996a, 1996b, 1998 and 2000) has emphasised the need for lifelong learning, so that workers maintain and increase their skills and productive capacity as they grow older. Lifelong learning can facilitate the adjustment of workers' skills to the needs of the market. It may improve the attachment of mature age workers to the labour market and may counter any displacement that older workers may feel in the face of rapidly changing technology and production methods.

Despite the advantages of a lifelong learning approach, employers may see the return to the investment in training mature age workers as being less certain than their investment in training younger workers because older workers have a shorter period of service remaining, because older workers may not have the low-wage offset that is usually associated with training young workers or because employers question the learning ability of older workers (Auer and Fortuny 2000). In these cases, employers may favour the replacement of mature age workers rather than offering training to assist older workers to acquire new skills. However, this has to be balanced against higher job turnover among younger workers which employers may regard as a risk on their return to investment in training. For instance, evidence suggests that a young worker is five times more likely to change jobs than a mature age worker (Kern 1990).

### **2.3.6 Health and safety**

Health is an important factor in the labour force participation decision, and may in some circumstances outweigh any other consideration. There is the view that the health status of the population is generally improving, which suggests some scope for higher age-specific participation rates in the future. Self-reported health status still declines with age, although in the 65 to 74 year age group only 11.7 per cent of males and 7.7 per cent of females report their health as poor (AIHW 2004) (Figure 2.6). (See Attachment 2 for an overview of the health status of Queenslanders.)

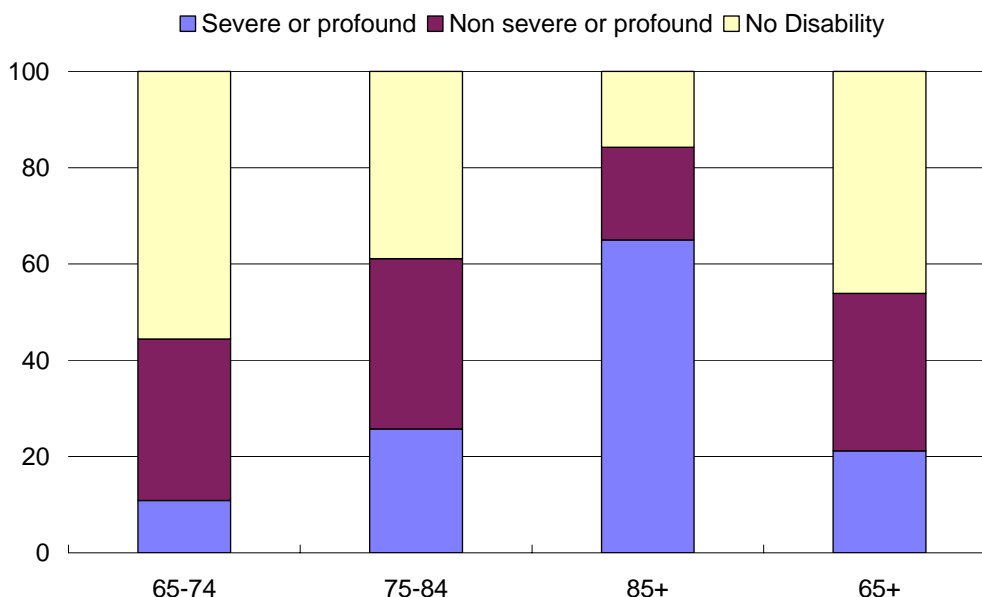
**Figure 2.6. Self assessed health status by age and gender, Australia**  
(proportion of persons in age group, per cent)



Source: Australian Bureau of Statistics, National Health Survey

The level of disability among mature age persons increases with age. Figure 2.7 shows that over 80 per cent of all Australians aged 85 years and over in 1998 reported a disability, yet over half of those aged 65 to 74 years of age had no disability and close to 90 per cent have either no disability or a mild or moderate disability (AIHW 2004).<sup>5</sup>

**Figure 2.7. Persons with a disability by age group, 1998**  
(proportion of persons in age group, per cent)



Source: Australian Institute of Health and Welfare (2004)

<sup>5</sup> As defined by the ABS, where a person requires help with a core activity (communication, mobility and self-care) they are classified as having a profound and severe disability, whereas a person who does not require help, but has difficulty, with a core activity is classified as having a moderate disability. A person with a mild disability needs no help and has no difficulty with any of the core activities, but may use an aid or equipment or have some difficulty with some daily activities.

In general, disability does not preclude participation in the labour force, although employment rates for working age disabled people are nearly 30 percentage points lower, on average, than for non-disabled people (OECD 2003). However, even for those with mild-to-moderate disability, recent technological advances are lowering barriers to labour force participation. More accessible workplaces, computer monitors that accommodate less acute eyesight and communications technology that overcomes hearing impairments all bode well for the participation, safety, comfort and productivity of mature age workers (Robson 2001).

A related issue affecting labour force participation among mature age workers is workplace health and safety. European countries are leading the way in both researching and addressing workplace health and safety issues facing an ageing workforce. The Finnish Institute of Occupational Health has researched the most significant factors in improving work ability, which may be relevant in the Australian context.

There is a continuing perception that mature aged workers need assistance to remain in the workforce because they are vulnerable to workplace injuries and illnesses. Australian and international evidence shows that mature aged workers are no more likely to be injured than younger workers, but take longer to recover and return to work following injury. Analysis of WorkCover data nationally shows that although workers aged 50 years and over do not constitute the most common age cohort for work injuries (this being the 40-49 age cohort), the cost of older workers' injuries to WorkCover exceeds that of workers aged less than 50 years. Queensland workers' compensation claims data confirm a similar pattern. Queensland data show that the incidence of claims actually declines with age after peaking for the 20-24 year age group. However, the average cost of claims increases with each age group e.g. \$3,400 for 15-19 year olds compared with \$8,900 for 55-64 year olds.

As the population ages, understanding the true risk profile of older workers and responding to those risks will assume increased importance:

- Further research is needed to determine what industry mix mature aged workers will occupy over the next 50 years and to examine injury and illness trends of mature aged in such industries.
- The issue of how older workers cope with the physical demands of some types of work requires further research. In the past, older workers may have been shielded from physical work by accepting light duties (European Foundation 1997). However, in an ageing workforce, such opportunities may become scarce. Older workers may also face problems with work intensification. So unless workplace health and safety issues are addressed there will potentially be excess demand and skill shortages for jobs that are physically demanding or intensive (Paoli 1994).
- Further research is required to identify strategies and policies, such issues as job adaptation, health promotion and injury prevention, to assist older people to continue participating in the labour force.

### **2.3.7 Access to transport and housing**

Inadequate access to transport and the lack of appropriate housing can present a barrier to labour force participation. As most workers commute outside their neighbourhoods to access employment, the availability of public transport, especially for those without ready access to a car, is clearly important in facilitating access to the labour market. Similarly, secure,



affordable, appropriately located housing can provide a stable base for people to find a job, undertake study and training, use public transport, raise children, participate in family and community activities, and access local services.

As noted by the OECD (2001), older people are likely to experience age-related difficulties in using public transport before experiencing difficulties in driving. This indicates the need for age-friendly transport alternatives to the private motor vehicle to support the labour force participation of older workers.

Access to housing may not directly affect the labour force participation decision of older people. However, Queensland Government consultation has identified emerging concerns in relation to the impact of segregating older people from the community in purpose-built housing, which is often located in outer urban areas with poor transport and related infrastructure. The Australian Housing and Urban Research Institute and The Myer Foundation have addressed a range of issues associated with the housing needs of an ageing population.

## 2.4 The implications of ageing for the public sector workforce

The Queensland Government will be affected by an ageing population in two major ways — through changes in the level and pattern of demand for government provided services (see Chapter 4) and through the ageing of its own workforce. Ageing is likely to be more pronounced in the Queensland public sector, with nearly 42 per cent of the workforce aged over 45 years in 2002-03, compared with 35 per cent of persons employed in Queensland as a whole (Figure 2.8). By 2023, around three-quarters of current State public sector employees may be aged 45 years or more.

**Figure 2.8. Age profile of employed persons, Queensland, 2002-03**  
(Proportion of employed persons in age group, per cent)



Sources: Australian Bureau of Statistics Labour Force Survey; Queensland Public Service Commissioner (2003)

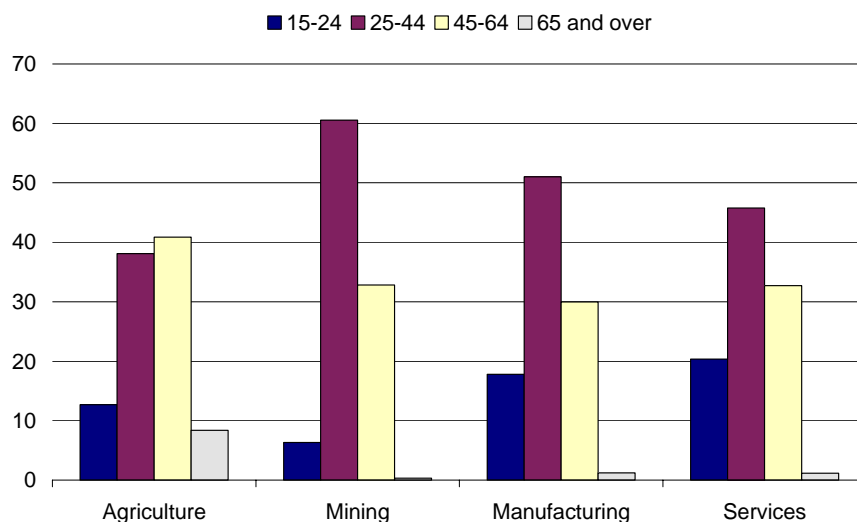
Awareness of ageing has been identified as an issue for Queensland Government departments and agencies, and strategies to encourage the extended participation of mature aged workers are being developed. As noted in Attachment 1, the Queensland Government is pursuing

collaborative work with The University of Queensland to develop projections of the public sector workforce to support workforce planning and policy development.

## 2.5 The implications of ageing for industry

The age profile of employment by industry in Queensland suggests ageing will have a differential impact across the State's industries. Figure 2.9 shows that the agriculture, forestry and fishing industry has a higher share of mature age workers than other sectors, with almost half of those employed in the industry aged over 44 years, compared with 34 per cent for all industries.

**Figure 2.9. Age profile of industry, Queensland, 2003-04**  
(Proportion of employed persons by age cohort in industry, per cent)



Source: Australian Bureau of Statistics, Cat. No. 6202.0

Whybrow and Whiting (2004) found that, in 2001, people aged 65 years or older accounted for 8.9 per cent of employment in the State's primary industries, compared with 1.5 per cent of employment in other industries. The study also found two of Queensland's major agricultural industries (sugar cane and beef cattle) had a relatively high proportion of farmers aged 65 years and over. This age profile suggests there may be some major adjustments to industry structure and management within primary industries in the future as older farmers retire.

Variation in retention rates across occupations and industry could relate to a number of factors including the physical demands of employment, lifestyle preference, job satisfaction, professional self-actualisation and industry/family commitments. There may also be very different factors which shape the retirement decision of the self-employed. Research into reasons for retirement by occupation and industry could be a useful area of study in informing policies to encourage higher rates of labour force participation among mature age workers. Moreover, with larger employers potentially better placed to respond to an ageing workforce, the implications of ageing for small business could also be examined.

An ageing population is likely to change the patterns of demand for goods and services, with possible implications for the State's industrial structure and growth of employment opportunities. Much of the expected change in the industrial structure is likely to occur within the services sector, reflecting the demands population ageing will place on the health

system – including hospitals and community health (see Chapter 4). In Queensland, the older tourist market (the so-called grey market) is a growth area, particularly in the self-drive tourism sector. Accordingly, an important area of research is to identify how the consumption patterns of the aged differ from the rest of the population. In particular, the impact of ageing on the transient population and the associated demand for infrastructure and services deserves study.

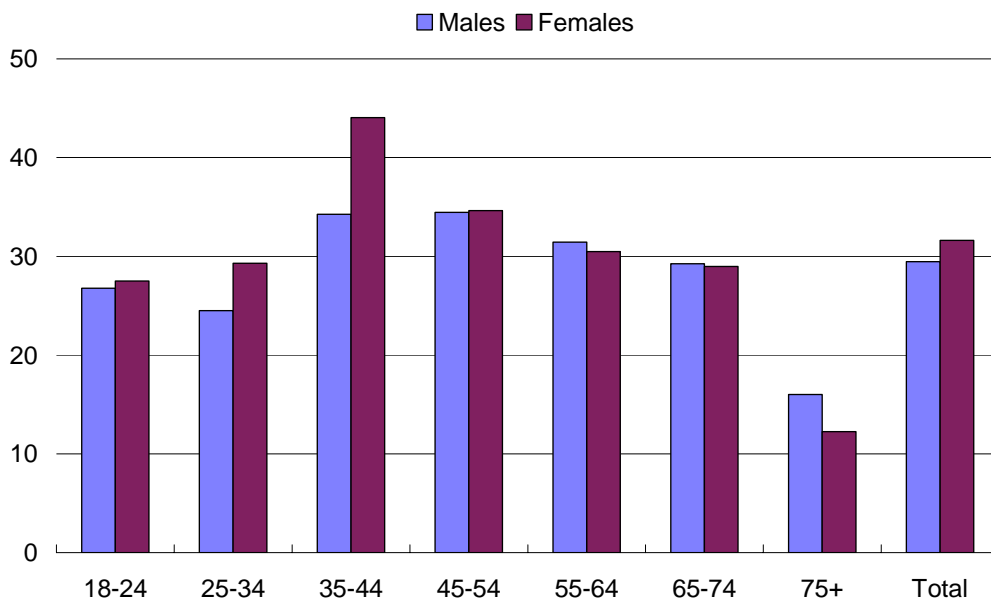
## 2.6 The implications of ageing for unpaid work

The capacity of older people to become involved in unpaid work, such as volunteering and caring, may increase as their attachment to the labour force declines. However, the impact of ageing on care and volunteer services will also depend on the health and choices made by older people in the future.

### 2.6.1 Volunteering

It is important to note that traits that lead to volunteering are those of a cohort rather than an age group, so it is not necessarily the volunteering and caring rates of those currently aged 65 years and over that are of most interest. Figure 2.10 shows that in 2000 those aged between 35 and 54 years, that is, those people born between 1946 and 1965 (the ‘baby-boomers’) recorded the highest rates of volunteerism. Should the ‘baby-boomer’ cohort continue to volunteer at similar rates as they age, the contribution from older volunteers may increase in the future. However, a further uncertainty is how rates of volunteerism among the younger age cohorts will change as they age.

**Figure 2.10. Volunteers by sex and age group, Australia, 2000**  
(Proportion of persons in sex and age group, per cent)



Source: Australian Bureau of Statistics, Cat. No. 4441.0

Recent research on the volunteer motivations of the baby boomers has been documented in *Boomnet — Capturing the Baby Boomer Volunteers* (Western Australian Government) and *Reinventing Ageing — Baby Boomers and Civic Engagement* (Harvard School of Public Health 2004).

The rate of labour force participation among volunteers is remarkably high, with 72.8 per cent of all Queensland volunteers in 2000 participating in the labour force (nationally, 73.7 per cent). This suggests that labour force participation does not prevent participation in volunteering. However, an increase in labour force participation among older age cohorts may affect the provision of voluntary services within the community, particularly if there are not flexible work arrangements in place to enable a balance between work and volunteer activities.

Understanding the potential impact of ageing and changing labour force participation on the pool of available volunteers is particularly important within government. For instance, in Queensland, the Department of Emergency Services is heavily dependent on the involvement of volunteers in responding to disaster situations. The Queensland Environmental Protection Agency also manages 22 volunteer schemes with volunteers assisting in wide-variety of activities from high-impact physical duties (such as land management) to other activities, such as wildlife care.

### **2.6.2 Caring**

Ageing may affect both the demand for care and the supply of carers. Caring encompasses assistance and/or supervision for the aged, people with a disability and children and can be divided into formal and informal care. Formal care is provided by members of the paid labour force and informal care is the voluntary provision of unpaid assistance, excluding care provided under the auspices of a voluntary organisation.<sup>6</sup> The majority of Australia's care is provided by informal carers. The Australian Institute of Health and Welfare (AIHW) (2003) estimates that informal carers represent over 80 per cent of full-time equivalent employment and contribute around two-thirds of the value of resources in community welfare services.

Carers Australia has identified that the bulk of aged care is provided at home by unpaid carers, with 711,000 people aged over 65 living at home supported by a carer (ABS 1998), compared with only 126,000 people living in residential aged care, of whom 75 per cent are aged 80 years or over (AIHW 2002). As has been noted earlier in this chapter, disability rates increase with age and are much higher for people aged over 84 years. Consequently, it is likely that the number of older people requiring care will increase with the ageing of the population.

A study by NATSEM (National Centre for Social and Economic Modelling) concluded that the number of older people requiring care is likely to increase at an annual average rate of around 3 per cent over the period 2001 to 2031 (Percival and Kelly 2004). NATSEM also found that, although the numbers of people likely to care for older persons will increase, growth in carers will increase at a slower rate, highlighting the potential for a 'caring deficit'.

Older carers who are caring for their adult sons and daughters with a lifelong disability also face a range of issues relating to the ongoing care and accommodation of their children. A report by AIHW (2002) found that these carers are frequently not in a position to choose to retire from their role as primary carer. In Queensland, it is estimated that around 90 per cent of disability services are provided by family and friends, suggesting that the resource implications associated with the ageing of family carers may be significant.

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<sup>6</sup> Those who are caring for a disabled person or a child may be eligible for a Commonwealth welfare payment (age pension, carer payment, child care benefit).

Queensland research indicates the life expectancy of those people with a lifelong disability has increased markedly due to medical advances and changed social conditions. For instance, in 1931, the life expectancy of those with a lifelong disability was just 22 years, compared with 59 years and 66 years in 1976 and 1997 respectively (Bigby 2002). Importantly, if the disabled have no access to support, either paid or unpaid, they will require aged care institutional support. However, at the present time, it is very difficult for a person with a lifelong disability to gain a place in an aged care facility.

Older relatives, including grandparents, often care for children and young people, including those whom may have been harmed, or who are at risk of harm in their families, on a longer-term basis. Many vulnerable families rely on their extended family networks as their primary source of support on a full-time basis. Recent estimates suggest that as many as 4,000 older Queenslanders may be grandparenting full-time, independently of the child protection system. Further, the provision of care to children and young people who are subject to the guardianship or custody of the State is primarily provided by a network of foster carers. Anecdotal evidence suggests that the average age of foster carers is increasing and that younger families are increasingly difficult to recruit or maintain as foster carers.

Social changes, particularly those relating to changing family structure and female workforce participation, which may restrict access to family support, will also affect how the health and aged care system might need to respond to population ageing. The provision of care to older people living alone in isolated and remote locations is also an important consideration. The potential for the reduced availability of informal carers, because of these social changes for example, may increase demand for both publicly and privately funded care services.

As has occurred with other services, caring may increasingly change from being a 'non-market' service reliant on unpaid carers to a service provided by the paid labour force. The increased financial capacity of older persons may allow them to purchase the range of services they require. Care services for older persons may also be purchased by those who may otherwise have been a carer, but choose to remain in the labour force.

The National Disability Administrators will be undertaking a national research and development project commencing in late 2004 on the issues and supports required by ageing carers, the scope of the problem and the potential economic impact across jurisdictions. Disability Services Queensland and the Victorian Government are lead agencies for this project.

### 3. The Impact of Ageing on Labour Productivity and Economic Growth

#### Key points

- Population ageing is one of several factors that will influence Queensland's future productivity and growth performance. Productivity growth has two key sources — capital deepening and multifactor productivity growth. Although influenced by workforce quality, projections of productivity growth do not appear very sensitive to reasonable variations in the assumed age-productivity profile.
- The outlook for savings, investment, interest rates, and global capital flows is extremely uncertain, making it difficult to predict the extent of capital deepening as a driver of productivity growth over the next 40 years.
- Multifactor productivity (MFP) growth is related to invention, entrepreneurship, and innovation diffusion. While there is little empirical evidence linking age with invention and entrepreneurship, there is some evidence to suggest that older people have been slower to adopt new technologies. However, the extent to which this reflects cohort effects associated with different levels of education and participation in paid work is a key area of uncertainty.
- In Queensland, future living standards are likely to continue to increase, despite the impact of population ageing, albeit at a slower pace compared with past trends.

#### Areas for further research

- identify whether broad assumptions for capital deepening in Australia can be inferred to improve modelling of the economic impact of ageing;
- identify links between age and creativity or inventiveness and age and entrepreneurship; and
- identify implications of increasing average levels of human capital for future productivity growth, and evidence or projections of how the incentives to acquire human capital might change in the future.

The pace of future economic growth will depend on the rate at which the labour force grows, and on the growth of labour productivity. The impact of ageing on labour force growth was discussed in the previous chapter.

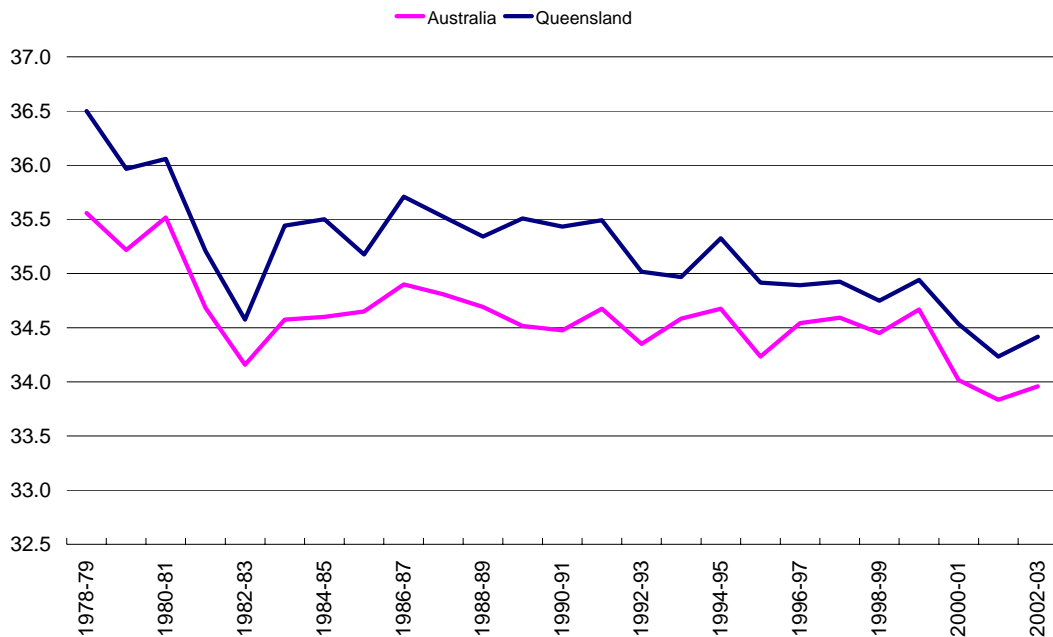
For the purposes of this submission, labour productivity is defined as output per worker, which is the product of average hours worked and output per hour worked. In turn, output per hour worked is the product of capital deepening and multifactor productivity.

This chapter examines the potential impact of population ageing on each of these factors underpinning productivity growth, before assessing the implications of ageing for economic growth and standards of living. Important areas of research the Productivity Commission could address in its study are also identified.

### 3.1 Average hours worked

Over the past three decades, the composition of employment has evolved towards increasing part-time and casual work (VandenHeuvel and Wooden 2000) — a factor in the decline of average hours worked by employed persons (Figure 3.1).

**Figure 3.1. Average Hours Worked per Week, Queensland and Australia, 1978-79 to 2002-03**  
(hours per week)



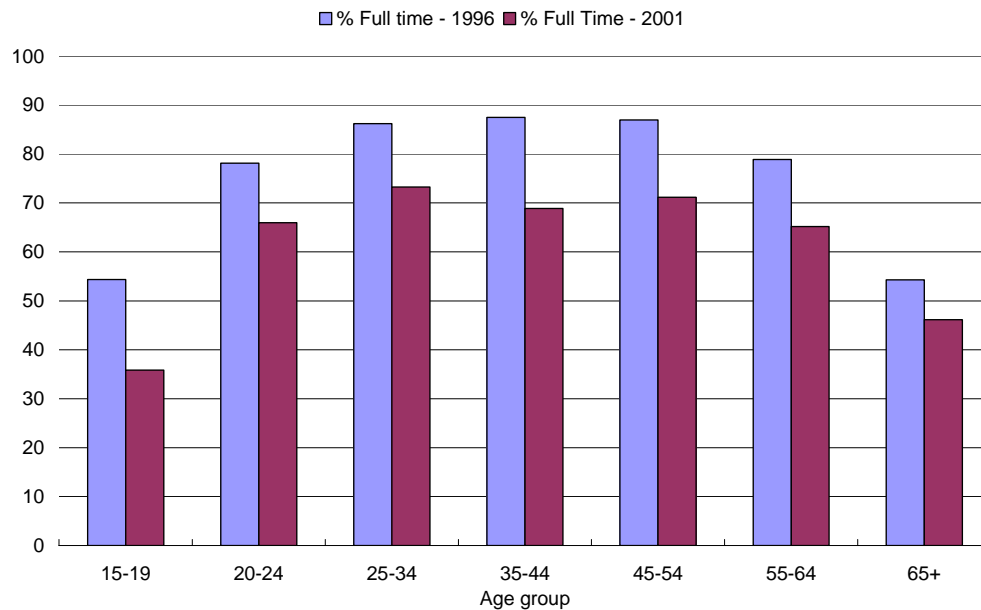
Source: Australian Bureau of Statistics, Labour Force Statistics

Although average hours worked in Queensland have historically been higher than the national average, they have also declined more rapidly (-0.24 per cent versus -0.19 per cent per annum), which has caused the two series to converge over the course of the 1980s and 1990s. The increase in the proportion of part-time work has been linked to increased workforce participation by females, and to the shift in the industrial composition of the economy towards industries where part-time work is more prevalent, such as services. Both of these drivers seem likely to continue.

Figure 3.2 shows the declining prevalence of full-time employment for all age groups over the intercensal period, 1996 to 2001. Excluding the 15 to 19 year age cohort, for whom the competing demands of education have a significant impact, the decline in the full-time employment proportion does not appear to be age-specific.

Figure 3.2 also sheds some light on the age profile of working hours. It can be seen that, following the 'education phase' at ages 15-19, the full-time employment proportion is relatively constant across the ages of 20 to 64, only tailing off after age 65. Population ageing would therefore be expected to affect overall average working hours mainly through its impacts on the 'tails' of the distribution, that is, the 15-19 and 65+ cohorts.

**Figure 3.2. Percentage of the labour force in, or seeking, full-time employment, by age group, 1996 and 2001, Australia**



Source: Australian Bureau of Statistics, Cat. No. 2017.0

However, the impacts on these two cohorts are likely to oppose each other. With continued below-replacement fertility, the younger cohorts will become relatively smaller, which will tend to increase average working hours, other factors aside. On the other hand, the increased size of the 65+ cohort will tend to reduce average working hours.

Hence, the net impact of population ageing on average working hours might be very small if the current working hours age profile is maintained. However, it is possible population ageing might have indirect effects on the working hours age profile. For example, an increased emphasis on human capital acquisition might drive a fall in working hours for the 20 to 24 cohort. Similarly, in a knowledge-based economy people might wish to (or have to) retrain or re-enter the 'education phase' a number of times in their working lives, thus reducing working hours across a number of age cohorts.

## 3.2 Output per hour worked

The growth of output per hour worked has two sources — an increase in the quantity of capital per worker ('capital deepening') and an increase in the volume of output derived from a given quantity of labour and capital ('multifactor productivity' or MFP). A key issue influencing both capital deepening and MFP growth is the quality of the workforce. These issues are discussed below.

### 3.2.1 Workforce quality

The debate about the age-productivity relationship focuses on the respective qualities of older and younger workers. The factors that tend to distinguish older workers from younger workers are, firstly, the effects of biological ageing on older workers' physical and mental capabilities, and secondly, experience and skills that have accrued to older workers over time. These two factors tend to offset each other, although the extent to which they do so is very

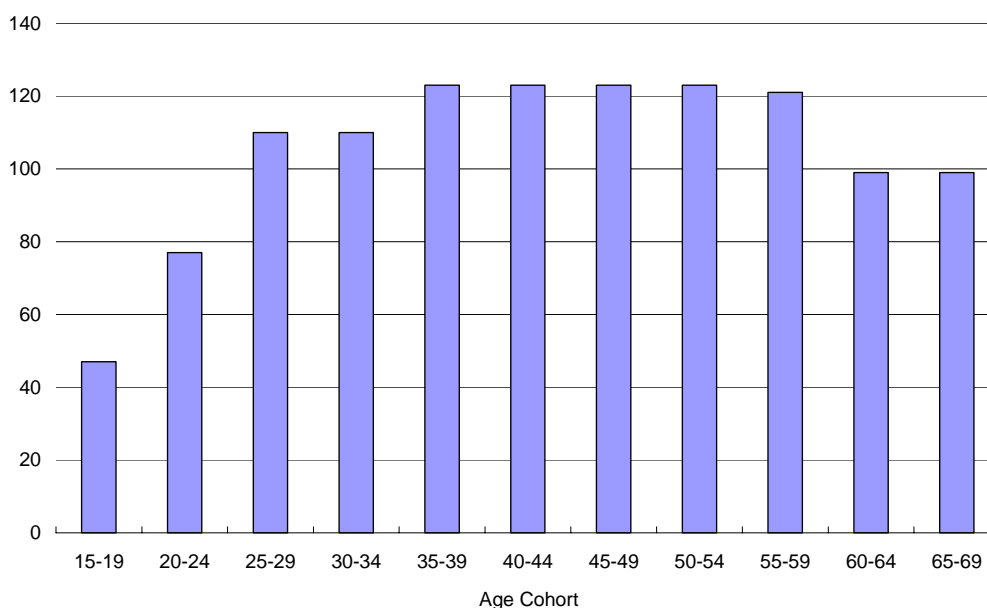


context-dependent. In jobs with a high proportion of hard physical labour, older workers will tend to be less productive than younger workers, on average. Where mental capacities are important, research indicates a slow decline in reasoning ability with age, but an increased capacity for intuition, strategic thinking, and effectiveness in a complex environment — capacities that are facilitated by experience (Jackson 1998).

A risk faced by mature age workers is that their key source of potential advantage (that is, their experience) depreciates in the face of technical change. Again, the outcomes vary with occupation. Older workers compete best in occupations where skills can only be acquired slowly, and depreciate slowly. Where greater rates of technical change are involved, the skills and experience of older workers tend to depreciate significantly, if not supplemented by education and training. Where technical change is very rapid, workers of all ages need to update their knowledge and skills on a regular basis. In these circumstances, older workers are not particularly disadvantaged (Jackson 1998).

In order to quantify the net impact of all of these factors, some authors (for example, Guest and McDonald 2001) have used age-specific earnings as a proxy for age-specific productivity. A typical age profile of earnings is shown in Figure 3.3.

**Figure 3.3. Age profile of male weekly earnings, Australia, 1997**  
(per cent of mean weekly earnings)



Source: Guest and McDonald (2001)

The use of earnings profiles in this manner has been criticised. Bacon (1999) claims that the decline in earnings in older ages is possibly the result of selection bias, rather than a decline in worker productivity. For example, if highly-productive, high-earning workers were more likely to exit the workforce early, then it follows that the remaining pool of older workers would tend to be less productive on average. Bacon highlights the difference between cross-sectional earnings profiles (as in Figure 3.3) and longitudinal earnings profiles, which typically show no decline in earnings at older ages. However, it is not clear that this issue invalidates the use of cross-sectional profiles. If the decline in average earnings in the older age cohorts reflects the lower average productivity of the older labour force, then this is surely an important factor when considering the aggregate productivity implications of an older workforce.

Another potential limitation is that the higher earnings across ages 35 to 59 might reflect factors other than productivity. For example, pay structures that reward loyalty and seniority might not be closely aligned with worker productivity (Dixon 2003; Jackson 1998; OECD 1998). Additionally, the aggregate picture provided by Figure 3.3 conceals the impact of factors such as education and occupation. For example, the OECD (1998) found that controlling for educational attainment weakens the tendency for the earnings profile to turn down at the older ages.

To gauge the importance of this issue, the profile in Figure 3.3 and the corresponding female profile were combined with the labour force projections for the medium scenario described in Chapter 2 to derive an age-weighted productivity index. The results show a positive, but very small, projected ageing impact on productivity growth. Between now and 2041-42, the aggregate impact of ageing on productivity was only 2 per cent, or a compound annual growth rate of 0.05 per cent. This is insignificant when compared with historical productivity growth rates of around 1 to 2 per cent per annum.

Another of the many factors influencing workforce quality is educational attainment. The rate of increase in educational attainment in the coming decades will depend on two factors — the rate of labour force growth and trends in per-capita participation in education and training (Draca et al. 2003). As discussed in Chapter 2, labour force growth is projected to slow over the next 40 years, as the relative size of the younger cohorts declines. This implies that successive new cohorts entering the workforce will have progressively less impact on the average educational attainment of the workforce.

A factor that might offset these cohort-size effects is the effect of increasing participation in education and training on average levels of educational attainment. For example, the proportion of people aged 25 to 34 years (that is, the youngest cohort that can be said to be largely past the education phase) with a Bachelor degree or higher qualification has risen steadily from 13.1 per cent in 1993 to 25.0 per cent in 2003 (ABS 6227.0). Hence, the more recent cohorts will drive up average educational attainment, and workforce quality, as they progress through the age spectrum.

### **3.2.2 Capital deepening**

In Australia, capital deepening has been a relatively minor contributor to the growth of output per worker since the mid-1980s. In Queensland, the capital-to-labour ratio actually declined in the late 1980s — the only state where this occurred. In recent years, however, capital deepening has made a positive contribution to the growth of output per worker in Queensland, in line with the rest of Australia (Louca 2003).

In the future, the quantity of capital per worker will depend on the quality of labour (more capital can be combined with higher skills), the conditions governing investment, and the industry structure.

A key variable influencing future investment will be interest rates, which will be driven by the supply of (and competition for) savings, which may be sourced domestically or overseas. In a closed economy, the ageing of the population would be expected to initially drive an increase in savings in the short-to-medium term, as the baby boomers build up their retirement nest eggs. The increased savings would then feed into lower interest rates, and

increased investment and capital deepening. However, over the long term, the baby boomers, once retired, could potentially dissave in order to finance consumption in retirement.<sup>7</sup> Additionally, governments might also dissave, faced with increased costs for health care and pensions. This dissaving would tend to raise interest rates and reduce investment and capital deepening over the longer term.

However, for an open economy (like Australia's), the availability of funds for investment is primarily governed by global capital markets, and therefore depends on worldwide savings and rates of return. For this reason, the demographic *relativities* between trading partners will be important, that is, where each country is on the saving-dissaving cycle (Group of Ten 1998).

Overall, the effect of ageing and slowing population growth on world interest rates will depend on the net impact of the potential slowing of investment (from the slowing of labour force growth) and the slowing of savings (from the lifecycle effect). If the investment effect is stronger, world interest rates will tend to fall, whereas if the savings effect is stronger, rates will tend to rise. A 1998 study by the OECD, using a general equilibrium, multi-country framework, calculated a stronger savings effect, such that world interest rates were projected to rise by half a percentage point by 2050. In contrast, a similar study by Guest and McDonald (2004) projects a decline in world interest rates.

It should be noted that modelling results of this type depend critically on the assumed sensitivity of savings to ageing. Empirical evidence on this sensitivity is mixed, with more recent estimates tending to show a weaker dissaving effect (Richardson 1997).

Another factor that might influence the rate of capital deepening is the evolution of the industry structure towards labour-intensive services (Stephenson and Scobie 2002). This is particularly relevant if the size of government was to increase. However, as with slowing workforce growth, the end result also depends on the availability of domestic and foreign savings.

Overall, the outlook for savings, investment, interest rates, and global capital flows is extremely uncertain, which makes it difficult to predict the extent of capital deepening as a driver of productivity growth over the next 40 years. Robust assumptions for capital deepening can only be derived by modelling the influence of differential saving rates and investment requirements across countries or regions. Hence, the Productivity Commission should arguably undertake such modelling, or at least survey the empirical literature to identify whether broad assumptions for capital deepening in Australia can be inferred.<sup>8</sup>

### 3.2.3 Multifactor productivity growth

Multifactor productivity (MFP) growth is related to invention, entrepreneurship, and innovation diffusion. The literature on population ageing contains very little discussion of these factors. Guest and McDonald (2002, pp. 33-34) provide a brief but useful summary of the issues and literature.

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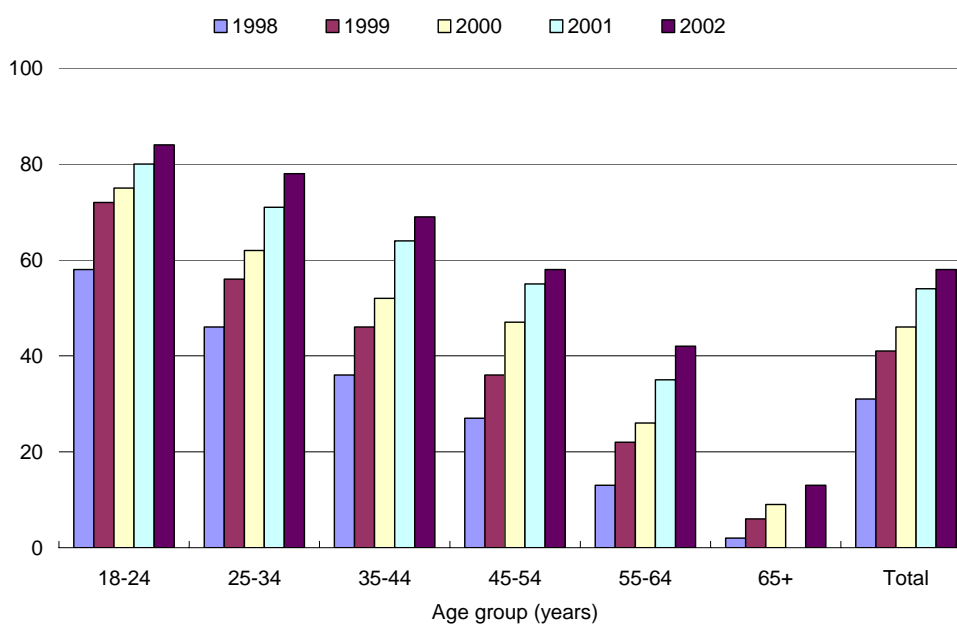
<sup>7</sup> This assumes that savings behaviour conforms to the "life cycle" hypothesis, in which savings are accumulated prior to retirement, and then unwound during retirement.

<sup>8</sup> Professor Ross Guest of Griffith University has recently developed such a world model with an Oceania sector, which might provide useful results in the Australian context.

In the context of an ageing population, the relationship between age and inventiveness is a key area of inquiry. Baumol (2004), while not directly addressing the age factor, raises the broad issue of what types of people and firms generate ‘breakthrough’ versus ‘incremental’ innovations. He notes that high levels of human capital (which may be more likely to exist in mature age people) are more conducive to incremental improvement, while the more revolutionary innovations have often been contributed by people with only a basic level of education (and who are therefore more likely to be young). Both types of innovation are necessary, as it is the incremental improvements to a raw revolutionary idea that eventually deliver most of the benefits. Baumol cites the evolution of the airplane as an example of this. The key question is — will the changing balance of younger and older people in the population have an impact on innovation?

Additionally, raw innovations of any type must be brought to market before their benefits can be realised — this is the role of entrepreneurs. The difficulty is that investment in bringing a new idea to market often must occur without concrete proof that profits will follow. Hence, there are considerable risks in entrepreneurship. Again, there appears to be no readily available evidence on age and entrepreneurship. On one hand, it might be expected that attitudes to risk will be important, with older people perhaps tending to be more averse to financial risk because of limitations to the time available to recover from a catastrophic loss. On the other hand, older people tend to have better skills, better understanding of the target industry through experience, and greater personal resources. Hence, the potentially higher risk aversion of older people may be offset by the fact that the risks they face are less, on average, than those faced by younger people attempting to get a new business off the ground. Additionally, this line of argument is only applicable when the entrepreneur in question can be identified at a personal level. Many new products and services are brought to market by large firms, which makes potential links with demographic factors much less clear.

**Figure 3.4. Internet usage by age, Australia, 2001-02**  
(per cent)



Source: Australian Bureau of Statistics, Cat. No. 8146.0

One link between innovation and age that has been quantified is the relationship between age and the adoption of new technologies. A recent example is the adoption of the internet. Figure 3.4 shows age-specific internet usage, with usage declining in an almost linear fashion with age.

Similar age profiles have been observed with the use of computers and automatic teller machines. Clearly the implications are that, other factors remaining the same, new technologies may diffuse more slowly as the population ages, implying a slowing of productivity growth from this source. However, to the extent that the age profile of technology usage can be attributed to differences in education levels, participation in paid work, and the possible failure of innovating firms to cater for the learning needs of older people, the potential impact on future productivity growth will not be as great as current age profiles suggest. Given the importance of technology diffusion to productivity growth, lifelong learning will play a vital role in providing an ageing population with the skills and technological literacy required in an environment of rapid technological change. (Lifelong learning is discussed in more detail in Chapter 2.)

Since there is limited research linking age and creativity (or inventiveness) and on the relationship between age and entrepreneurship, further work in this area would assist in better understanding the potential impact of ageing on MFP. Of additional benefit would be further research on the implications of increasing average levels of human capital for future productivity growth, and some assessment of how incentives to acquire human capital might change as the population ages.

A final, important factor for long-term MFP growth is how changes to the industry structure of the economy over the long term might affect MFP growth. If industry-specific MFP growth can be taken to be exogenous, then a change in the industry structure has clear implications for aggregate MFP growth. If, however, higher relative demand for particular goods in the future induces higher MFP growth in those sectors, then the outcome for aggregate MFP growth is less clear. Additionally, an important structural factor often discussed in the economic growth literature is the size and composition of the government sector. Population ageing is likely to put pressure on governments to spend more, resulting in higher deadweight losses from taxation. The size of such losses would depend in part on which taxes were raised to accommodate the additional spending. Additionally, the composition of government spending is likely to shift towards areas with no direct benefit for economic growth, such as pensions and aged care.<sup>9</sup>

### **3.3 The potential impact of ageing on living standards**

Historically, labour productivity has been the most important factor in raising real per capita incomes in Australia. Over the decade to 2002-03, Australia recorded average annual growth in per capita incomes of 2.6 per cent, of which 1.8 percentage points were due to labour productivity growth, 0.5 percentage points to falling unemployment, and 0.2 percentage points from rising aggregate participation.

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<sup>9</sup> See, for example, Bleaney et al. (2001), who distinguish between 'productive' and 'unproductive' government spending, and 'distortionary' and 'non-distortionary' taxes, in assessing the implications of government size for economic growth.

However, in the decades to come, population ageing and, in particular, the retirement of the relatively large baby boomer cohorts, would seem to almost guarantee that labour force participation will make a negative contribution to future growth in per capita incomes. While it is highly likely that productivity growth will ensure that Queenslanders' standard of living will continue to increase, living standards will grow more slowly than in the past, unless the rate of productivity growth exceeds the State's average historical performance.

Table 3.1 shows the implications for Queensland's future economic growth for three different scenarios relating to participation and productivity:

- 'Low' scenario — assumes age-specific participation rates remain at current levels and productivity grows at the long-term Australian historical average of 1.75 per cent per annum.

This is a very pessimistic scenario, as it excludes the potential for higher female participation as the more recent female birth cohorts move through the age spectrum. Additionally, the assumed rate of productivity growth is less than that achieved over the last decade in Queensland (around 2 per cent per annum). It can be seen that, despite the pessimistic assumptions underlying the low scenario, per capita income growth remains positive throughout the projection period. The conclusion to be drawn from the low scenario is that the living standards of Queenslanders will continue to improve under any reasonable scenario for participation and productivity.

**Table 3.1. Historical and Projected Growth in Gross State Product**

<b>Decade</b>	<b>Average Real GSP Growth per cent per annum</b>			<b>Average Real per capita GSP Growth per cent per annum</b>		
1990s	4.6			2.5		
	<i>Projected</i>			<i>Projected</i>		
	Low	Medium	High	Low	Medium	High
2000s	3.8	4.3	4.7	1.9	2.4	2.8
2010s	2.8	3.4	4.0	1.4	2.0	2.6
2020s	2.5	2.9	3.5	1.3	1.7	2.3
2030s	2.3	2.7	3.2	1.4	1.8	2.3
2040s	2.1	2.4	3.0	1.4	1.7	2.3

- 'Medium' scenario — incorporates more realistic assumptions about increases in female participation. While age-specific male participation rates are assumed to remain at current levels, age-specific female rates in this scenario are projected to continue to converge on the male rates, although with the ultimate female rates remaining somewhat less than the male rates because of the effects of child bearing. Further, this scenario incorporates a productivity growth assumption (2 per cent per annum) which is more in line with Queensland's recent experience. In this scenario, growth in per capita GSP is significantly higher than in the low scenario, but still moderates to about two-thirds of the rate of growth recorded over the 1990s.
- 'High' scenario — assumes there is some upside to age-specific male participation, particularly in older age groups. (Chapter 2 discusses some of the factors that might bring about such a result.) Additionally, it is assumed productivity grows at the rate experienced in the latter half of the 1990s (2.5 per cent per annum). Under these assumptions, growth in GSP per capita still ultimately slows, but stabilises at a rate that is little different to the experience of the 1990s.

Hence, looking forward, it will be even more important for Australian governments at all levels to work together to facilitate economic outcomes that approach the higher end of the growth profile shown in Table 3.1, so that the impact of ageing on the growth of living standards can be mitigated. The Queensland Government's economic strategy and Smart State vision aim to achieve this (Refer Attachment 3).

## 4. The Fiscal Implications of Ageing

### Key points

- Population ageing may compel governments to adjust budgetary priorities in response to changing needs and preferences. With responsibility for the provision of a number of key services, States will be directly affected by population ageing.
- Health care is the expenditure area of greatest potential for imposing long-term fiscal pressure on the Queensland budget, with its high level of susceptibility to the effects of population ageing being compounded by growing community expectations of high quality care. The introduction of new medical treatments and technologies, and potential labour shortages in the health care industry add other dimensions of fiscal risk.
- Growing demand for expenditure on law and order represents an area of fiscal risk largely limited to the States. Expenditure on education is expected to decline as a share of GSP as school age children decline as a proportion of the population, but increases in educational standards and education participation rates (by both younger and mature Queenslanders) are likely to reduce any capacity for expenditure savings. In fact, in Queensland, the actual number of school age children will continue to increase, as will real expenditure on education.
- Because of the uncertainty of key parameters and the sensitivity of modelling results to the assumptions made, it will be important for the Productivity Commission's analysis of the fiscal implications of ageing to be transparent in its methodology and based on the current consensus on key modelling issues.
- Current intergovernmental arrangements may limit the capacity of the States to respond to the fiscal pressures of population ageing:
  - Vertical fiscal imbalance limits the capacity of the States' own revenue base to finance additional services to meet the demands of an ageing population and will result in States being less advantaged by any expansion of government revenues secured through higher economic growth. The distribution of the fiscal burden between the tiers of government will largely depend on the flow of intergovernmental grants.
  - Shared service sector responsibilities, without adequate mechanisms for cooperation, can reduce the incentives and the capacity for either tier of government to introduce efficiencies that will allow more to be done with less.

### Areas for further research

- assess future health cost pressures and the long-term capacity of the health and aged care systems to remain efficient, equitable and sustainable;
- assess the importance of non-demographic factors that could compound the fiscal effects of population ageing;
- examine the fiscal impact of ageing on local government, using appropriate modelling which is consistent and can be integrated with the modelling developed for the Commonwealth and State governments; and
- assess the effect of higher per capita incomes on government expenditure and capacity and willingness to pay and the scale of net intergenerational inequity that may arise as the population ages.



## 4.1 Overview

All governments facing population ageing will be called on to manage immense social and economic challenges. Population ageing may compel governments to adjust budgetary priorities in the face of changing needs and preferences. Older Australians use some government services, particularly health care, more intensively than do other age groups. At the same time, the ageing of the population is likely to slow revenue growth as a result of moderating economic growth (as discussed in Chapter 3) and shifting consumption patterns.

The fiscal challenge facing Australian governments extends beyond those pressures posed by population ageing, to encompass a number of non-demographic trends, such as growing costs and utilisation rates of publicly provided services. The potential impact of population ageing and these other trends represent diverse areas of risk to the future fiscal positions of governments. Accordingly, it is difficult to predict with any degree of certainty how these pressures will affect government budgets.

Despite this uncertainty, the policy challenges that do arise, will need to be faced by all Australian governments — Commonwealth, state and local — and the integrated nature of our political system requires all Australian governments to work together in responding to them.

## 4.2 The fiscal challenge facing the States

Of recent studies into this issue, the Commonwealth Government's *Intergenerational Report* (IGR) has attracted the most attention. Released as part of the 2002-03 Commonwealth Budget, the IGR assessed potential long-term fiscal pressures on the Commonwealth arising from population ageing and non-demographic expenditure growth. The IGR projected that the gap between federal spending and revenue (the 'fiscal gap') would reach about 5 per cent of GDP by 2041-42, in the absence of corrective policy change. As the IGR was intended as an analysis of the Commonwealth's long-term fiscal position, projections of the potential policy pressures facing other levels of government, particularly State and Territory Governments, were limited.

States have the major responsibility for administering key service areas, such as public education, policing and criminal justice, public transport and roads, and share responsibility for providing public health services with the Commonwealth. While the Commonwealth Government provides significant funding for these services, it is the States that are ultimately responsible for their provision. Accordingly, rather than the States being at the periphery of the changes induced by ageing, the service provision role of the States places them in a pivotal position.

As part of its own analysis of the effects of demographic change, the Queensland Government has developed a number of modelling scenarios to investigate the potential fiscal impact of population ageing on its long-term finances. These scenarios are discussed in Attachment 4.

The results of the scenarios confirm that fiscal projections are highly sensitive to underlying assumptions. It is therefore critically important for the Productivity Commission to be transparent in its methodology and for the analysis to be informed by a research consensus on the key assumptions. If assumptions are adopted for a central scenario, the study should, at a

minimum, provide a sensitivity analysis to examine how the results are influenced by the key parameters.

The following discussion identifies a number of the revenue and spending pressures facing Queensland and draws on results of the scenario analysis provided in Attachment 4.

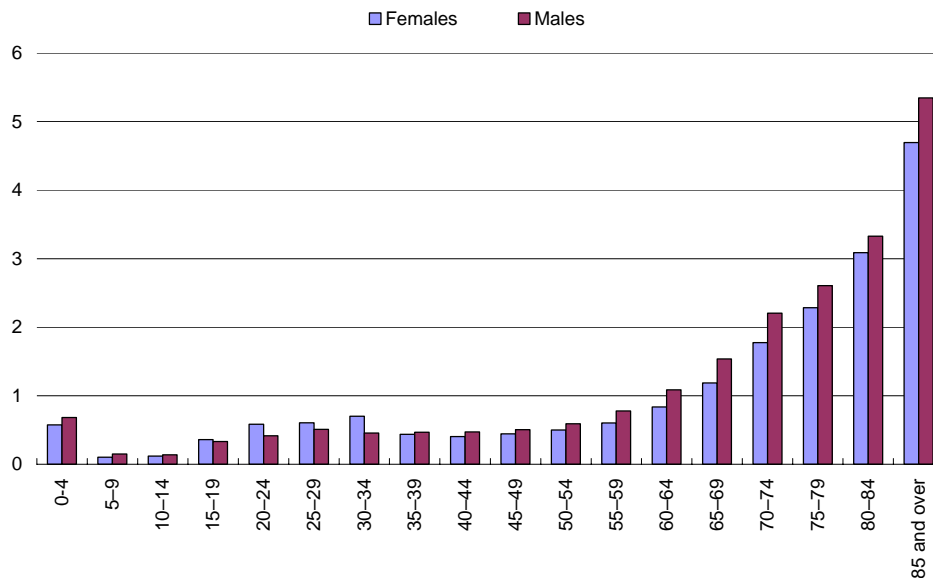
#### **4.2.1 Spending pressures**

##### **Health**

The States and the Commonwealth share responsibility for public health expenditure. In particular, the Commonwealth has primary responsibility for primary care, the pharmaceutical benefits scheme and residential and community aged care, and the States for public hospitals, mental health services and public and community health. However, health care in Australia is best understood as an integrated system where management, administration and funding is shared across a number of bodies, including the Commonwealth, state and local governments, private hospitals, individuals, volunteer carers, private health insurers and the health care workforce. Pressure on one element of the system is likely to be felt elsewhere: advances in one area can create benefits in others.

The health care sector is generally considered to be where the fiscal impact of population ageing will become most apparent. However, despite much public discussion, a consensus is yet to develop as to whether population ageing will necessarily lead to a significant escalation in public expenditures or whether population ageing represents a major long-term financial risk to the health care system.

- Population ageing will see larger proportions of the hospital caseload made up of older Australians. It is also true that on an expenditure per capita basis, the aged are more intensive users of health services – for example, an average male aged 75 plus requires over eight times the health expenditure of a male aged around 30 (AIHW 2004). Hospital usage by older Australians is also higher (Figure 4.1). It follows logically that as the proportion of the aged population increases, the cost of providing health services will increase.

**Figure 4.1. Average patient days by age, Queensland public hospitals, 2001-02**

Source: Australian Institute of Health and Welfare, *Australian Hospital Statistics 2001-02*

- At the same time, several analyses (eg. Richardson and Robertson (1999)) suggest that population ageing, by itself, may have only a modest effect on health care costs as a proportion of GDP. In addition, there are several countries in Europe which have older populations than Australia, but spend less on health as a proportion of GDP and have similar, if not better, health outcomes.
- While life expectancy in Australia is increasing, there is some debate about the extent to which the additional years lived will be free from ill-health and disability. One view is that while life spans have increased, chronic illness and disability have also increased, resulting in longer periods of life spent in ill health. For instance, increased longevity raises the incidence of dementia, particularly among the ‘extreme aged’ population.<sup>10</sup> Accordingly, there is a view that any gains from preventing illness or death from one type of disease are reduced or cancelled by increased illness or death from other diseases.
- There are also surprisingly little data on whether age-related costs are primarily associated with maintaining health or with the final stage of life. The little data that are available from international studies suggest that perhaps 40 per cent of health care during a person’s life is consumed in the process of dying.

The need for caution in projecting future health costs is not only attributable to the paucity of data but also because the impact of population ageing will itself be the product of other factors – eg. technological advances, the configuration of the health system, consumer expectations – the future of which are open to speculation.

### *Aged care*

With a growing aged population, the links between the health and aged care systems will need to strengthen. In this context, the major challenges facing the health care system will be, first, to promote healthy longevity, thereby compressing the period required for aged care,

<sup>10</sup> The Commission could usefully model the impact of higher incidence rates on demand for residential and community care.

and, second, to successfully integrate with the aged care system to provide quality health care for the aged.

The growing scale of these challenges is apparent from recent trends. In particular, demand for residential aged care now seems to come from a population that is both older and frailer.

- According to the AIHW 2004 statistical overview of residential aged care, *Residential aged care in Australia – 2002-03*, the percentage of new admissions to residential care who were aged 80 years plus rose from 64.1 per cent in 1998-99 to 69.0 per cent in 2002-03.
- Other Commonwealth data suggest newly and recently admitted residents may have higher levels of disability than was the case a decade ago. The present residential care planning ratio of 40 high care beds and 48 low care beds per 1,000 people aged over 70 is coming under pressure from the client base in residential care where the majority are now high care clients.

That the average new admission to residential care is both older and more frail suggests that many older people are opting to remain at home and are deferring admissions and possibly deferring assessments.

Demand for care services in the home is expected to dramatically increase. Home care may be provided to increasing numbers of older people with higher level needs as a result of consumer expectations and advances in communications and other technology, as well as an increase in demand for lower level care services. Consumer pressure may drive increased service quality. Social and economic factors may certainly influence who will deliver different types and levels of community care, and who might pay for this care. Carers have a significant role in supporting people, particularly with high dependencies, at home. (The impact of ageing on caring is considered in Chapter 2.)

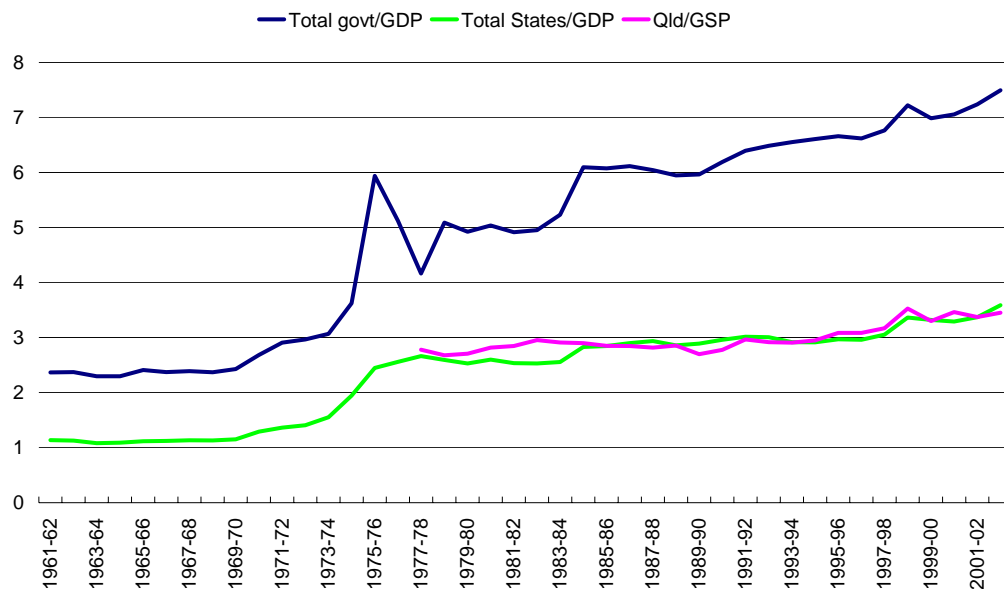
While the patterns of demand appear to be undergoing change, there is yet no evidence to suggest community care will completely ‘replace’ residential care. However, it would appear the combination of consumer preferences and the increased availability of community care is affecting the nature of demand for residential care.

In terms of relative cost of community and residential care, a number of factors need to be considered. Residential care is likely to be the more economical option for people with high needs, as congregate care allows better economies of scale in use of staff and equipment. Community care may be more expensive when the costs to the economy of informal care are considered. Older people who opt to stay at home, rather than enter residential aged care, may reside in higher risk situations than those in residential aged care. This may result in increased risks of falls and health conditions that may necessitate admission to hospital.

#### *Other factors affecting future health care expenditure*

Over the last 40 years Commonwealth and state spending on health care has been increasing both as a percentage of GDP/GSP (Figure 4.2) and as a proportion of government budgets. During this time, demographic change has not been a major driver.

**Figure 4.2. Government health spending as a share of the economy**  
(per cent of GDP/GSP)



Source: Australian Bureau of Statistics, Cat. No. 5512.0

Much of the recent debate agrees that population ageing may not be the major driver behind future growth in health expenditure. For example, Richardson and Robertson (1999) conclude in their paper that ‘any future problems arising from health sector expenditure will be primarily due to non-demographic factors’. Even a close reading of the Commonwealth’s IGR indicates that non-demographic factors represent a more significant driver of the Commonwealth Government’s future health costs than population ageing.

While the Productivity Commission’s Terms of Reference for this study refer specifically to the impacts of ageing, the issue of future health expenditure cannot be understood without broadening the context to a number of other factors that will impinge on public health budgets at the same time.

#### New health technologies and treatments

While the ageing population and population growth will add to the overall costs of providing health services, ageing may not place as great a pressure on health care spending as the combined effects of:

- increasing consumer demand as medical breakthroughs and advances in medical technologies make health care more accessible; and
- potential costs of new technologies, new drugs and health care innovations.

Medical innovation may place pressure on health costs as new technology is adopted (refer Rice 2002 and Goss 2002) — new technology tends to be costly and, as the technology develops, equipment and techniques can quickly become obsolete and be replaced with more advanced treatments. Moreover, if new technology manages illness, without curing, the net medical benefit may be associated with increasing health costs.

However, Frankel et. al. (2000) suggest new technology could decrease health care costs — an analysis of new medical technology introduced in the 1970s showed that overall costs decreased. A more specific example is the improvement in diagnosing and treating peptic ulcers, which have cut costs. New technologies, drugs, and medical and surgical techniques will continue to change the treatment and management approaches for a number of conditions, and permit better quality management and tailoring of services to individual needs. Improved surgical and medical procedures often also mean quicker recovery with less invasive procedures and shorter stay in hospitals. Moreover, advances in e-technologies (e-health, e-commerce, e-procurement) may change the way health care services are delivered, with potential for cost savings.

Accordingly, while new technologies are likely to have a positive impact in improving medical outcomes, the long-term effects on costs are uncertain. The impact of technology on future health care costs is a critical area for further research and the Queensland Government recognises the Productivity Commission will be undertaking a study detailing and explaining the impact of advances in medical technology on public and private health care expenditure.

### Labour force pressures

The health sector is experiencing increasing difficulty in maintaining adequate numbers of health care professionals to sustain existing levels of health service delivery. There are current shortages of medical specialists and nurses, particularly in high technology areas such as intensive care, but also in mental health, aged care and most allied health disciplines. Even if productivity gains in the sector assist in holding down unit labour costs, these workforce shortages, combined with an ageing health labour force, suggest there is likely to be increasing pressure on remuneration in the health sector to keep up with the rest of the workforce.

In summary, the evidence of historical experience, demographic projections and informed speculation suggests that the potential exists for the public health care system to face long-term cost and demand pressures arising from a number of directions, of which population ageing may only be one. However, the scale of any pressures that do arise remains open to conjecture.

The Queensland Government's projections of state spending on health care over the next 40 years vary widely (reflecting their sensitivity to a range of assumptions) – from relatively little change as a proportion of GSP to an increase of around 1.5 percentage points of GSP. These projections reflect the growing impact of an ageing population, with the higher value projection reflecting the additional impact of non-demographic cost factors and growing community expectations with rising real incomes. Many of the factors discussed above, such as the impact of new technology, have not been specifically incorporated into the modelling due to the high level of uncertainty of their net fiscal effects, beyond increases associated with growing real incomes. They therefore represent a significant risk to fiscal projections.

Further data on the Queensland health system and the health status of its people are provided in Attachment 2.

## **Emergency Services**

Demand and the associated cost of emergency services, in particular ambulance services, is expected to rise as the population ages. Aged pensioners currently make up approximately 12 per cent of the Queensland population but account for approximately 60 per cent of ambulance service use. Pensioners and Seniors Card holders also currently receive coverage for ambulance services anywhere in Australia at no cost to the aged pensioner and an exemption from the Queensland Community Ambulance Cover levy on their principal place of residence. Accordingly, on the basis of current concessions and usage patterns, ageing will represent one source of fiscal pressure on the State's ambulance services.

## **Law and order**

There will be a number of demographic factors which affect the fiscal costs of maintaining law and order services in Queensland.

One criminal justice system impact of an ageing Australia (assuming current criminological trends continue) is that criminal activity diminishes with maturity. Not only are the absolute number of offences committed skewed heavily to the under 30s, so too is the rate of crime perpetrated by this age group. More analysis needs to be undertaken in this area.

Although less likely to be a victim of crime, older people have higher levels of fear of crime than the general community for a number of reasons, including lack of physical strength, lower income (and thus a theft is likely to have more of an economic impact), a feeling of social isolation, and reliance upon the media for information about crime. This suggests that even if population ageing reduces crime rates, a growing concern for crime may be a strong countervailing factor. The Queensland Department of Communities is currently undertaking consultation on crime and safety issues affecting the State's senior citizens.

Projections of Queensland expenditure on public order and safety, which is primarily a state responsibility, range from a slight decline as a proportion of GSP to an increase as a proportion of GSP of nearly 1 percentage point over the next 40 years. A declining proportion of young adults in the population may tend to ease pressure on law and order spending, although this effect will be more than outweighed if a strong upward historical cost trend continues — the result of a long-run increase in the overall crime rate, coupled with increasing community expectations of law enforcement.

## **Education**

Future population ageing — or, perhaps more relevant in this context, low and falling fertility rates — will have the effect of reducing the proportion of the population in the traditional school attending age groups. It would follow that this should reduce pressure on the public school and TAFE systems for which the States have direct responsibility.

However, at least in Queensland, the picture is more complex. Although the proportion of the population in the younger age cohorts is projected to decline, the actual numbers in the younger cohorts in Queensland will continue to increase in absolute terms (refer Attachment 1). Other factors, such as growing participation in education and training across age cohorts (for instance, reflecting retraining of older workers and lifelong learning), can also be expected to increase demand for education. For instance, *Queensland State Education* -

2010, the Government's blueprint for state education and the *Education and Training Reforms for the Future Initiative*, the Government's key reform for education in Queensland, aim to increase participation of younger people in the education system.

Education spending is projected to fall relative to GSP (although it will still increase in absolute terms) due to the declining proportions of children and young adults in the population and the projected continuation of the growth of private spending in this sector. However, these effects will be partly offset by any continuation of increases in real per student expenditure by the State. The need for up-to-date information and communication technologies to prepare students for participation in the knowledge economy is a key area of cost pressure, along with higher retention rates and increasing community expectations of school facilities.

## **Housing**

The ageing of the population will increase the number of people with age-related disability and drive demand for smaller housing that meets the needs of older, possibly frail, and non-working households.<sup>11</sup> Housing for this age group is often more specialised and therefore more costly. Accordingly, even if the social housing stock retains its current market share, the cost of housing provision may rise. An important driver of social housing demand will be the capacity of older people, particularly those on the aged pension, to meet their own housing costs.

Attachment 5 discusses social housing and older people in Queensland.

## **Transport**

In Queensland, population growth, particularly in South-East Queensland, is expected to represent a more important driver of transport expenditure, than population ageing. Nevertheless, one of the first impacts of the ageing baby boomer generation will be on demand for age-based concessions. Analysis undertaken by Queensland Transport (using ABS age population projections) suggests that, on the basis of the current concessions, transport concession funding required by government over the next 15 years could triple in size.

International research suggests that many older people do not consider that public transport is adequate or efficient, and that it poses problems of security and convenience (Rabbitt, Carmichael, Jones and Holland 1996). Governments are investing in public transport systems to make them more attractive to the elderly by improving accessibility, convenience, safety and efficiency.

The OECD (2001) notes that older people are likely to experience age-related difficulties in using public transport before experiencing difficulties in driving. This means that efforts need to be made to allow older drivers to drive safely for as long as possible. This may require changes to road infrastructure to lower the risk of road accidents for older citizens.

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<sup>11</sup> Recent demographic research undertaken by McDonald (2004) for the Australian Housing and Urban Research Institute (AHURI), attempted to quantify the medium and long-term projections of housing needs throughout Australia.



Queensland Transport research also shows that ageing will reduce average distances travelled per head, before bringing about a decline in vehicle ownership (after about years 2025-2027), with implications for transport investment needs. Accordingly, the travel patterns of an ageing population will need to be reflected in transport planning, both at the regional and state level.

#### **4.2.2 Revenue pressures**

Whereas the fiscal pressure on the Commonwealth Budget arises mainly in areas of expenditure, states also face pressure on the revenue side of the budget. The three major components of state revenue — specific purpose payments, general purpose payments (which rely on GST revenue), and own source revenue — all face the possibility of being affected directly or indirectly by population ageing.

##### **Own source revenue**

All components of States' own source revenue will be affected by any slowing in economic growth induced by population ageing. Slower economic growth corresponds to slowing growth in payrolls, economic transactions, company profits and other revenue bases, and, in turn, in state taxes, duties, royalties, dividends and other sources of state revenue.

Property duties, such as transfer and mortgage duty, form an important component of state revenue and are dependent on the strength of the property market. Being transaction taxes, they are particularly sensitive to the level of activity within the property market.

Population ageing could slow property market activity, particularly turnover of properties. Younger and middle aged adults have a greater propensity to form new households and upgrade accommodation as they leave home, marry and have families. The decline of this age group as a proportion of the population, possibly with a falling fertility rate, is likely to lead to a reduced rate of property turnover. Moreover, older people are generally not inclined to adjust their housing and may continue to live in their pre-retirement homes (Kendig and Neutze 1999). This trend would reinforce any slowdown in property turnover, with a consequential impact on receipts of property-based duties. (However, a key uncertainty is the extent to which retirees draw on housing equity as a form of retirement savings and contribute to housing turnover.)

As a partial offset, revenue from gambling taxes may increase with the growing proportion of older Australians, whose tendency to gamble is currently higher than the community average. However, this assumes that the next generation of older Australians has a similar consumption pattern as the current generation.

Preliminary Queensland Government projections of own-source revenue indicate long-term growth comparable with GSP, with some compositional changes as stamp duties possibly fall slightly, with a partial offsetting increase in gambling taxes.

## **Commonwealth grants**

Commonwealth grants represent a major revenue source for the States — in Queensland, grants from the Commonwealth represent nearly half of general government revenue.

**GST revenue** is likely to be affected by similar forces that will affect state taxation — that is, slower economic growth and the changing composition of demand. An important factor in the outcome is the exclusion from the GST base of some of the potentially faster growing components of consumption (such as private spending on health services).

**Specific purpose payments** are largely at the discretion of the Commonwealth Government such that there is significant uncertainty surrounding the growth of SPPs relative to GDP. Historical precedent suggests that Commonwealth funding to the States, whether in the form of general or specific purpose funding, will struggle to keep up with, let alone outpace, economic growth. At the same time, if Commonwealth funding grows with demand for health and other services, specific purpose payments may keep up with, or even outstrip, economic growth. Any assessment of the relative fiscal burden of demographic ageing needs to address directly the issue of funding flows between the tiers of government. This issue and other issues related to intergovernmental relations are discussed in section 4.3 below.

## **4.3 Fiscal implications of Commonwealth-State financial relations**

Commonwealth-State financial relations are an important consideration in two ways in the modelling and assessment of the fiscal implications of ageing:

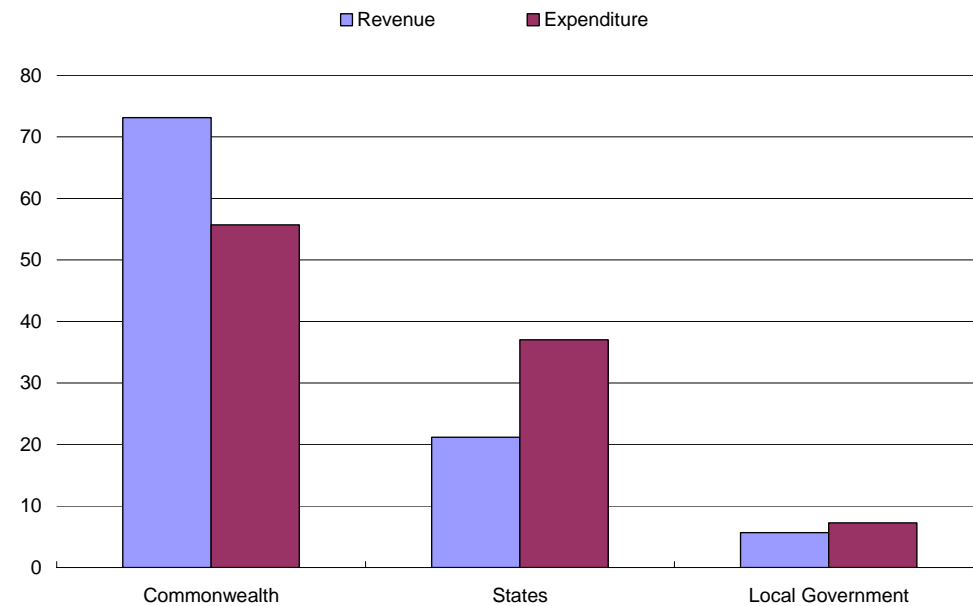
- the level of Commonwealth funding received by the states will be a key factor determining the size of the fiscal impact on the States of population ageing; and
- the degree of Commonwealth influence over the use of state funding and public policy will affect the States' capacity to respond effectively to the policy challenges raised by population ageing.

There are a number of key issues associated with Commonwealth-State relations where decisions by the Commonwealth have the capacity to affect States' abilities to absorb future expenditure pressures arising from population ageing.

### **4.3.1 Vertical fiscal imbalance**

Within the Australian Federation, financial as well as political authority and responsibility are divided between the Commonwealth and the States, with each level of government raising revenue and undertaking expenditure within its own jurisdiction. Since Federation, the Commonwealth's revenue raising capacity has grown in excess of its expenditure responsibilities while the States' revenue capacity is significantly less than their expenditure responsibilities. In effect, the States' revenue capacity meets approximately half of their expenditure responsibilities (Figure 4.3).

**Figure 4.3. Vertical Fiscal Imbalance, 2003-04**  
(per cent)



Source: Australian Bureau of Statistics, Cat. No. 5501.0

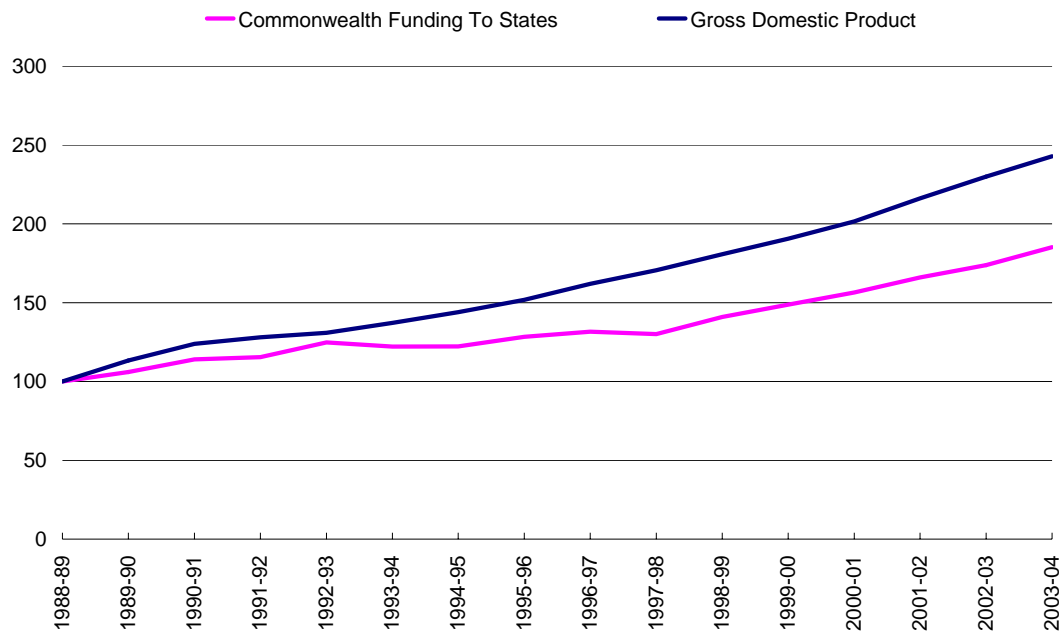
The existence of vertical fiscal imbalance (VFI) in the context of demographic change has two very important implications for the impact of ageing and other factors on the fiscal position of state governments:

- expansion of public revenues through strategies designed to respond to the anticipated slowing in economic growth will disproportionately benefit the Commonwealth since it collects the majority of taxation and has access to Australia's fastest growing tax bases, such as income tax; and
- VFI constrains the capacity of future state governments to expand their tax base to meet growing demands from population ageing.

Accordingly, the policy implication for a jurisdiction of a fiscal gap depends on more than simply the size of the gap — a similar sized fiscal gap (in terms of GDP/GSP) facing the Commonwealth Government and state governments will have more serious fiscal implications for the States since VFI limits the capacity of state governments to respond to it.

#### 4.3.2 Growth of Commonwealth funding

Over the past decade and a half, a substantial gap has developed between growth in Commonwealth funding to the States and growth of the economy. Figure 4.4 indicates Commonwealth funding to the States has not grown in line with GDP over time. There is significant uncertainty surrounding the growth of Commonwealth funding relative to GDP going forward. Accordingly, the modelling presented in Attachment 4 considers the impact of growth in SPPs and GST revenue on the fiscal gap under a number of alternative scenarios.

**Figure 4.4 Growth in Commonwealth Funding to the States compared with GDP Index, 1988-89=100**

Note: Commonwealth funding does not include those payments paid through the States eg local government grants.  
 Sources: Commonwealth Budget Papers; Australian Bureau of Statistics

### 4.3.3 Horizontal fiscal equalisation

The principle of horizontal fiscal equalisation (HFE), which underpins the distribution of GST revenue grants from the Commonwealth, embodies the concept of an equal treatment of all Australians no matter in which state or territory they choose to live. Queensland has consistently supported HFE and believes it will be an important mechanism in facilitating policy in response to demographic change — that is, ensuring resources are allocated in an efficient manner as the needs and capacities of different states change in the face of changing demographics. The distribution of national funds on the basis of standard service costs and revenue capacity will continue to operate to direct funds to where they are most needed while maintaining incentives for improved service efficiency and responsible fiscal management.

Any changes that compromise the fundamental principle of HFE are likely to lead to an increased variance, and possibly a reduced level, in the quality of government services to the Australian community.

### 4.3.4 Specific purpose payments

Specific purpose payments are provided to meet Commonwealth-imposed priorities and cannot be used for other purposes. SPPs are made at the discretion of the Commonwealth and are made across a range of policy areas.

The Commonwealth Government has taken a strong position in relation to recent SPP negotiations with the States and actively pursues its own policy objectives through individual SPP negotiations, often requiring States to match Commonwealth funding.

SPPs are currently provided on an input basis with many requiring matching State Government funding. Excessive centralised input and accountability controls can inhibit

reform and efficiency improvements in service delivery at the state level and limit governments' capacity to respond to a tightening budget constraint by quickly and decisively directing resources to areas of greatest need.

#### **4.3.5 Shared service sector responsibilities**

The Commonwealth and the States share responsibilities in important service sectors, such as health and education. While shared responsibility can have some possible positive effects — such as a broader access to government by the community and access for those services to a potentially larger funding base — it can also have negative impacts:

- makes reform within those sectors more difficult as another level of negotiation between governments, with perhaps different views and priorities, is required, in addition to consultation with industry and the community; and
- means that a single jurisdiction often does not face — and therefore may not factor in — the full costs and benefits of a policy change. As a corollary, shared provision can create an incentive for jurisdictions to indulge in blame and cost shifting, rather than pursue reform. For example, the Australian Government's introduction of the Seniors Card had financial implications for the States as public transport and other concessions were extended to a wider group of beneficiaries.

Ongoing reform will be an important element in governments' policy responses to demographic change. In the absence of improved forums and mechanisms for interjurisdictional cooperation, the risk is that barriers between jurisdictions in areas of shared service sector responsibility — such as the critical areas of health and education — will impede this ongoing reform process and the capacity of states to respond to growing fiscal pressure.

### **4.4 The fiscal challenge facing local government**

While there have been a number of analyses investigating the fiscal impact of population ageing at the Commonwealth and state levels, relatively little work appears to have been undertaken to date at the level of local government. Given the scale of the social and economic impacts anticipated to arise from population ageing, local governments will also need to manage the transition to an older community. As discussed in Attachment 1, all regions in Queensland are projected to experience population ageing, albeit at different rates, with some local governments facing a very substantial change in the demographic profiles of their communities. Some planning has already begun — for example, the Australian Local Government Association recently released the *Australian Local Government Population Ageing Action Plan*.

Modelling of the fiscal impact of ageing on local government would support this planning and identify potential funding needs, particularly if it is integrated with the fiscal modelling already developed for the other tiers of government.

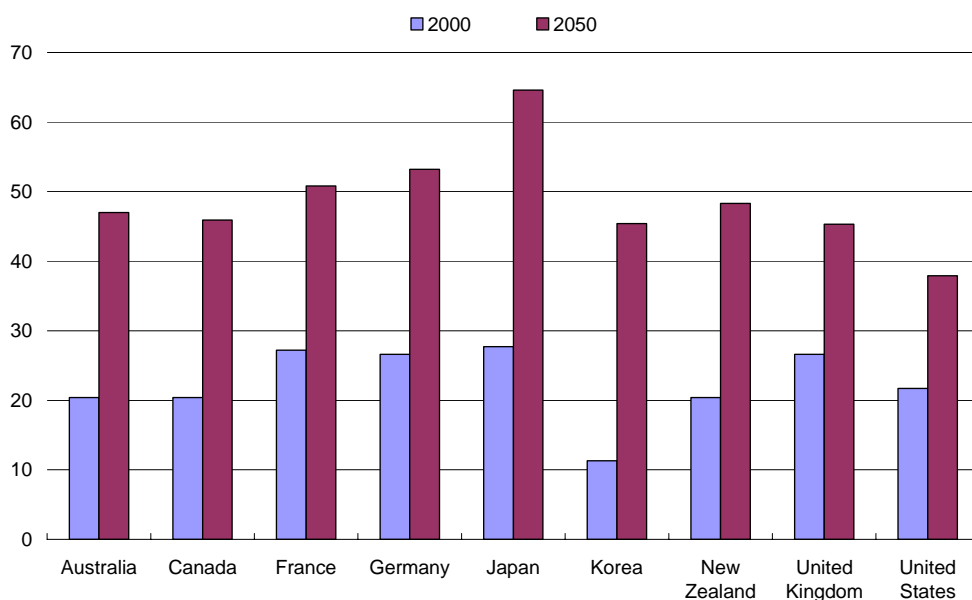
## ATTACHMENT 1

## A1. Population Ageing in Queensland

## A1.1 What is population ageing?

Population ageing is a world-wide phenomenon, which is reflected in a growing share of the aged in the population.<sup>12</sup> As Figure A1.1 shows, populations in the developed economies of Europe, Asia, Oceania and North America will all age over coming decades. The aged dependency ratio — the ratio of persons aged 65 years and above, to persons aged between 20 and 64 — is expected to double in the majority of OECD countries (including Australia) by 2050.

**Figure A1.1. Aged Dependency Ratios for Selected OECD Countries, 2000 and 2050**



Source: Casey et.al. (2003)

Population ageing is not driven by distinctive national or cultural traits, but is largely the outcome of two beneficial trends experienced by developed countries — longer healthier lives and higher material living standards. Longer lives result in larger numbers of aged people, while higher living standards are associated with falling fertility rates:

- in 1960, the Australian population's average life expectancy was around 68 years for males and 74 years for females — today, it is around 77 years for males and 82 years for females, with the ABS estimating an average annual increase in life expectancy over the past three decades of 0.30 years for males and 0.25 years for females.

<sup>12</sup> The Australian Bureau of Statistics does not have a standard nomenclature for the aged. For the purpose of this submission, 'the aged' refer to those people aged 65 years and over. This definition is consistent with that used in the ABS publication, *Ageing in Australia* (Cat. No. 2048.0).

- Australian women are having fewer children — the fertility rate of Australian women has been below replacement rates since the mid-1970s. Fertility rates in Queensland have generally been slightly higher than the Australian average, but the differential has narrowed over the past 15 years. Queensland's total fertility rate for 2002 was 1.773 births per woman and remains slightly higher than the comparable Australian rate of 1.752.

## A1.2 Age profile of the Queensland population

Queensland's population is currently slightly younger than the Australian population with a median age of 35.5 years compared with 36.1 years for Australia (see Table A1.1). Queensland's relatively younger population reflects two main factors — the age composition of net interstate migration to Queensland and the State's Indigenous population.

**Table A1.1 Median Age of Population, By State and Territory, 1983 and 2003**

As at 30 June	NSW	Vic.	Qld	SA	WA	Tas	NT	ACT	Aust.
1983	30.9	30.4	29.3	31.0	29.1	29.6	24.8	27.5	30.2
2003	36.4	36.2	35.5	38.2	35.5	38.1	30.3	33.8	36.1

Source: Australian Bureau of Statistics, Cat. No. 3201.0

Over the last 20 years, the median age of Queensland's population increased by 6.2 years. This increase is higher than the Australian average rise of 5.9 years, but lower than the increases recorded for Tasmania (8.5 years), South Australia (7.2 years) and the Australian Capital Territory (6.3 years).

As at 30 June 2003, 11.9 per cent of Queensland's population was aged 65 years or more, compared with the national average of 12.8 per cent. This compares with fairly similar shares for Queensland (9.8 per cent) and Australia (10.0 per cent) 20 years ago. Although Queensland recorded a stronger increase in older persons (aged 65 years or more) over this period (86.1 per cent, compared with 65.8 per cent for Australia), this was more than compensated by Queensland's stronger overall population growth.

Another way of identifying the impact of ageing on the State's population is by considering changes in aged dependency ratios, that is, the population aged 65 years or more expressed as a proportion of the working age population (that is, those aged between 20 and 64 years).<sup>13</sup> As at 30 June 1983, both the Queensland and Australian aged dependency ratios were 17.4 and both have increased over the past 20 years. However, Queensland's aged dependency ratio has increased at a slower rate, rising by 2.3 persons (to 19.7 persons for every 100 people of working age) compared with a rise of 3.8 persons (to 21.2) for Australia. Expressed another way, there are currently 5.07 persons in Queensland in the potential workforce for every person aged 65 years or more — slightly higher than the Australian average of 4.71 persons.

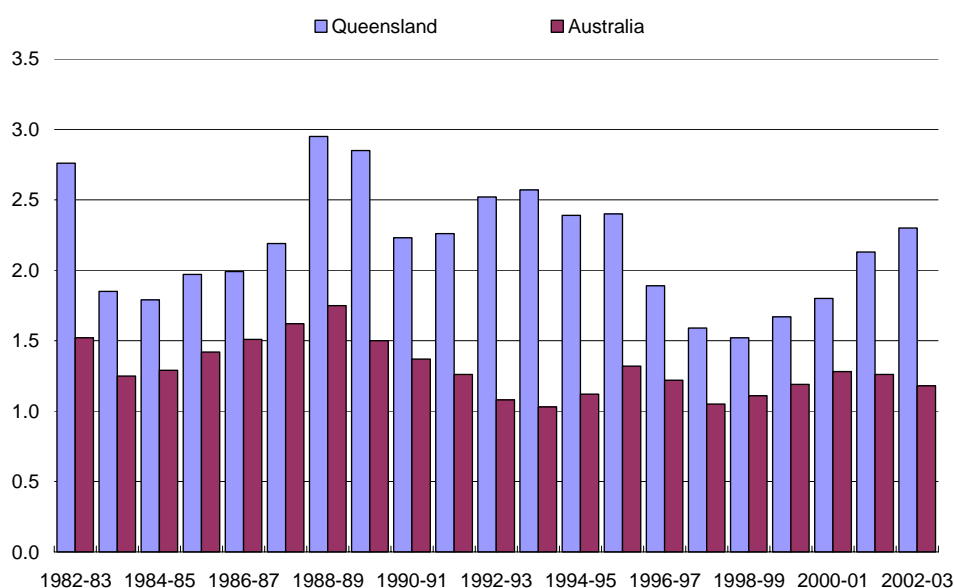
The slower increase in the aged dependency ratio in Queensland over the past two decades largely reflects the gains from, and the age composition of, net interstate migration to Queensland.

<sup>13</sup> These figures assume a working age of between 20 and 64 years, reflecting current behavioural patterns. Changes in working ages may alter the outlook for the aged dependency ratio. For instance, changing attitudes towards retirement could result in increased retirement ages which act to reduce the aged dependency ratio.

### A1.2.1 Net interstate migration to Queensland

Queensland has been the fastest growing state in terms of population since the mid-1970s, and this is projected to continue. A comparison of population growth rates over the last 20 years is shown in Figure A1.2. Over the two decades to 2002-03, Queensland's population increased by 52.8 per cent, compared with growth nationally of some 29.2 per cent. Consequently, Queensland has accounted for an increasing share of Australia's population, rising from 16.1 per cent in 1982-83 to 19.0 per cent in 2002-03.

**Figure A1.2. Annual Population Growth, Queensland and Australia  
1982-83 to 2002-03  
(per cent of total)**



Source: Australian Bureau of Statistics, Cat. No. 3101.0

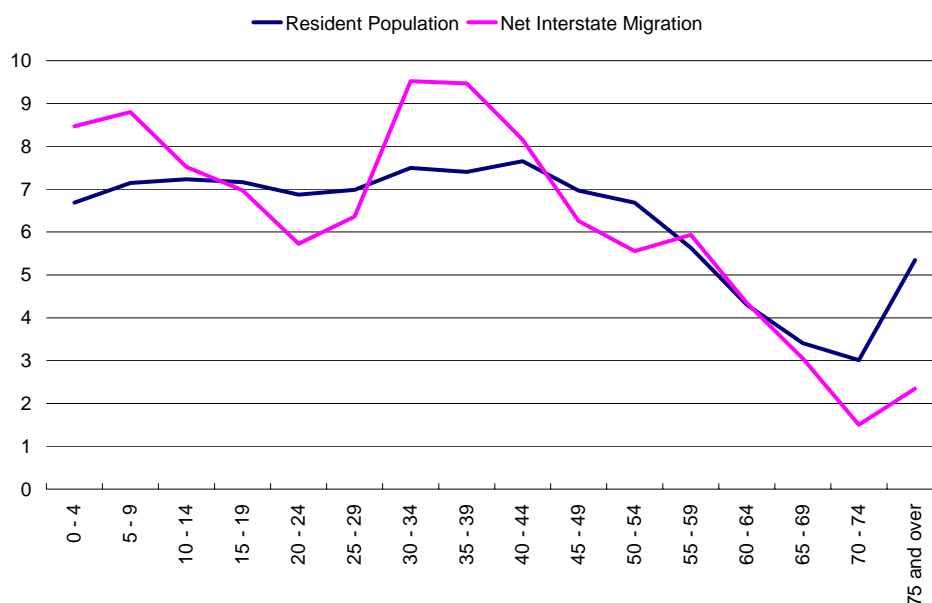
The internal redistribution of Australia's population has been an important source of population growth for Queensland, with net interstate migration contributing 43 per cent of the State's population growth over the 20 years to 2002-03. Net overseas migration contributed a further 20.4 per cent to Queensland's population growth, with natural increase (the surplus of births over deaths) contributing the remaining 36.8 per cent.

Interstate migration flows to Queensland over the last 20 years have been predominately younger than the resident population (Figure A1.3). In 2002-03, around 6.9 per cent of net interstate migrants to Queensland were aged 65 years and over, compared with the corresponding share of the resident Queensland population of 11.9 per cent — dispelling the common myth that migration flows to Queensland are dominated by retirees.

The over-representation of net interstate migrants in the age cohorts 0-14 years and 30-44 years is noteworthy. There has also been a recent trend where Queensland has received slightly more than its population share of net migrants in the 55-64 year age cohort. Of note, is Queensland's net gain of 2,700 aged persons (aged 65 years and over) in 2002-03 — the largest gain by any state or territory.



**Figure A1.3. Net Interstate Migration and Resident Population By Age, 2002-03**  
(per cent)

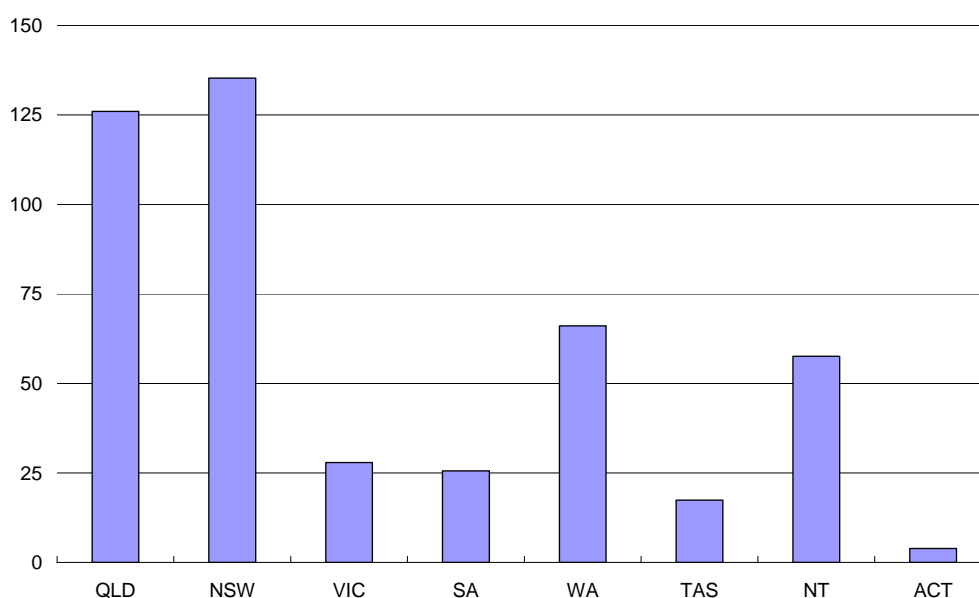


Source: Australian Bureau of Statistics, Cat No. 3201.0 and 3412.0

### A1.2.2 Queensland's Indigenous population

An estimated 126,000 Aboriginal and Torres Strait Islander persons were resident in Queensland in June 2001, accounting for 3.5 per cent of the State's population (nationally, 2.4 per cent). Queensland has the second highest number of Indigenous people after New South Wales (135,000) (Figure A1.4).

**Figure A1.4. Indigenous Population by State and Territory, 2001**  
(‘000 persons)

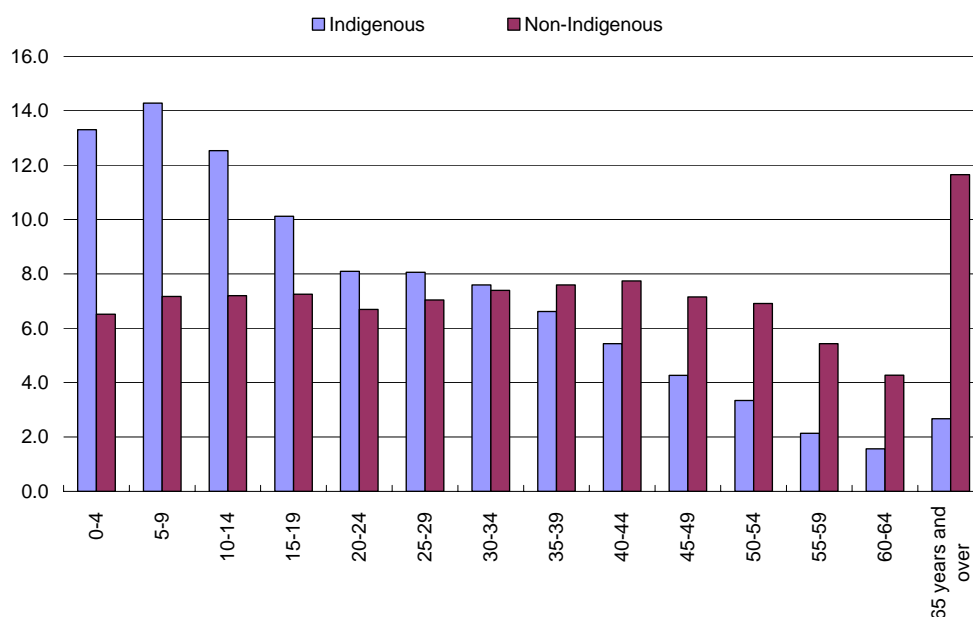


Source: Australian Bureau of Statistics, Cat. No. 3101.0

Queensland's Indigenous population increased by 20.1 per cent over the period 1996 to 2001, compared with an increase of only 8.7 per cent for the total population. The relatively large increase in the Indigenous population includes a changing propensity for Indigenous people to identify, reflecting a growing strength in culture and status within the wider community in recent years.

The age structure of the State's Indigenous population is considerably different to that of the non-Indigenous population, as presented in Figure A1.5.

**Figure A1.5 Age Profile of Indigenous and Non-Indigenous Population, Queensland, 2001**  
(per cent of total)



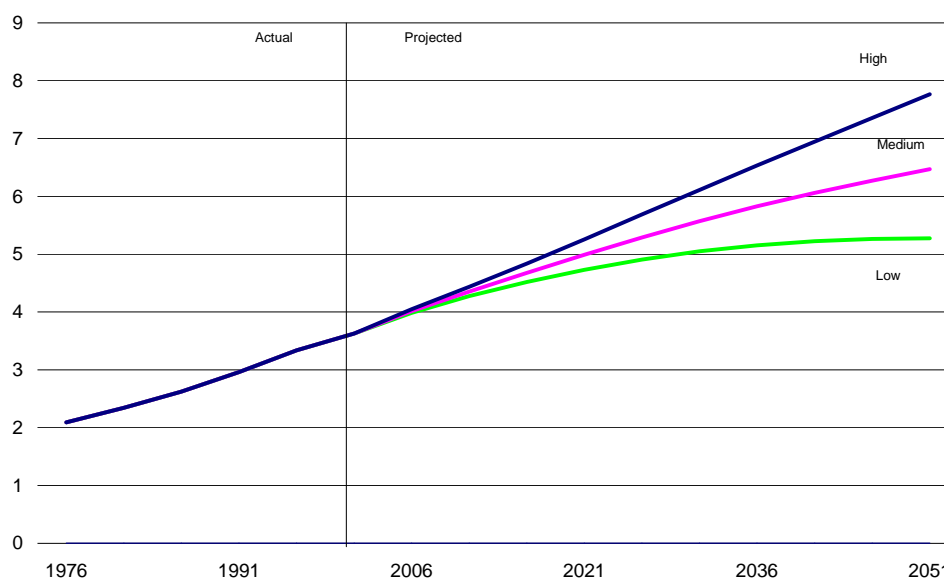
Source: Australian Bureau of Statistics, Cat. No. 2004.0

The Indigenous population has a much younger age profile with a median age of 19 years, compared with 36 years for the non-Indigenous population. In 2001, only 2.7 per cent of the State's Indigenous population were aged 65 years and over, compared with 11.6 per cent for the non-Indigenous population, reflecting a much lower life expectancy among the Indigenous population.

### A1.3 Population projections for Queensland<sup>14</sup>

Queensland's strong population growth is projected to continue, with the State's population (medium series) expected to rise from 3.6 million people in 2001 to around 5.3 million people in 2026, increasing the State's population share from 18.7 per cent to around 22 per cent. Figure A1.6 illustrates projections of the State's population according to three scenarios based on different assumptions relating to migration, fertility and life expectancy. If future fertility and migration outcomes are at the high end of expectations (high growth series), Queensland's population could more than double over the next half century.

<sup>14</sup> For more information on the Queensland Government's population projections see the recently published article, 'Population Projections for Queensland and its statistical divisions', *Queensland Economic Review*, 2004/02.

**Figure A1.6. Actual and Projected Population, Queensland, 1976 to 2051**  
(million persons)

Sources: Australian Bureau of Statistics, Cat. No. 3201.0; Queensland Government Population Projections 2003

The development of these scenarios was coordinated across Government by the Office of Economic and Statistical Research (OESR), Queensland Treasury, through an Advisory Group, including the Centre for Population Research at The University of Queensland. The Queensland Government has developed its own population projections drawing on local information on land supply and planning constraints. The Queensland Government Projections include projections for all statistical divisions (which are consistent with the State projections) and are used by all departments and agencies.

### A1.3.1 Comparison of Queensland Government and ABS population projections

The Queensland Government and ABS population projections for Queensland are similar, but are based on slightly different assumed levels of future fertility, mortality and migration. A comparison of these assumptions is presented in Table A1.2.

**Table A1.2 Comparisons of Population Projections Assumptions**

<b>Queensland Government Projections Medium Series</b>	<b>ABS Projections Series B</b>
Fertility to decline to 1.6 children per woman by 2021, constant thereafter	Fertility to decline to 1.6 children per woman by 2011, constant thereafter
Expectancy of life at birth of 87.8 years for males and 90.0 years for females by the end of the projection period (2051)	Expectancy of life at birth of 84.2 years for males and 87.7 years for females by the end of the projection period (2051)
Net overseas migration declining to net gains of 16,000 persons per year by 2010, then remaining constant	Net overseas migration of 19,500 persons per year
Net interstate migration of 38,500 persons in 2003, then 35,000 persons in 2004, then 29,500 persons in 2005, then declining gradually to 24,500 persons by 2051	Net interstate migration of 35,000 persons in 2003, then 31,000 persons in 2004, then 26,000 persons from 2005 to 2051

Sources: Queensland Government Population Projections, 2003 (medium series); and Australian Bureau of Statistics, Cat. No. 3201.0 and 3222.0 (Series B)

The Queensland Government projections are not based on assumed net migration levels but use separate in-migration and out-migration rates that reflect the propensity of interstate residents by age group to move to Queensland and the propensity of Queenslanders by age group to move interstate. Table A1.3 compares age-specific population projections for Queensland in 2021 and 2051 drawing on the Queensland Government and ABS projections.

**Table A1.3 Comparisons of Queensland's Projected Population by Age Group, 2021 and 2051**

	2021				2051			
	Queensland Government		ABS		Queensland Government		ABS	
Age Groups	'000s	Share %	'000s	Share %	'000s	Share %	'000s	Share %
0 to 14 years	848	17.0	822	16.5	916	14.2	917	14.3
15 to 64 years	3,254	65.2	3,246	65.0	3,763	58.2	3,788	58.9
65 + years	887	17.8	925	18.5	1,791	27.7	1,724	26.8
<b>Total</b>	<b>4,990</b>	<b>100.0</b>	<b>4,993</b>	<b>100.0</b>	<b>6,470</b>	<b>100.0</b>	<b>6,430</b>	<b>100.0</b>

Sources: Australian Bureau of Statistics 3201.0 and 3222.0 (Series B); and Queensland Government Population Projections, 2003 (medium series)

The long-term fertility assumptions have resulted in comparable numbers of persons aged 0 to 14 years in 2051. Differences in the short-term projections are the result of the ABS assumed fertility rate of 1.6 being achieved 10 years earlier than anticipated by the Queensland Government projections. There are some 67,000 more persons in the older age groups in 2051 in the Queensland Government projections, due to a more optimistic life expectancy outlook than that assumed in the ABS projections. The opposite result in the short term largely reflects the ABS assumed higher numbers of net overseas migrants.

### A1.3.2 Comparison of population projections for Queensland and Australia

For the purposes of this submission, the Queensland's Government medium series has been compared with the ABS 3222.0 Series B. Table A1.4 compares changes in the age profile of the Queensland and Australian population over the 40 year period to 2043.

**Table A1.4. Actual and Projected Populations, Queensland and Australia**

	1983	2003		2023		2043	
	Number	number	% change 1983 to 2003	number	% change 2003 to 2023	number	% change 2023 to 2043
<b>Queensland</b>							
0-19 years	845,695	1,058,711	25.2	1,164,494	10.0	1,232,831	5.9
20-64 years	1,394,257	2,287,013	64.0	2,994,515	30.9	3,344,344	11.7
65+ years	242,330	451,051	86.1	952,170	111.1	1,569,975	64.9
Total	2,482,282	3,796,775	53.0	5,111,179	34.6	6,147,150	20.3
<b>Australia</b>							
0-19 years	5,031,901	5,356,197	6.4	5,111,796	-4.6	5,119,098	0.1
20-64 years	8,825,811	11,979,631	35.7	13,894,679	16.0	14,172,628	2.0
65+ years	1,535,760	2,545,641	65.8	4,706,413	84.9	6,732,643	43.1
Total	15,393,472	19,881,469	29.2	23,712,888	19.3	26,024,369	9.7

Sources: Queensland Government Population Projections, 2003 (medium series); and Australian Bureau of Statistics, Cat. No. 3201.0 and 3222.0 (Series B)

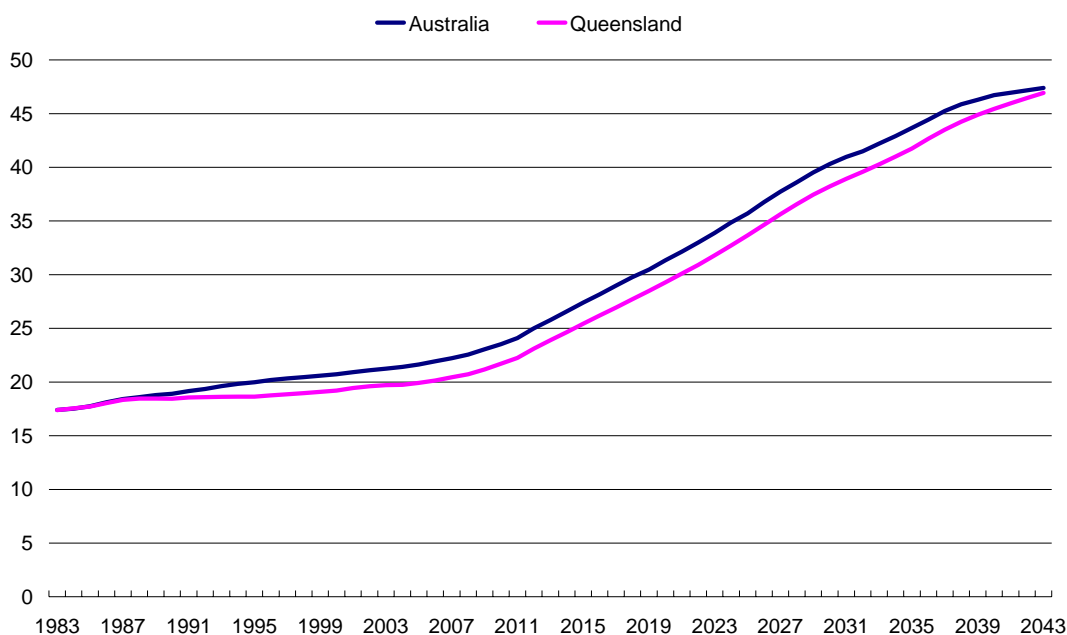
Care should be exercised when comparing the projected populations of Queensland and Australia as the result will, in part, reflect the assumptions underlying the projections. In the case of the aged population, the assumed mortality assumption will have a major impact on this population. Booth (2004) found that in most, if not all, developed countries the mortality assumptions used in official population projections have consistently underestimated the increases in life expectancy that have in fact occurred. The official ABS mortality assumption has in the past been similarly conservative. It is extremely important that further research is undertaken to better project the future trajectory of life expectancy and subsequently, the aged population.

As indicated in Table A1.2, the Queensland Government projections have a higher life expectancy at birth assumption than the corresponding ABS Queensland Series B. Accordingly, in the case of comparing population projections for Queensland and Australia, the more conservative ABS Australian mortality assumption is likely to contribute, to some extent, to the stronger growth in aged persons in Queensland compared with Australia.

Returning to Table A1.4, Queensland is projected to continue to record stronger population growth than Australia over the next 40 years. However, rates of population growth are expected to ease in both Queensland and Australia due to declining levels of natural increase and projected relatively stable levels of net migration. Queensland's population is expected to grow by 35 per cent over the next 20 years with a further easing in growth to 20 per cent over the period, 2023 to 2043. Australia's population is projected to grow by around half the rate of Queensland, or by 19 per cent and 10 per cent respectively, over these two periods.

Queensland is unique in that the State is projected to record stronger growth than Australia in aged persons (aged 65 years and over), as well as continued growth in younger age cohorts (those aged under 19 years). Over the next 40 years, Queensland's aged population (aged over 65 years) is projected to more than treble from 451,000 to 1,570,000 while the State's youth population (0-19 years) is expected to increase from 1,059,000 to 1,233,000 or by 16 per cent. This compares with an increase of Australia's aged from 2,546,000 to 6,733,000 (or by 164 per cent) while the number of young persons is expected to decline from 5,356,000 to 5,119,000 (or by 237,000) persons over this 40 year period. This growth differential in the youth cohort means that Queensland will continue to face demand for education services from a growing school age population, while the school age population in the rest of Australia declines.

Queensland's aged dependency ratio is expected to increase from 19.7 persons for every 100 persons of working age to 46.9 over the next 40 years (Figure A1.7). By the year 2043, there will be only 2.13 people in the potential workforce for every person aged 65 years or more. This is similar to the result for Australia, leading to a narrowing of the aged dependency ratio between Queensland and Australia over the next 40 years.

**Figure A1.7 Aged Dependency Ratios, Queensland and Australia, 1983 to 2043**

Sources: Queensland Government Population Projections, 2003 (medium series); and Australian Bureau of Statistics, Cat. No. 3201.0 and 3222.0 (Series B)

### A1.3.3 Indigenous population projections

Given the difference in the age profile of the Indigenous population, there is an urgent need to develop Indigenous population projections to assist in the planning of service delivery. There is also a high level of need for Indigenous population estimates and projections at a smaller than State area level to enable better monitoring of government programs and outcomes.

Projecting the Indigenous population is difficult due to deficiencies in the quality of Indigenous births, deaths and migration data and the changing propensity to identify as Indigenous. The ABS has produced experimental projections of the Indigenous population to June 2006, based on the 1996 Census and has recently undertaken some developmental work to improve these projections. The ABS is currently undertaking a period of consultation and plans to release new experimental estimates and projections of Indigenous Australians, including at the state level, out to the year 2009 in October 2004. The three-year delay from the August 2001 Census data to the planned release of the estimates and projections has been problematic. The more timely development of Indigenous population estimates and projections as soon as possible after the release of Census data would greatly assist the planning processes of government.

### A1.3.4 Population growth and ageing in Queensland's regions

Queensland's population is the most decentralised of the mainland states. As at 30 June 2003, 45.7 per cent of the State's population was located in the main metropolitan area (Brisbane Statistical Division), compared with 62.8 per cent for New South Wales and 72.4 per cent for Victoria. The relative dispersion of the Queensland population remains a challenge for the Queensland Government in coordinating and funding the many government services delivered across the State. Moreover, understanding the likely regional distribution

of the State's aged population is vital to inform future planning for infrastructure and service delivery.

Queensland has 11 statistical divisions and each is projected to experience different patterns of population growth.<sup>15</sup> Most of Queensland's population growth is projected to occur in coastal urban areas, continuing an established long-term trend. In contrast, the three western regions are projected to experience little change in total population over the next 25 years. South-East Queensland, which is the fastest growing region in Australia, has gained more than one million people in the last 25 years and a further million is projected within the next 20 years. While this rapid growth offers opportunities, there are also many challenges, including infrastructure costs, the need to manage environmental impacts, and the emergence of areas of social and economic disadvantage.

All Queensland's regional populations are projected to age over the next 25 years, albeit at different rates, reflecting the current age structure, the age profile of people moving to and from the region and projected population growth or decline. For instance, the net loss of youth from some rural areas will contribute to population ageing in regional Queensland. Retirement migration, which is likely to favour coastal regions, will also affect regional patterns of population ageing and demand for infrastructure and related services. Research into the drivers of retirement migration would usefully inform service delivery and planning, particularly at a regional level.

In 2001, 11.9 per cent of Queensland's population was aged 65 years or older and by 2026 this proportion is projected to reach 20 per cent, or one in every five people. By 2026, Wide Bay Burnett (27.7 per cent) and Moreton (23.7 per cent) statistical divisions are projected to have the highest shares of aged persons in their populations. The largest increase in the number of aged persons is projected to occur in South-East Queensland, with an additional 441,000 persons aged 65 years and over expected to reside in the region by 2026. This represents around 70 per cent of the growth in this age cohort in Queensland. Details for all Queensland statistical divisions are presented in Table A1.5.

In terms of aged dependency ratios, there are currently large differentials across Queensland's statistical divisions (see Figure A1.8), ranging from a low of 9.3 in the North West statistical division to a high of 27.6 in the Wide Bay-Burnett statistical division. By 2026, higher aged dependency ratios are projected for Moreton (42.5), Wide Bay-Burnett (52.3) and Darling Downs (40.2) statistical divisions than the Queensland average (34.7). For instance, in 2001 the Wide Bay-Burnett statistical division recorded only 3.62 persons in the potential workforce for every person aged 65 years or more, compared with the Queensland estimate of 5.15 persons. Over the next 25 years, this ratio is projected to decline to 1.91 and 2.88 persons respectively.

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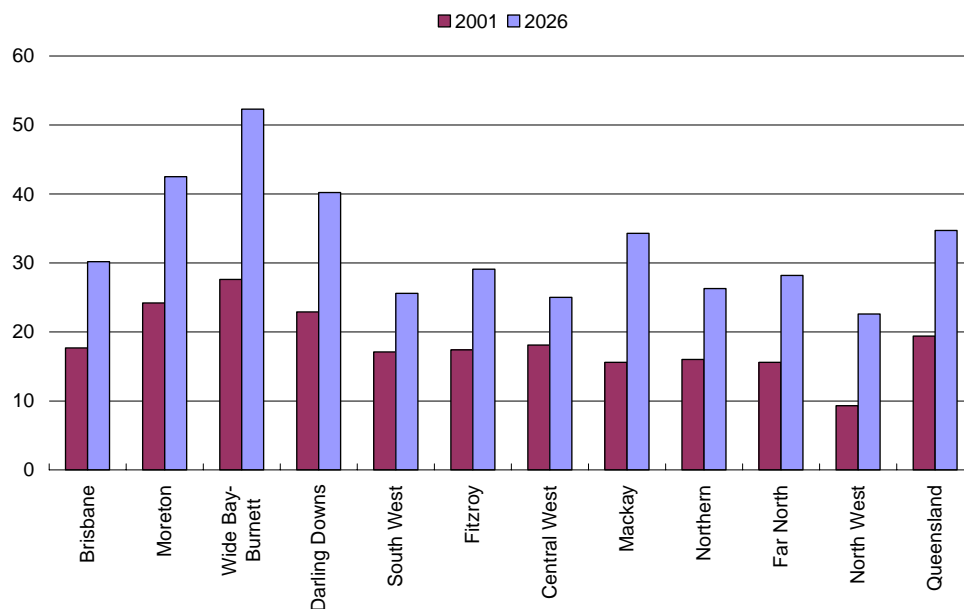
<sup>15</sup> Note that the Queensland Government has published population projections to 2026 for Queensland statistical divisions.

**Table A1.5. Projected Number of Persons Aged 65 Years and Over  
Queensland Statistical Divisions, 2001 and 2026**

Statistical Division	2001	2026	Change between 2001 and 2026	
			Number	Per cent
Brisbane	177,850	411,567	233,717	131.4
Moreton	103,620	311,151	207,531	200.3
<i>South East Queensland</i>	<i>281,470</i>	<i>722,718</i>	<i>441,248</i>	<i>156.8</i>
Wide Bay-Burnett	36,677	99,085	62,408	170.2
Darling Downs	27,245	56,119	28,874	106.0
South West	2,749	4,159	1,410	51.3
Fitzroy	18,467	39,292	20,825	112.8
Central West	1,331	1,825	494	37.1
Mackay	12,958	35,756	22,798	175.9
Northern	18,254	39,706	21,452	117.5
Far North	21,143	54,609	33,466	158.3
North West	1,935	4,700	2,765	142.9
<b>Queensland</b>	<b>422,232</b>	<b>1,057,967</b>	<b>635,735</b>	<b>150.6</b>

Sources: Queensland Government Population Projections, 2003 (medium series); and Australian Bureau of Statistics 3235.0

**Figure A1.8. Projected Aged Dependency Ratios, Queensland Statistical Divisions, 2026**



Source: Queensland Government Population Projections, 2003 (medium series)



## **A1.4 Housing formation of the aged**

A major consideration in assessing the demand on services by the aged is the number and demographic characteristics of older people living alone, who may be without immediate support.

Of the 2.2 million persons aged 65 years and over enumerated at home on Census night in 2001 in Australia, 93.3 per cent lived in a private dwelling. In Queensland, 392,000 persons aged 65 years and over were enumerated at home on Census night with similar proportions in private dwellings (93 per cent) and non-private dwellings (7 per cent). Of those aged persons in non-private dwellings, the majority (6.0 per cent for Australia and 6.5 per cent for Queensland) were in care accommodation, such as hospitals, nursing homes and hostels. Of those aged Australians living in private dwellings, 47.1 per cent were living with their partner only, compared with 29.1 per cent who were living on their own. A similar proportion of Queensland's aged lived in one person households (29.3 per cent).

The proportion of older Australians living alone has increased from 19.7 per cent in 1971 to 25.5 per cent in 2001. Given the projected growth in the aged in both Queensland (248 per cent) and Australia (164 per cent) over the next 40 years there is likely to be further growth in the number of aged persons living alone. With population ageing one of the factors leading to smaller households, State and local government planning policies have an important role in creating a mix of housing types to accommodate changing housing needs.

## **A1.5 Queensland Government's Demographic Research Program**

The Queensland Government is also pursuing an extensive demographic research agenda in order to develop a high-quality evidence base to inform future policy responses to demographic challenges, including population ageing. The Queensland Government has recently established an Intergenerational Research Coordination Board to oversee this work and to coordinate the Government's approach to demographic research across agencies. The demographic research program is organised around six key themes — key items of completed and continuing research under each of these themes are discussed below:

- *Demographic statistics and projections*

In 2003, collaborative research between the Queensland Government and The University of Queensland resulted in the production of the first official Queensland Government population projections, at the state and statistical division levels. The Department of Local Government, Planning Sport and Recreation has also produced projections at the Local Government Area level using the statistical divisions projections as control totals. The production of these projections was underpinned by research into fertility and life expectancy and migration. Future research and refinement of the projections will continue to focus on these areas.

- *Whole-of-Government research initiatives*

The Queensland Government has established the Intergenerational Research Project, coordinated by Queensland Treasury, to deliver long-term projections for the Queensland economy and Budget, on a 'constant policy' or 'do nothing' basis. This information will facilitate the development of long-term strategies to manage future fiscal pressure associated with the ageing of the population and other factors.

- *Service delivery*

The changing structure and location of the State's population poses challenges for the Government in delivering efficient and effective services to Queenslanders. To this end, a number of research and consultation initiatives have been undertaken, including:

- *Smart State: Health 2020 Directions Statement* — a summary of current trends in health and health services in Queensland, along with some of the challenges of coming decades; and
- *Queensland 2020: A State For All Ages* — a discussion paper to stimulate community discussion about how to respond to the impact of ageing.

- *Raising real incomes*

A key determinant of future living standards will be the continuation of strong growth in Queensland's employment and productivity. The Drivers of Economic Growth project provided a major contribution to our understanding of the performance of the Queensland economy, and will assist in further research and public policy. Cross-agency research into the labour market impacts of population ageing, and possible state government policy responses, has now commenced.

- *Inter-governmental initiatives and research*

Key items of inter-governmental research involving the Queensland Government include:

- The Cross Government Project to Reduce Social Isolation of Older People - Project stakeholders include a number of Queensland Government departments, the Commonwealth Departments of Veterans Affairs and Health and Ageing, the Australasian Centre on Ageing, and the Ministerial Advisory Council for Older Persons. The Queensland Government has provided funding for one-year demonstration projects to develop innovative, sustainable and community capacity building responses to reduce social isolation among older Queenslanders.
- In 2003, Queensland Treasury joined with the other State and Territory Treasuries to develop and implement a common intergenerational modelling framework to generate long-term fiscal projections for the States and Territories as a whole, as well as the Commonwealth. Further development of this common framework to address other long-term research questions is currently being considered.

- *The Queensland public sector workforce*

The Queensland public service is also entering a period of generational change, which will require a strategic and proactive approach to workforce management. The Queensland Department of Industrial Relations has undertaken research into the demographic structure of the Queensland Public Sector workforce. Further collaborative work between the Queensland Government and The University of Queensland is being undertaken to develop projections of the public sector workforce, in order to support workforce planning and policy development.

## ATTACHMENT 2

## A2. Health Profile of Queenslanders

This attachment presents information on the health status of the Queensland population in terms of life expectancy, self-reported health status, mortality and burden of disease and injury. Further information on factors influencing the health status of Queenslanders, including older Queenslanders, is available in *Health Determinants Queensland 2004* (Queensland Health 2004).

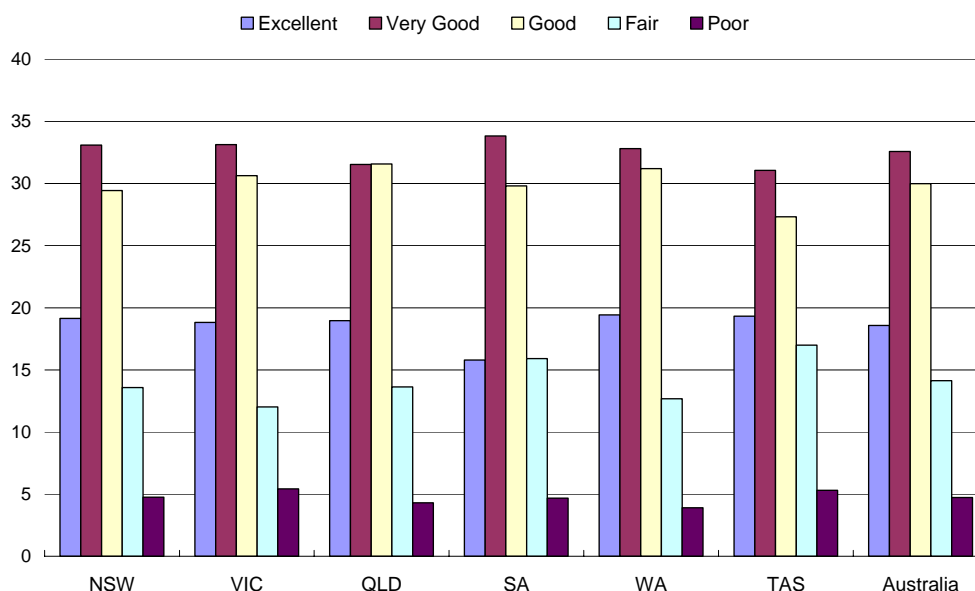
### A2.1 Life expectancy

Life expectancy is used worldwide as an indicator of overall health and well being. In 2001, Australia's life expectancy ranked fifth out of 191 countries assessed by the World Health Organisation. In Queensland, life expectancy was 76.9 years for males and 82.3 years for females between 1999 and 2001. This compares with 77.0 years and 82.4 years for Australia over the same period.

### A2.2 Self-assessed health status

People's perception of their own health has been shown to be a powerful and independent predictor of their future health care use and survival. The Queensland self-reported average for health being excellent, very good or good (82.1 per cent) was slightly higher than the national average (81.1 per cent) (Figure A2.1).

**Figure A2.1. Self Assessed Health Status for Persons >15 years by State in Australia**  
(Per cent response)



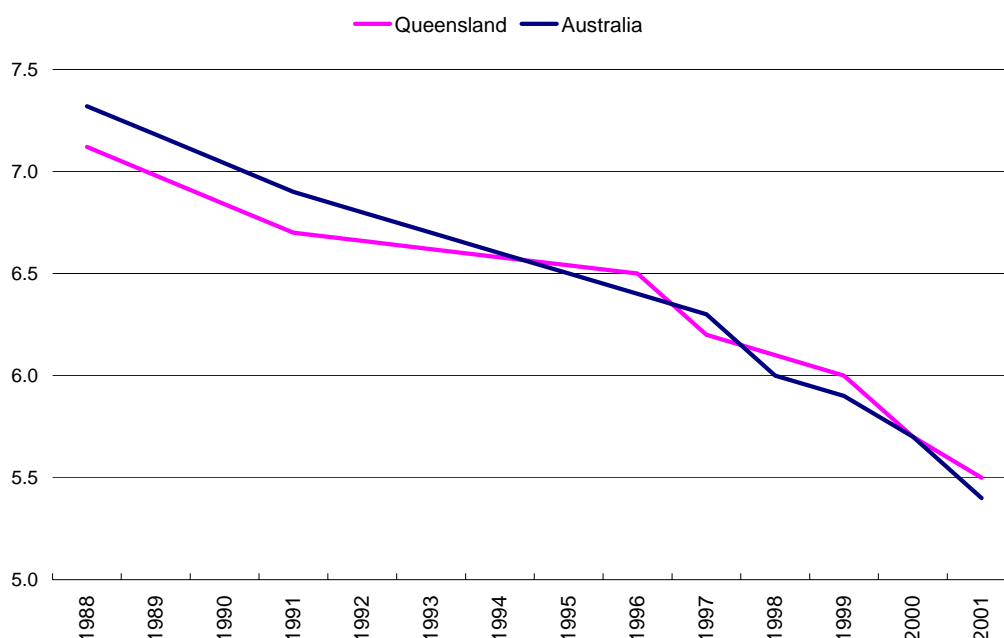
Source: Australian Bureau of Statistics, Cat. No. 4364.0.

## A2.3 Mortality

Queensland's standardised mortality rate at 5.5 per 1,000 people is higher than the national rate at 5.4 per 1,000 people. Queensland's infant mortality and perinatal mortality rates are also higher than the national rate. At 5.9 per 1,000 live births, Queensland's infant mortality rate is second highest of all jurisdictions. At 9.7 per 1,000 live births and fetal deaths combined, Queensland's perinatal mortality rate is the highest of any Australian jurisdiction. These areas represent significant areas for improvement.

In terms of overall mortality, substantial gains have been made in Queensland and Australia in recent years as shown in Figure A2.2. Despite these steady gains, there is considerable potential for further improvement to bring Queensland and Australia in line with best performing European countries.

**Figure A2.2. Mortality Rates, All Causes, Queensland and Australia, 1988-2001**  
(Rate per 1,000 persons)



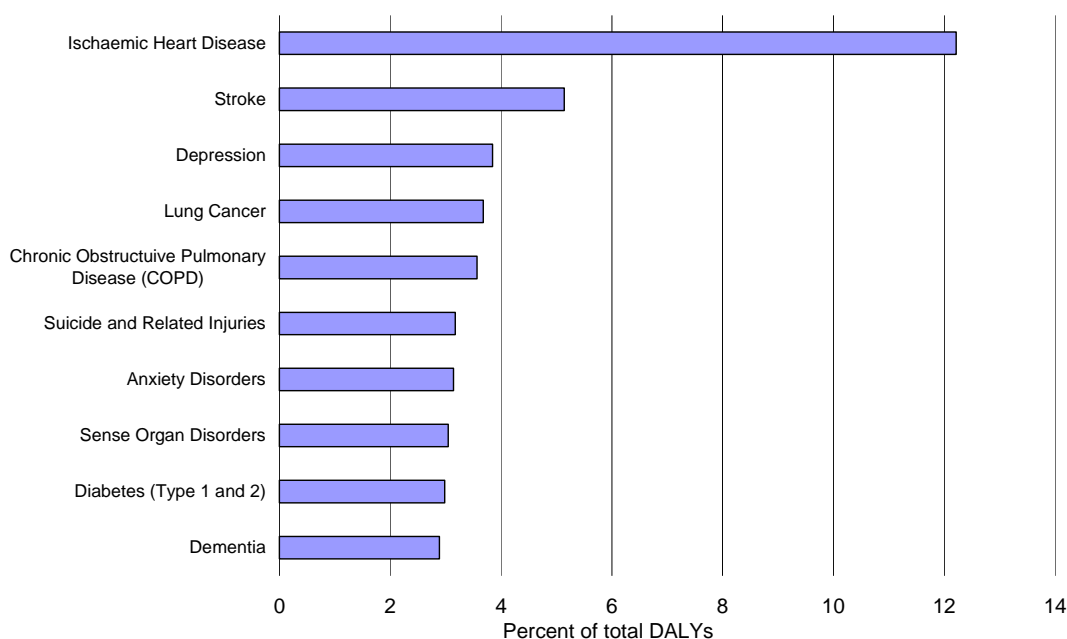
Source: Australian Bureau of Statistics, Cat. No.3303.0.

## A2.4 Burden of disease and injury

While mortality is an important health indicator, a more useful indicator is the total burden of disease (ie. premature mortality and morbidity including disability, impairment, illness and injury). A common metric to measure the burden of disease was developed in the late 1990s and the first – and only – report on Burden of Disease in Australia was published in 1999. The common metric is the Disability Adjusted Life Year (DALY). This work is currently being progressed by the Australian Institute of Health and Welfare in collaboration with The University of Queensland.

Figure A2.3 presents data on the leading burden of disease and injury for Queensland. The leading causes in Queensland are consistent with those nationally. Cardiovascular disease (ie. ischaemic heart disease and stroke) are clearly the major leading causes of the burden of disease and injury.

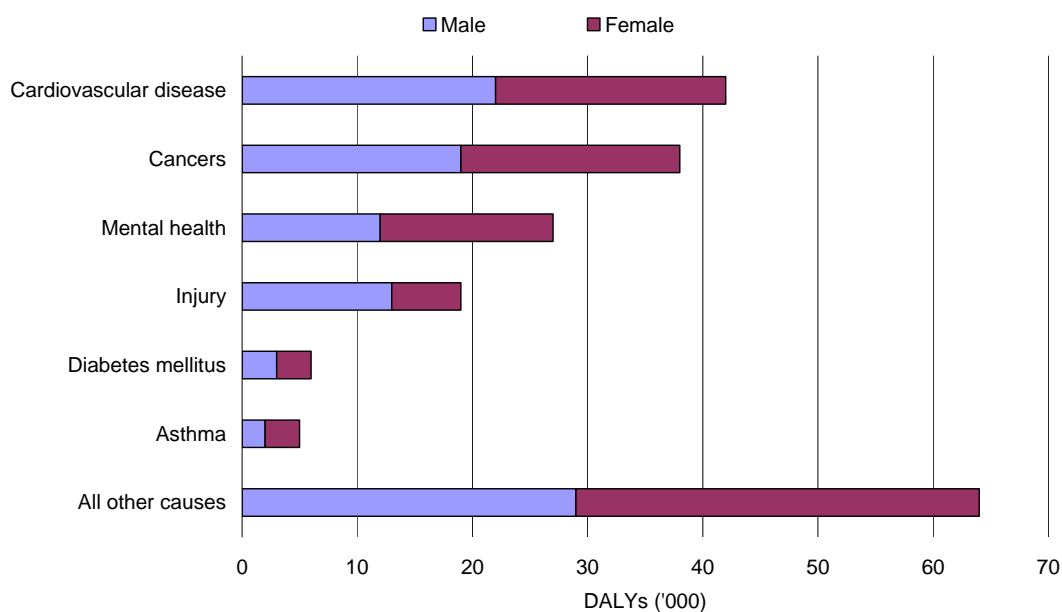
**Figure A2.3 Leading causes of burden of disease (DALYs), Queensland**



Source: Pike, Baade, Harper, Muller and Kennedy, 2002, Quantifying the Burden of Disease and Injury in Queensland 1996-1998.

Significant improvement in health status can be achieved by focusing efforts on the leading contributors to the burden of disease. This is a key reason for the establishment of the National Health Priority Areas (NHPAs). Figure A2.4 shows the relative contribution of the NHPAs to the burden of disease in Queensland.

**Figure A2.4. Disability Adjusted Life Years (DALYs) attributed to NHPAs in Queensland**



Source: Australian Institute of Health and Welfare, 2002, Australia's Health 2002.

The following points provide an overview of NHPAs in Queensland:

- Cardiovascular disease (heart, stroke and vascular disease) is the largest cause of death and burden of disease in Queensland. Queensland rates of cardiovascular disease and its key risk factors of smoking and alcohol use, are significantly higher than the national average. Indigenous Queenslanders suffer heart disease and stroke at several times the rates of their non-Indigenous counterparts. Queensland is performing well in some areas (eg. the in-hospital mortality rate for Acute Myocardial Infarction is approximately 15.7 per cent better than the national average). Key areas for improvement include risk factor prevention, adherence to best practice acute management guidelines (eg the rate of use of beta-blockers for congestive heart failure varied between 25 per cent to 80 per cent across Queensland public hospitals) and referral and participation in cardiac rehabilitation (eg the most recent data indicates that only 50 per cent of eligible patients were referred to cardiac rehabilitation, 1999-2000). Cardiovascular health holds the greatest potential for further health improvement in Queensland.
- Cancer is the second leading cause of the burden of disease in Queensland. Several priority cancers have been identified on the basis of high incidence, mortality and direct costs as well as potential for prevention and many aspects of cancer care and management are applicable to other cancers. The priority cancers are breast, cervical, colorectal, lung, skin and prostate cancers, along with non-Hodgkin's lymphoma. Cancer incidence rates in Queensland appear to have peaked during the 1990s, but the number of new cases has increased as the population grows and ages. Better management and longer survival mean mortality rates are declining. For instance, for the period 1992 to 1997, five-year relative survival rates were higher in Queensland than Australia for all the National Health Priority cancers except prostate cancer (Qld – 82 per cent, Aust – 83 per cent) and female breast cancer (Qld – 84 per cent, Aust – 84 per cent). Of note, the mortality rates for Indigenous females for breast and cervical cancer are significantly higher than the total Queensland female population.
- Diabetes is one of the few conditions in Queensland where incidence is rising. Lifestyle-related risk factors such as obesity and physical inactivity play a significant role in the development and progression of certain types of diabetes. Patterns of obesity and inadequate physical activity suggest it will continue to rise as the population grows and ages. Diabetes prevalence is very high amongst Indigenous populations. Diabetes and its complications (such as renal disease) are a sharply increasing component of health care costs. For example, between 1998 and 2002 the annual intake of new end stage renal disease (ESRD) patients has increased from 294 to 364, a 6 per cent annual growth rate. The current rate of 98 per million population is higher than the national rate of 94 per million. Over the same period the number of dialysis dependent patients (a major treatment for ESRD) increased from 876 to 1,187, an annual increase of 8.9 per cent.
- Injury is the predominant threat to life for children and young adults. It accounted for 6 per cent of all deaths in the general population and 70 per cent of deaths in young males (aged 15-29 years). Other population groups at increased risk from injury are Aboriginal and Torres Strait Islander peoples, rural and remote populations, and older people. The incidence and impact of injury can be reduced by preventing the incidence or severity of injuries, better trauma management and rehabilitation. Eight priority injury areas have been identified under the NHPA initiative based on their burden and amenability to prevention or other strategies. They are: poisoning in children, transport-related injury,

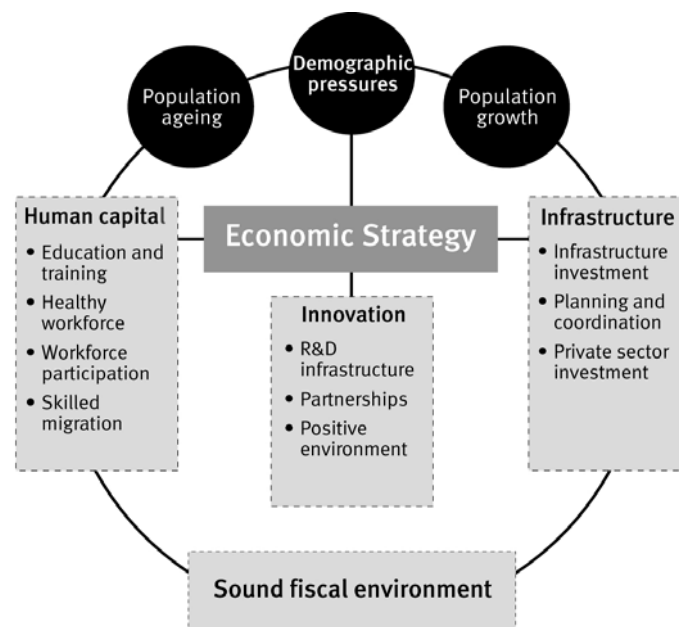
work-related injury, sport and recreational injury, falls among older people and children, burns and scalds, drowning and near-drowning, interpersonal violence and self-harm, including homicide and suicide.

- Asthma poses a considerable health burden in Australia, affecting approximately one in four children, one in seven adolescents and one in 10 adults. Asthma is a major cause of childhood admissions to hospital and is among the 10 most common reasons for seeing a general practitioner. Queensland has the highest prevalence of asthma in Australia.
- Arthritis and osteoporosis account for nearly a quarter of general practitioner consultations in Australia and 29 per cent of visits to specialists.
- Depression is a leading cause of burden of disease. Mental health more broadly is a continuing priority under the 2003-2008 Australian Health Care Agreement, with the provision of targeted funding for mental health service development and reform and the implementation of the Third National Mental Health Plan.

**ATTACHMENT 3****A3. The Queensland Government's Economic Strategy**

Through a focus on increasing productivity growth and labour force participation — the key drivers of economic growth — the Queensland Government's economic strategy aims to generate higher rates of sustainable economic growth. This is not only important for future living standards, but also in helping to address the fiscal pressures associated with population ageing (see Chapter 4). Higher incomes raise the revenue base of government, providing the means to increase spending on core services, such as health, education and infrastructure, without the need for increased tax rates. The economic strategy aims to achieve this by fostering innovation and investment in human capital and infrastructure, within a sound fiscal and economic environment (see Figure A3.1).

**Figure A3.1.**  
**Queensland's Response to Demographic Challenges**



Source: Queensland Treasury

The economic strategy plays a significant role in informing the Government's response to population ageing. The Queensland Government is pursuing a number of complementary policies and initiatives to increase productivity and labour force participation through a focus on innovation and human capital. These are outlined in Budget Paper No. 2, Budget Strategy and Outlook, Queensland Government State Budget 2004-05.



## ATTACHMENT 4

### A4. Long Term Fiscal Modelling

This Attachment provides a high level discussion of the issues surrounding the modelling of long-term fiscal projections, which were referred to in Chapter 4 of this submission.

Overall, it is important to note that long-term fiscal projections are the result of extrapolating the effects of some key assumptions over a 40 year period. Varying these assumptions changes the results significantly. This dependency on assumptions, along with the inherent uncertainty surrounding all long-term projections, means that there is no ‘right’ answer to the question of future fiscal pressure. At best, the main structural variables that will make up the future fiscal environment can be identified and can provide information for policy-makers on the possible futures that governments might face.

In this analysis of long-term fiscal issues, there are three main areas of uncertainty:

1. how productivity growth and labour force participation will impact on fiscal pressure over the long-run;
2. the impact on government expenditures arising from ageing, cost inflation and economic growth translating to higher household incomes and increased demand; and
3. how revenues (grants from the Commonwealth and own source revenue) will track relative to the economy as a whole, and affect fiscal pressure.

Varying the modelling assumptions relating to these three factors produces a wide range of possible fiscal outcomes for Queensland. To illustrate this point, the remainder of this Attachment:

- a) summarises the modelling approach used in determining long-term fiscal pressure;
- b) outlines a range of scenario assumptions;
- c) presents the results of these scenarios; and
- d) discusses a number of research questions.

#### A4.1. Modelling approach

Gauging the effects of ageing on fiscal sustainability is achieved by considering impacts on fiscal pressure. Fiscal pressure may be defined as the extent to which the growth in demand for government services exceeds the growth of total government revenue. For the purposes of projections of fiscal pressure, it is assumed that the Government does not respond to changing fiscal pressure. This causes projected fiscal pressure to be manifested in a “fiscal gap”. Conceptually, the fiscal gap is the difference between State revenue and expenditure excluding net interest payments. The measure, therefore, abstracts from the effect of debt dynamics.

Queensland's long term projections are generated using a quantitative modelling framework which integrates three modules:

1. demographic;
2. economic; and
3. fiscal.

The demographic module for Queensland incorporates the 2003 Queensland Government Medium Series Population Projections (see Attachment 1 for further information). The population projections are based on state-specific fertility, life expectancy and migration assumptions. The model contains projected population numbers for each age group from zero to 100 and over for males and females. The single-year groups are then combined into five-year cohorts for modelling and reporting purposes. The Queensland population projections then feed into both the economic and fiscal modules.

Within the economic module, long-run economic growth is a function of technical progress and demographically-determined labour supply. Demographic and ageing effects filter through the economic module primarily by influencing the future rate of workforce growth and, in turn, economic growth. The potential rate of workforce growth is underpinned by the combination of population growth and current information on age-specific labour force participation rates.

Ageing is transmitted through the fiscal model by influencing three main demographically-sensitive State expenditure areas – Health, Public Order and Safety, and Education. On the State's income side, ageing effects are filtered through its impact on the labour force, in turn the economy, and eventually the State's revenue collections.

## **A4.2. Scenario settings**

Table A4.1 shows the broad assumption settings for a variety of scenarios. This listing is by no means exhaustive, however the various sets of assumptions can be incorporated into three main scenario categories:

- a. economic (productivity growth and labour force participation);
- b. expenditure (real income effect and additional cost factors); and
- c. revenue (specific purpose payments, GST payments and own source revenue).

As discussed in Chapter 4, the effects of ageing within the modelling framework increases health costs, and reduces education and law and order costs, as a proportion of GSP. It also tends to slightly reduce GST revenue and Stamp Duties. The settings for scenarios 6 and 8 best capture these effects and are broadly comparable to the Commonwealth's *Intergenerational Report*. It is important to note however, that none of these scenarios should be interpreted as "likely" or "probable", nor should they be considered as an official view of the Queensland Government.

**Table A4.1. Long term fiscal scenario settings**

Scenario	Economic Settings		Expenditure Settings		Revenue Settings		
	<i>Participation</i>	<i>Productivity</i>	<i>Real Income Effect</i>	<i>Additional Cost Factors</i>	<i>Specific Purpose Payments</i>	<i>GST Revenue</i>	<i>Own Source Revenue</i>
	<b>Productivity and Participation Scenarios</b>						
1	Medium	1.5% pa	75%	No	Grow with GSP	Ageing Effects	Ageing Effects
2	Medium	2% pa	75%	No	Grow with GSP	Ageing Effects	Ageing Effects
3	Medium	2.5% pa	75%	No	Grow with GSP	Ageing Effects	Ageing Effects
4	High	2% pa	75%	No	Grow with GSP	Ageing Effects	Ageing Effects
5	High	2.5% pa	75%	No	Grow with GSP	Ageing Effects	Ageing Effects
	<b>Expenditure Scenarios</b>						
6	Medium	2% pa	100%	Yes	Grow with GSP	Ageing Effects	Ageing Effects
7	Medium	2% pa	50%	Yes	Grow with GSP	Ageing Effects	Ageing Effects
	<b>Revenue Scenarios</b>						
8	Medium	2% pa	100%	No	Grow slower than GSP	Ageing Effects	Ageing Effects
9	Medium	2% pa	100%	No	Grow with GSP	Grow with GSP	Ageing Effects
10	Medium	2% pa	100%	No	Grow with GSP	Grow with GSP	Grow with GSP

For the *economic settings* within Table A4.1, under participation, “medium” corresponds to the medium series labour force participation presented in Chapter 2 in the main body of this submission. This assumes that male labour force participation rates remain at current levels while female participation rates converge to male participation rates. The “High” participation scenario assumes a similar relationship between male and female participation rates as in the medium series and, additionally, allows the male and female participation rates to converge on the projected United States participation rates by 2050. Lastly, under economic settings, different productivity rates are assumed and can be viewed loosely as below average, average and above average productivity growth.

Under *expenditure settings*, variations in the “real income effect” highlight the potential for a future impact of economic growth on household expectations and government expenditure. In short, the level of demand (or public expectations) may be influenced by how well off people are. An increase in per capita incomes (ie. through higher productivity or participation) may result in the public expecting a greater quantity and/or quality of government services. However, higher incomes may lead to more people preferring to use private sector suppliers. In this case, government expenditure will grow by less than the increase in real incomes. This interaction between per capita income and the demand for government services is termed a ‘real income effect’. In Table A4.1, a “100%” real income effect assumes that per capita age-specific expenditure grows in line with per capita Gross State Product (GSP).

However, a “50%” real income effect indicates that per capita age-specific expenditure rises by only half the growth in per capita GSP.

Another potential long term issue on the expenditure side of the budget is the compounding of ageing effects and additional cost factors. One approach to estimating these additional factors is to examine historical expenditure and remove the influences of demographics and general fiscal conditions. Putting in these additional cost factors is indicated as a “Yes”, while excluding them is indicated as a “No” in Table A4.1.

Next, under *revenue settings*, there is significant uncertainty surrounding the future growth of revenue relative to GSP. Around a quarter of the State’s revenue is provided by the Commonwealth in the form of Specific Purpose Payments (SPPs). While some scenarios assume that SPPs grow in line with the economy, there is a risk that potential fiscal pressure on the Commonwealth will slow the growth of SPPs. This is encapsulated in scenario 8.

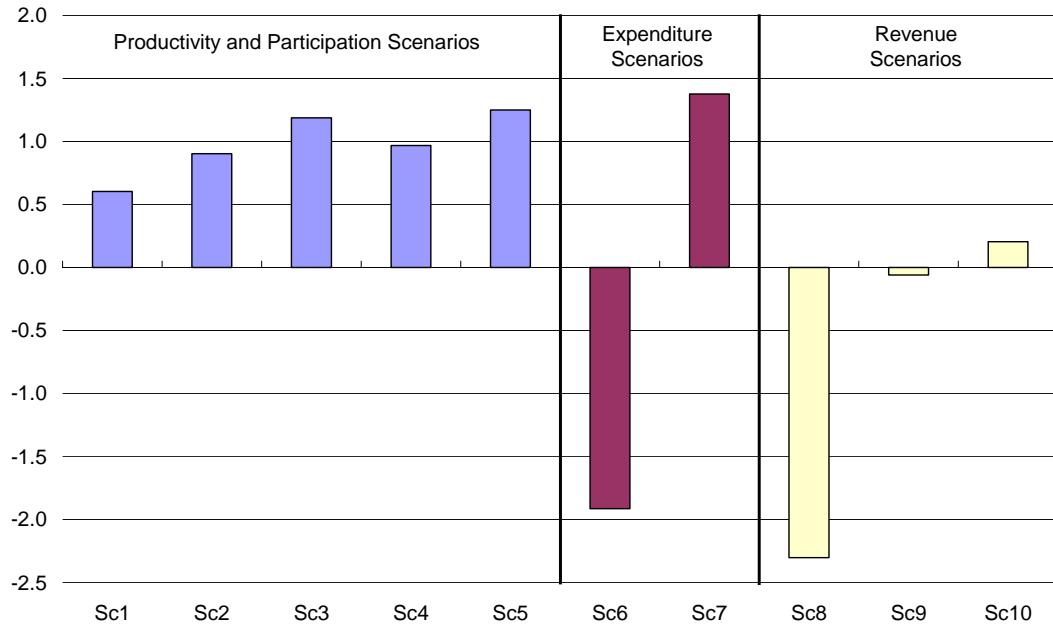
A further quarter of State revenue consists of General Purpose Payments from the Commonwealth, which rely on the Goods and Services Tax (GST). In the long term, GST revenue will be driven by broad macroeconomic developments. It is possible that private consumption (a key driver of GST revenue) will increase relative to GSP, if investment demands go into relative decline due to slowing population and workforce growth. However, the open-economy issues discussed in Chapter 3 make this outcome very uncertain. Additionally, it is expected that the structure of private consumption will evolve towards goods that are GST-free, principally health. This is taken into the modelling framework by applying “ageing effects” to GST revenue in scenarios 1 through 8, resulting in GST revenue declining slightly relative to GSP. Scenario 9 varies this effect by assuming that GST revenue, and hence General Purpose Payments, grow in line with GSP.

Ageing may also have a negative effect on own source revenue. This effect arises primarily from Stamp Duties, which are driven by investment activity in the State. As explained earlier, there is significant uncertainty surrounding investment in the long term, and so the negative impact on Stamp Duties might not eventuate. Accordingly, Scenario 10 varies from Scenario 9 by assuming that all own-source revenue (including Stamp Duties) grows in line with GSP.

### A4.3. Fiscal gap scenario results

The results from implementing the various scenario settings in Table A4.1 are summarised in Figure A4.1.

**Figure A4.1 Queensland Fiscal Gap Scenarios, 2041-42**  
(per cent of GSP)



Source: Office of Economic and Statistical Research

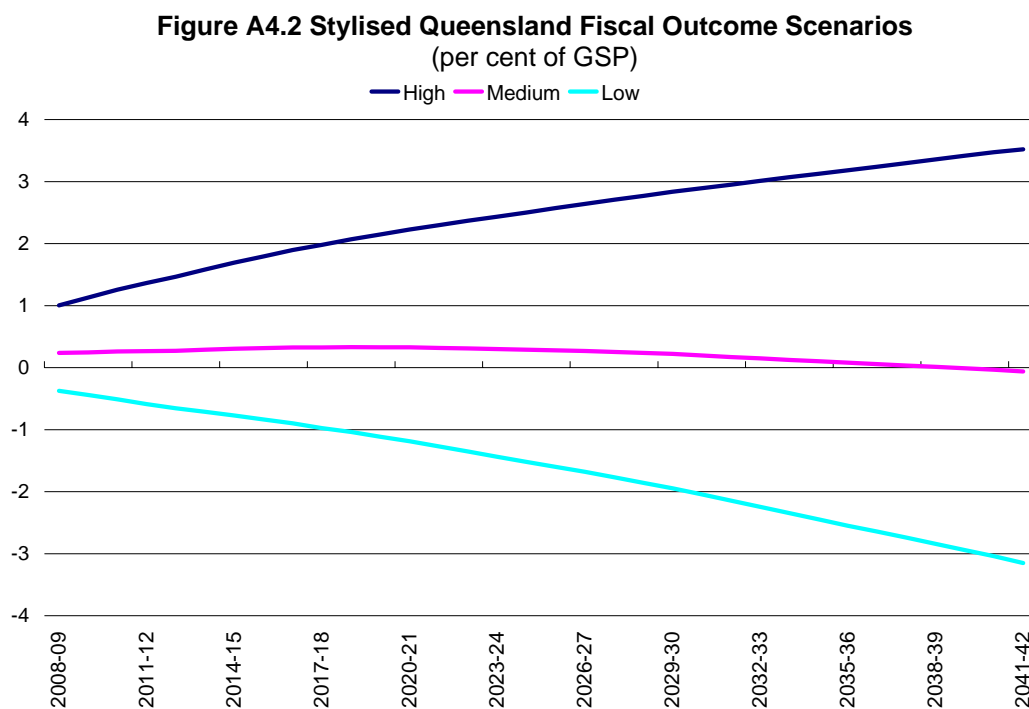
As can be seen in the chart, by comparing the relative size of the 2041-42 fiscal gap produced under scenarios 1, 2 and 3, assuming stronger growth in productivity in the economy over the long term results in an improved fiscal position. Similarly, assuming higher labour force participation has a positive, albeit marginal, impact on the fiscal gap (see scenario 4 compared with 2). Not surprisingly, combining improvements in productivity and high participation has the largest effect (scenario 5).

Turning to the expenditure scenarios, it can be seen that alternative assumptions regarding cost inflation within the modelling framework can have a substantial effect on the results. Comparing scenario 2 with scenario 6, which introduces cost inflation to government expenditure and raises the real income effect to 100 per cent but keeps all other settings unchanged, reveals a substantial widening of the fiscal gap from 0.9 per cent of GSP to -1.9 per cent in 2041-42.

Assumptions relating to the extent to which government services keep pace with rising household demand are critical to the model results. Scenario 7 incorporates cost inflation, but differs from scenario 6 in that the real income effect is set at 50 per cent, indicating that government expenditure increases at half the rate assumed under scenario 6. As can be seen from the chart, this has the effect of maintaining a positive fiscal gap out to the end of the projection horizon.

The treatment of ageing and the rate of growth of revenue relative to the economy as a whole in the modelling are also important in determining possible scenarios for fiscal pressure. Of the three categories of revenue embodied in the modelling framework, the rate of growth of specific purpose payments (SPPs) from the Commonwealth is the most critical: scenario 8 assumes SPPs grow at a slower rate than GSP resulting in a substantially larger fiscal gap compared with other scenarios. By assuming GST payments keep pace with economic growth, the fiscal gap is improved. Finally, the assumption that all three components of revenue move in line with the economy results in a two percentage point turnaround in the fiscal gap over the period (see scenario 10 compared with scenario 8).

A vast array of long term scenarios can be generated by varying this set of assumptions. Figure A4.2 illustrates 3 stylised scenarios, representing high, medium and low fiscal outcomes.



Source: Office of Economic and Statistical Research

The high fiscal outcome is the result of assuming:

- high productivity growth;
- high male and female participation in the labour force;
- moderate real income effect;
- ageing effects on government expenditures;
- little or no cost inflation; and
- revenue, in particular Commonwealth grants, keep pace with economic growth.

The medium fiscal outcome is the result of assuming:

- average productivity growth;
- rising female participation in the labour force but stable male participation;
- moderate real income effect;
- ageing effects on government expenditures;
- little or no cost inflation; and
- revenue, in particular Commonwealth grant, keep pace with economic growth.

Finally, the low fiscal outcome is the result of assuming:

- below average productivity growth;
- steady labour force participation;
- high real income effect;
- ageing effects on government expenditures;
- cost inflation impacting on government expenditures; and
- revenue, in particular SPPs, not keeping pace with economic growth.

The range of possible long term fiscal gap scenarios highlights a variety of areas where government can influence the outcome. It also however brings attention to a number of uncertainties which could significantly affect fiscal pressures over the long term.

#### **A4.4. Key research questions for the Productivity Commission**

In the light of the above discussion, it would be beneficial if the Commission's research could examine the following issues:

- Assumed additional cost factors that compound the effects of population ageing seem to be somewhat contentious, and it is difficult to find overseas studies that take these into account (beyond assuming a real income effect of some sort). *Is it reasonable to assume such additional cost factors and if so, how should they be derived?*
- Under reasonable assumptions, per capita incomes will approximately double in the next 40 years, which raises the issue of what substantially wealthier people (on average) will demand from governments in the future. *Is there any consensus in the literature on the impacts of higher per capita incomes on government expenditure? Is there any consensus in the literature on the willingness to pay for increased services?*
- In a fiscal federation like Australia, the finances of all jurisdictions are effectively linked, with mechanisms like Grants and Horizontal Fiscal Equalisation providing potential mechanisms for the transfer of fiscal pressure. *From the States' point of view, what should be assumed about the possible transfer of future fiscal pressure from the Commonwealth, for example via the potential for gradual erosion of Specific Purpose Payments?*

**ATTACHMENT 5****A5. Social Housing and Older People in Queensland**

In Queensland, the Public Housing program provides specialised seniors' unit accommodation, which is available to single people 55 years and over or couples where at least one partner is 55 years or over. Characteristics of seniors' units are as follows:

- a seniors' unit contains one or two bedrooms usually with a separate lounge/living room. Some units are bed-sitters, with a combined bedroom and lounge/living room;
- seniors' units are located on one level in apartment style buildings, in complexes of one to two storeys;
- seniors' units do not usually have separate yards and in some complexes, tenants share a communal laundry; and
- seniors' units can be located close to transport, provide easier access for carers and helpers, and provide for the companionship of other senior people.

In addition, the Aboriginal and Torres Strait Islander Housing rental program has an older person's policy to assist older Indigenous Queenslanders to access appropriate housing. In recognition of the shorter life expectancy of Indigenous people, the age eligibility for older person's housing in this program is 50 years and over.

In line with general population trends, Table A5.1 highlights the increasing percentage of public housing tenants and applicants who are aged 55 years and over. Between December 2000 and December 2003, the proportion of people who were 55 years and over in Public Housing increased from 19.5 per cent to 22.5 per cent, while the number of applicants increased from 21.9 per cent to 24.2 per cent.

<b>Table A5.1. Number of Dwellings, Occupants and Applicants Aged 55 Years and Over</b>				
<b>Year</b>	<b>Total occupants</b>	<b>Number and percentage of 55+ occupants</b>	<b>Total applicants</b>	<b>Number and percentage of 55+ applicants</b>
Dec 2000	113,778	22,184 (19.5%)	24,390	5,338 (21.9%)
Dec 2003	107,694	24,179 (22.5%)	31,548	7,622 (24.2%)

Source: Queensland Department of Housing

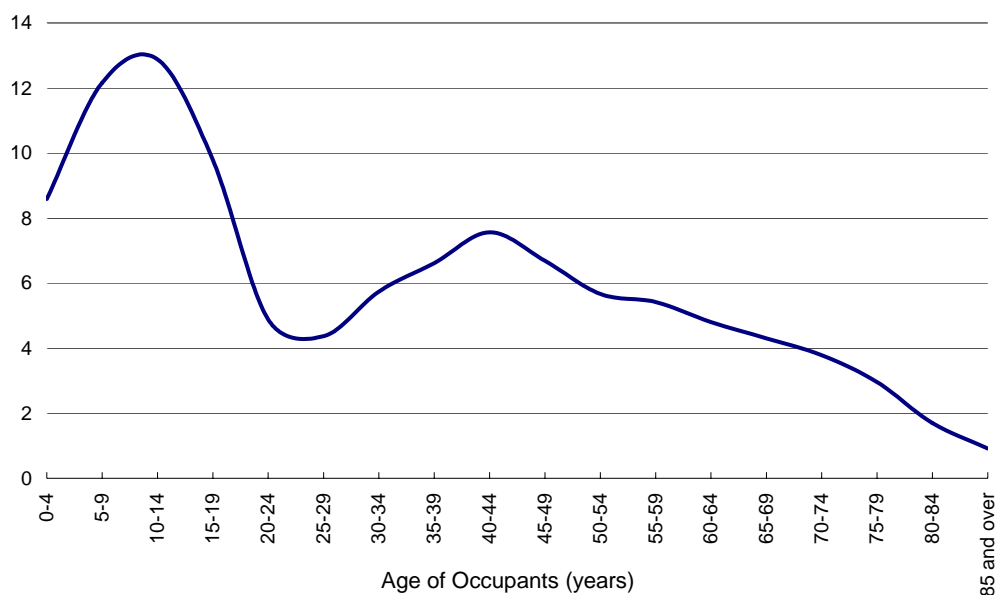
**A5.1 Age profile of tenants in public housing as at June 2003**

Figure A5.1 shows that the total number of public housing occupants aged 55 years and over was 23,868 as at June 2003. This represents approximately 22 per cent of the total number of public housing tenants and approximately 3 per cent of Queensland's total population of people aged 55 years and over.

Of the 300 dwelling commencements in the 2002-03 Queensland Government capital works program, approximately 50 per cent (155 out of 300 dwelling commencements) were built to adaptable standards and therefore suitable for people with mobility difficulties, including older people.



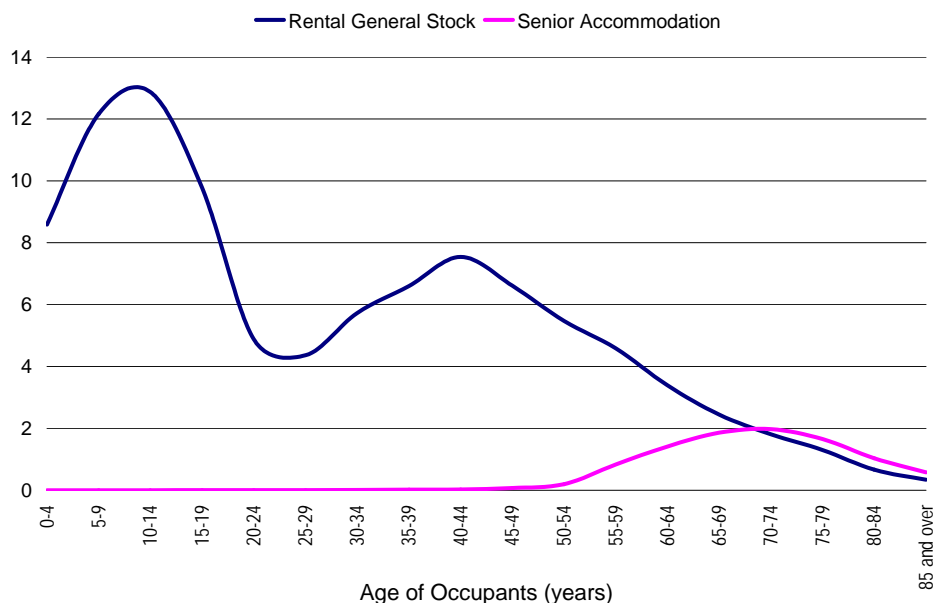
**Figure A5.1. Number of Public Housing Occupants (000s) by Age**



Source: Queensland Department of Housing

Figure A5.2 shows that approximately 40 per cent of seniors (9,332 out of 23,868) are accommodated in seniors' units. These data suggest that there may be a gap between the need for targeted seniors' accommodation and the proportion of these units in the overall portfolio. As Queensland's population ages, this gap could become exacerbated.

**Figure A5.2. Public Housing Occupants (000s) by Age and Accommodation Type**

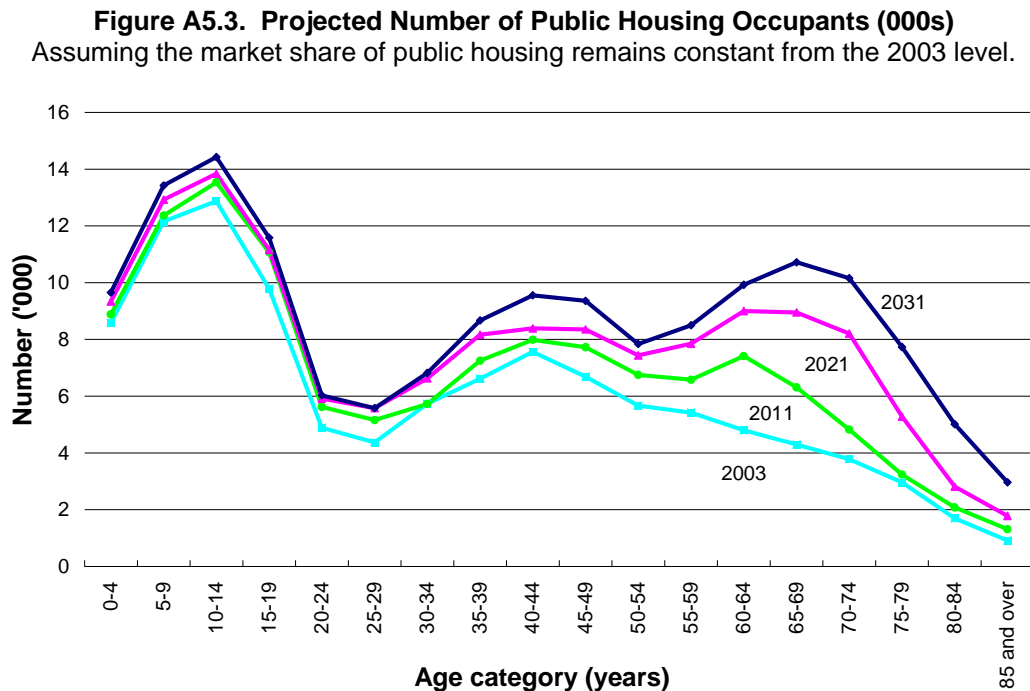


Source: Queensland Department of Housing

Some simple modelling, with strict assumptions in place, assists in understanding some possible impacts of Queensland's ageing population on the portfolio and its capacity to respond to future housing need.

*Scenario: Projected age profile of Public Housing occupants assuming the Department continues to house the same percentage of Queensland's total population for each age cohort.*

Figure A5.3 shows the projected age profile of occupants in public housing for 2011, 2021 and 2031. It assumes public housing will continue to house the same percentage of the State's population for each age cohort over time, and therefore assumes the portfolio has the capacity to grow. Reflecting the ageing Queensland population, the graph shows that the most significant increase in terms of number of people housed will be amongst those aged 55 years and over. This scenario suggests there will be impacts on the Government in terms of an increased need to provide appropriate, affordable housing for seniors, other things being equal.



Source: Queensland Department of Housing, ABS Cat. No. 3201.0 and Queensland Population Projections, 2003, Medium Series

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