

2002-03 BUDGET PAPER No. 5

INTERGENERATIONAL REPORT

2002-03

CIRCULATED BY
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TREASURER OF THE COMMONWEALTH OF AUSTRALIA,
FOR THE INFORMATION OF HONOURABLE MEMBERS
ON THE OCCASION OF THE BUDGET 2002-03
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FOREWORD

This is Australia's first Intergenerational Report. The report provides a basis for considering the Commonwealth's fiscal outlook over the long term, and identifying emerging issues associated with an ageing population.

The Intergenerational Report is one of a series of Budget papers, the purpose of which is to provide information supplementary to that in the Budget Speech.

As required by the Government's *Charter of Budget Honesty Act 1998*,

'An intergenerational report is to assess the long term sustainability of current Government policies over the 40 years following the release of the report, including by taking account of the financial implications of demographic change.'

While the National Commission of Audit, established by this Government in 1996, considered the impact of demographic change on Commonwealth finances, this report is the first by any Australian government to assess the long-term sustainability of government finances in detail.

The United Kingdom, United States and New Zealand governments, and the Organisation for Economic Co-operation and Development (OECD) and European Economic Policy Committee (EEPC) have also recently prepared similar long-term reports on public finances. These reports, like this Intergenerational Report, use projections to consider long-term sustainability.

The report presents these projections as a percentage of Gross Domestic Product (GDP) so they are considered relative to the size of the economy. Small changes in GDP, even 0.1 per cent, are equivalent to significant amounts in dollar terms when prices are assumed unchanged (real terms). However, the amounts are even more significant in dollar terms when the effect of likely price changes over time is taken into account (Table 1).

Table 1: Projected real and nominal GDP (\$m)

		2001-02	2011-12	2021-22	2031-32	2041-42
Nominal	1.0 per cent of GDP	7,100	12,179	19,467	30,236	46,559
	0.1 per cent of GDP	710	1,218	1,947	3,024	4,656
Real (2001-02 dollars)	1.0 per cent of GDP	7,100	9,583	11,966	14,519	17,465
	0.1 per cent of GDP	710	958	1,197	1,452	1,747

Source: Treasury projections.

Notes

- (a) The following definitions are used in this Budget Paper:
- ‘real’ means adjusted for the effect of inflation; and
 - one billion is equal to one thousand million.
- (b) Figures in tables and generally in the text have been rounded. Discrepancies in tables between totals and sums of components are due to rounding.
- (c) The following notations are used:
- | | |
|-----|------------------------------|
| \$m | \$ million |
| ** | information is not available |
| neg | negligible |
- (d) References to the ‘States’ include the Territories.

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OVERVIEW

Commonwealth government finances are strong. The Commonwealth Budget recorded an accumulated cash surplus of \$23.7 billion from 1997-98 to 2000-01. During this period, Commonwealth government net debt, already one of the lowest among the industrialised economies, has fallen from \$82.9 billion to \$39.3 billion. This sound fiscal management has provided the platform for vigorous, low inflationary growth — generating jobs and higher incomes for Australians.

Nevertheless, a steadily ageing population is likely to continue to place significant pressure on Commonwealth government finances. In addition, on the basis of recent trends it seems likely that technological advancement, particularly in health care, and the community's expectation of accessing the latest health treatments will continue to place increased demands on taxpayers' funds.

Australia is well placed to meet the challenges an ageing population presents. Australia's superannuation system generates private saving for retirement, complementing an age pension system that is better targeted and more affordable than in many other industrialised countries. In addition, Australia's health system is very efficient by international standards. Furthermore, Australia's social welfare payments are well targeted and government debt is low.

The projections in this report suggest that, if policies are not adjusted, the current generation of taxpayers is likely to impose a higher tax burden on the next generation. The required adjustment in taxes and spending is about 5.0 per cent of GDP by 2041-42, or \$87 billion in today's dollars. Governments will need to exercise sound policy management to minimise the tax burden transferred to the next generation, particularly if Australia is to keep its position as a lower taxing and spending country.

Although the ageing of the Australian population is not expected to have a major impact on the Commonwealth's budget for at least another 15 years, forward planning for these developments is important, to ensure that governments will be well placed to meet emerging policy challenges in a timely and effective manner. By maintaining sustainable government finances, the Government avoids compromising the wellbeing of future generations by the activities of the current generation.

Major policy priorities should continue to include both those that increase the economy's capacity to generate revenue, and those that reduce the growth in government spending. Key priorities for ensuring fiscal sustainability should be:

- achieving budget balance, on average, over the economic cycle. Continuing the Government's current medium-term fiscal strategy will ensure Commonwealth government debt remains low as pressures due to an ageing population begin to build significantly around 2020;
- maintaining an efficient and effective medical health system, complemented by widespread participation in private health insurance;

- containing growth in the Pharmaceutical Benefits Scheme (PBS). Rapid PBS growth over the past decade means it could be one of the most significant areas of future spending pressure on the Commonwealth;
- developing an affordable and effective residential aged care system that can accommodate the expected high growth in the number of very old people (people aged 85 or over);
- preserving a well-targeted social safety net that encourages working-age people to find jobs and remain employed;
- encouraging mature age participation in the labour force; and
- maintaining a retirement incomes policy that encourages private saving for retirement, and reduces future demand for the Age Pension.

FISCAL SUSTAINABILITY

Fiscal sustainability is the government's ability to manage its finances so it can meet its spending commitments, both now and in the future. It ensures future generations of taxpayers do not face an unmanageable bill for government services provided to the current generation.

One of the key requirements for sustainable government financial arrangements is a balanced budget over the medium to long term, given a reasonable degree of stability in the overall tax burden. This objective is consistent with stabilising Commonwealth general government net debt and, if the Commonwealth's capital stock grows, improving net worth.

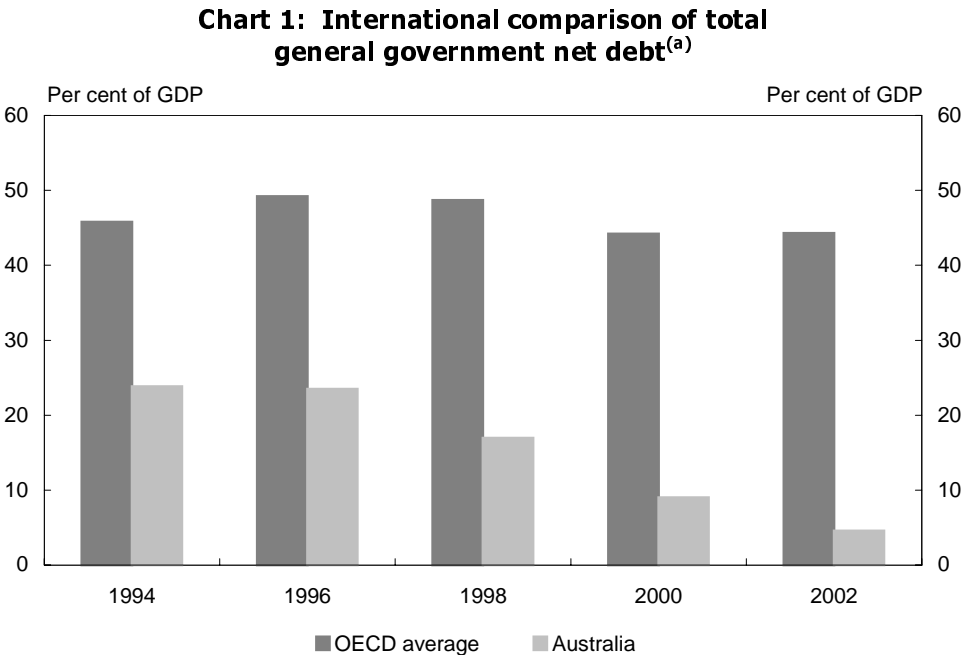
Maintaining fiscal sustainability improves the prospects for higher living standards, including strong and stable economic growth by:

- promoting fairness in distributing public resources between generations of Australians;
- maintaining Commonwealth debt at low levels. This helps maintain low domestic interest rates which, over time, promote private sector investment;
- providing greater stability and certainty of fiscal outcomes, contributing to an environment more conducive to long-term productive investment;
- reducing the risk of Australian living standards fluctuating significantly due to international economic shocks, and providing greater capacity for the government to deal with future uncertainties; and
- ensuring governments continue to provide essential goods and services that the private sector does not provide sufficiently.

Disciplined fiscal policy is critical to achieve a higher growth of GDP per person. It helps maintain low inflation, increases national savings and encourages governments to invest efficiently in people and infrastructure.

Since gaining office in 1996, the Government’s fiscal policy has been consistent with its medium-term strategy. From 1997-98 to 2000-01, it achieved an accumulated cash surplus of \$23.7 billion. Furthermore, the level of Commonwealth general government net debt has fallen steadily from the 1995-96 peak of 19 per cent of GDP to an expected 4.6 per cent in 2002-03.

Australia’s general government net debt position is strong compared with OECD countries (Chart 1).



(a) Data are for the total general government sector (that is, the aggregate of all levels of government including the social security sector).
Source: OECD Economic Outlook (70) Dec 2001, ABS Cat. No. 5501.0 (various), 5512.0 (various) and 5513.0 (various), and Commonwealth Government Final Budget Outcomes. For 2002, data is derived from jurisdictions’ 2001-02 mid-year reports and Treasury estimates.

FUTURE PROSPECTS

Over time, various factors may affect significantly the government’s fiscal position. In particular, the ageing of the population may create a greater demand for Age Pensions and health and aged care spending. Already the need to keep up with changing technology and community expectations of accessing the most advanced diagnostic

tests and treatments are increasing demands on government finances; these are likely to continue.

Consequently, this report focuses on Commonwealth programmes in health, social safety net payments and education, as these are most sensitive to population factors, economic trends and technological advancements.

Uncertainties

As projections are uncertain, the results indicate a possible future, but within a wide band of uncertainty. The possible future position of government finances is based on extrapolating current policies and projecting demographic and economic trends and assumptions including:

- future population growth rates;
- the ageing of the population;
- future productivity growth rates;
- future economic growth; and
- expected growth in the underlying cost of a range of government programmes (for example, rising health costs accompanying the introduction of new, more expensive treatments).

Even so, an analysis of the sensitivity of the projections to plausible changes in these trends and assumptions shows that the broad policy conclusions still hold.

Demographic prospects

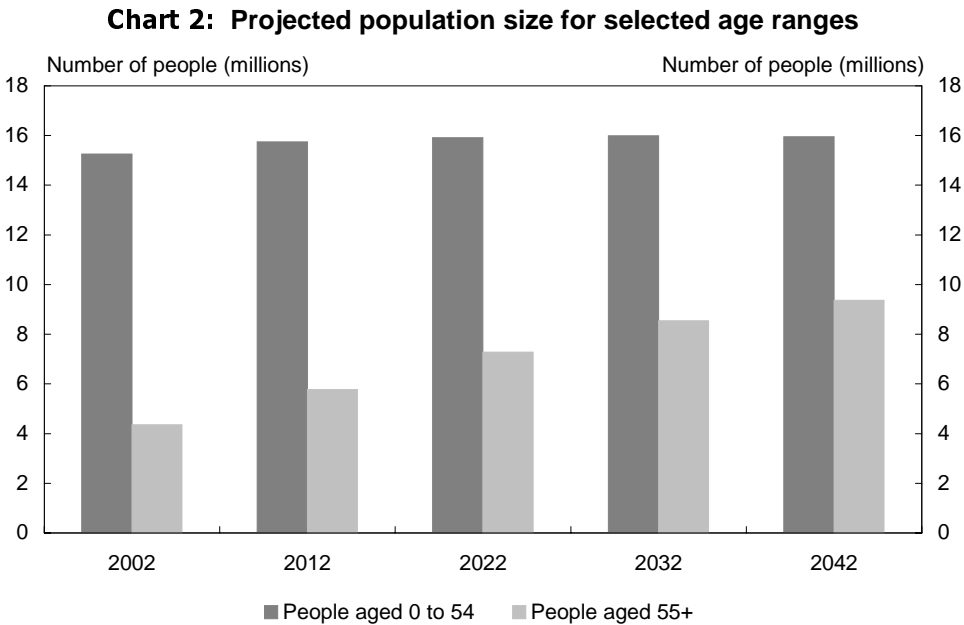
Australia, like other OECD countries, is experiencing an ageing of its population, driven by declining fertility and mortality rates. Since the mid-1970s the total fertility rate of Australian women has been well below the rate needed for population replacement. Over the same period, life expectancy has increased, partly due to high standards of public health.

The number of births per Australian woman is projected to fall from 1.75 in 2000 to 1.6 by 2042. Mortality rates also are projected to fall over the next four decades, leading to significant gains in life expectancy. In 2042, life expectancy at birth for men is projected to be 82.5 years, which is 5.3 years longer than their life expectancy at birth in 2002. In 2042, life expectancy at birth for women is projected to be 87.5 years, which is 4.9 years longer than their life expectancy at birth in 2002.

Net overseas migration slightly offsets the rate of population ageing, as on average, migrants are younger than the resident population. This report assumes net overseas

migration will continue to be around 90,000 people per year, with the same age and gender mix as currently.

By 2042, Australia’s population is projected to increase by around 30 per cent, to over 25 million people. The number of people aged 55 and over will grow faster than the number aged under 55 (Chart 2).



Source: Treasury projections.

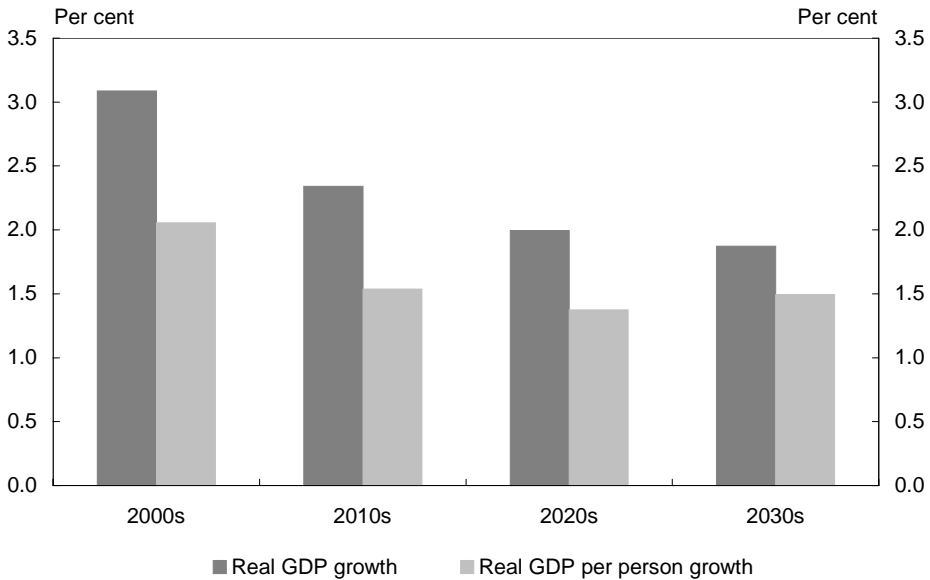
Economic prospects

Over the next four decades, economic growth is projected to slow relative to the outcomes achieved over the past decade, reflecting lower productivity and employment growth rates. Productivity growth is assumed to return to around its 30-year average, below the growth of the 1990s. Employment growth is expected to slow, reflecting lower labour force growth due to lower population growth and a falling rate of overall labour force participation.

Productivity growth is the key driver of real GDP growth, but is extremely difficult to forecast over the long term. If future labour productivity growth rates differ from the 30-year average, economic growth could vary significantly from that projected.

Real GDP growth per person, a measure of growth in living standards, also is expected to slow over the coming decades, but not as much as the growth rate of real GDP (Chart 3).

Chart 3: Projected average annual growth in real GDP and real GDP per person

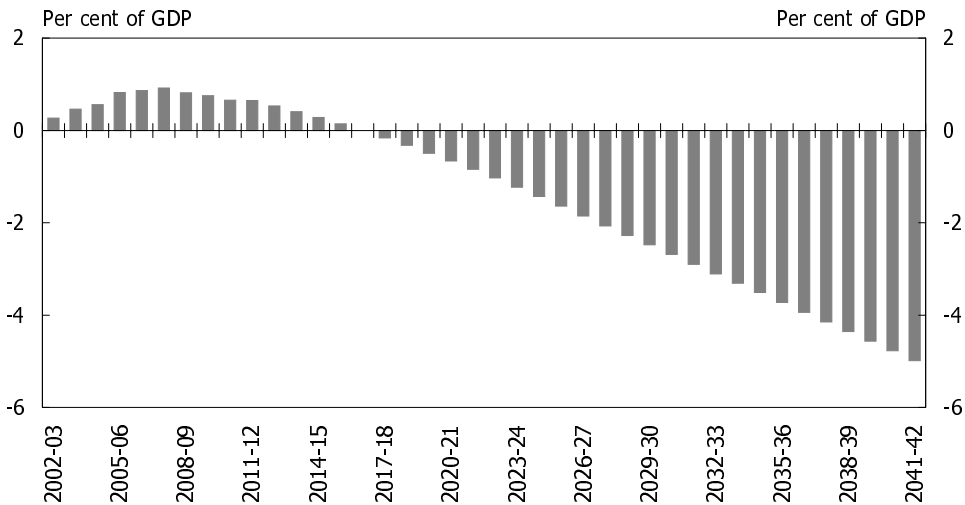


Source: Treasury.

IMPLICATIONS FOR GOVERNMENT FINANCES

Under current policy settings, over the next decade, Commonwealth revenue is projected to exceed spending. However, after about 15 years, Commonwealth spending is projected to exceed revenue (Chart 4). By 2041-42, the gap between spending and revenue is projected to grow to 5.0 per cent of GDP. To prevent the budget moving into deficit, future generations of taxpayers would face higher taxes, raising around \$87 billion more by 2042, or governments would need to reduce the projected growth in spending.

Chart 4: Projection of fiscal pressure



Source: Treasury projections.

Revenue

Over the coming decades, Commonwealth total revenue is assumed to remain constant as a proportion of GDP. However, the projection reflects the expectation that slower population growth will affect labour force growth, personal income tax and GDP in similar ways.

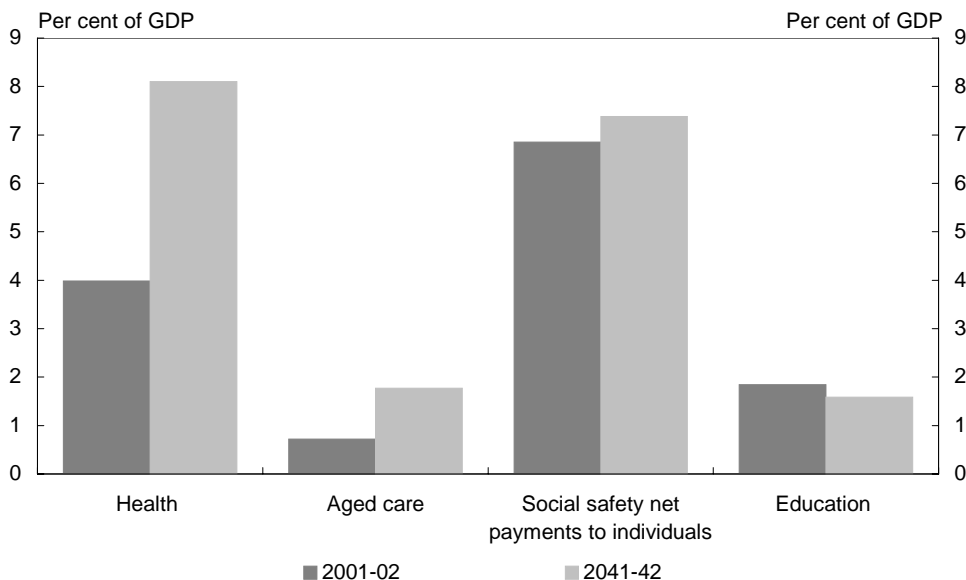
While total revenue has fluctuated around 24 per cent of GDP over the last three decades, it fell substantially as a result of the tax cuts and Goods and Services Tax (GST) introduced under *The New Tax System*. As all GST revenue is passed directly to the States, it is not classified as Commonwealth revenue. Commonwealth revenues are projected to remain at 22.4 per cent of GDP from 2005–06 to 2041–42.

Spending

Over half of Commonwealth government spending is directed to health and aged care, the social safety net (payments to individuals) and education. All of this spending is sensitive to demographic changes.

Spending on health and aged care accounts for much of the projected rise in Commonwealth government spending over the next four decades. As a proportion of GDP, payments to individuals should increase and education spending should decrease modestly (Chart 5).

Chart 5: Projected Commonwealth spending by category



Source: Treasury projections.

Commonwealth spending on government superannuation is projected to decline fairly steadily, from 0.6 per cent of GDP in 2001-02 to 0.3 per cent of GDP in 2041-42. Other areas of government spending are assumed to remain constant (in total) as a share of GDP, even though some will grow more slowly than the general economy, while others will grow at a faster rate. These areas are not demographically driven and include defence, assistance to State and Local governments and the environment. However, the future funding requirements of these policy areas are uncertain and may involve additional pressure on future budgets.

Health and aged care

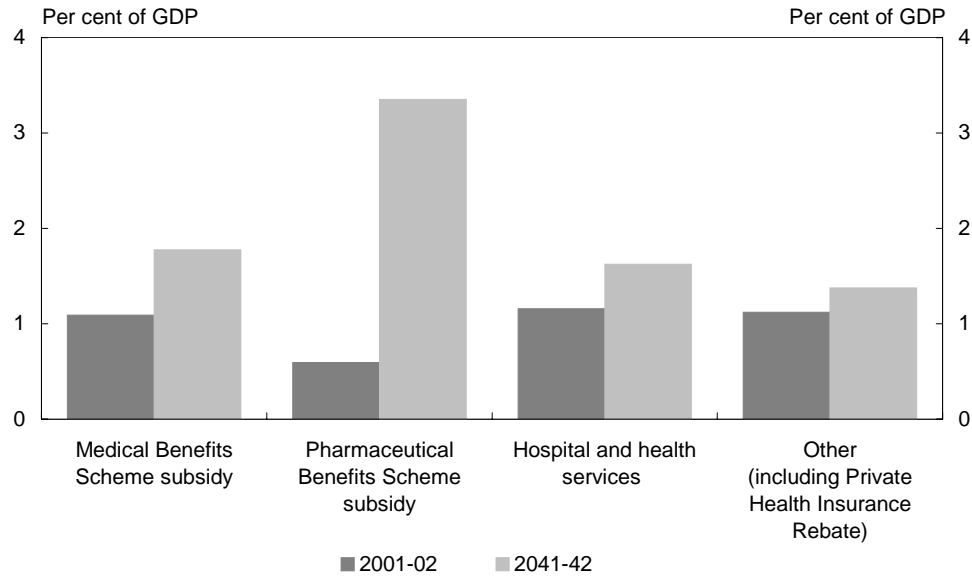
The Commonwealth is the primary funder of health and aged care services in Australia. It funds Medicare, which incorporates the Medical Benefits Scheme; the Pharmaceutical Benefits Scheme (PBS), which subsidises selected pharmaceuticals; and the Private Health Insurance Rebate. It also contributes to State funding of public hospital services and provides funding to non-government organisations for services such as residential aged care, community care and indigenous health care.

Over the past three decades, Commonwealth health spending has more than doubled, to 4.0 per cent of GDP in 2001-02. In recent years, spending on the PBS has been the fastest growing component. In the decade to 2000-01 PBS spending as a percentage of GDP more than doubled.

Although population growth and ageing affect health spending, these factors account for only around one-third of the recent growth. Much of the growth has come from the demand for new technology and treatments. Australians now expect to access more

expensive diagnostic procedures and new (and more expensive) medications listed on the PBS. Unless addressed, these trends are likely to continue to drive health spending over the next four decades, pushing up Commonwealth health spending to 8.1 per cent of GDP in 2041-42. All areas of health spending are projected to increase, with PBS spending projected to rise from around 0.6 per cent of GDP in 2001-02 to 3.4 per cent by 2041-42 (Chart 6), more than a five fold increase in its share of the economy. The reforms to the PBS implemented in the 2002-03 Budget have helped reduce the overall cost of the scheme. Ongoing sound management of the PBS will be required to keep long-term growth in the scheme sustainable, to allow governments to continue providing access to affordable medicines for all Australians.

Chart 6: Projected growth in components of Commonwealth health spending



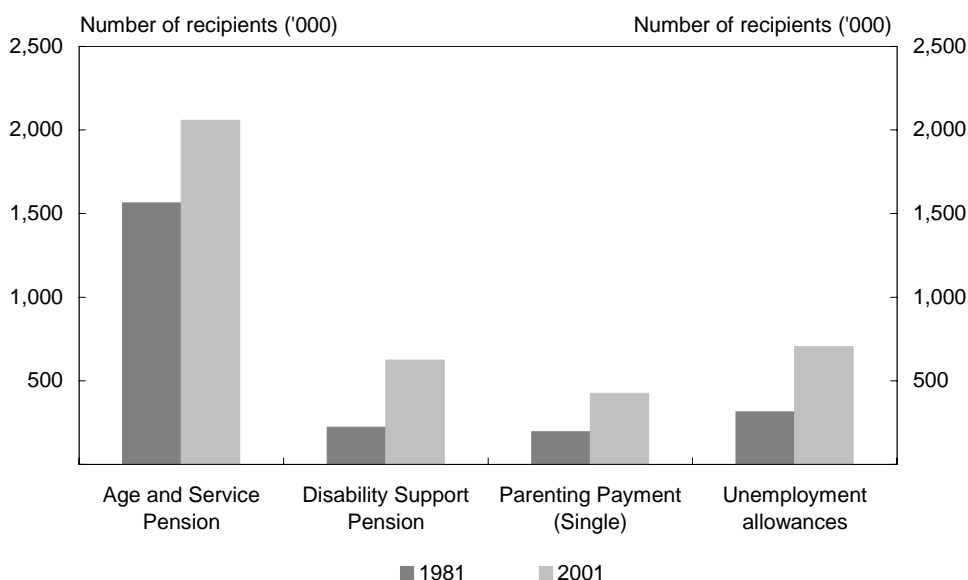
Source: Treasury projections.

As the number of very old people increases, spending on aged care is also projected to increase from 0.7 per cent of GDP in 2001-02 to 1.8 per cent of GDP in 2041-42. Aged care is the most demographically sensitive area of government spending and the number of very old people is expected to increase significantly.

Payments to individuals

Payments to individuals include Age and Service Pensions, unemployment allowances, Disability Support Pension, Parenting Payment (Single) and family payments. These payments account for about a third of Commonwealth spending. The number of people receiving social safety net payments is rising significantly and is a key driver of rising spending on these payments (Chart 7).

Chart 7: Numbers of recipients of major Commonwealth payments to individuals 1981 and 2001



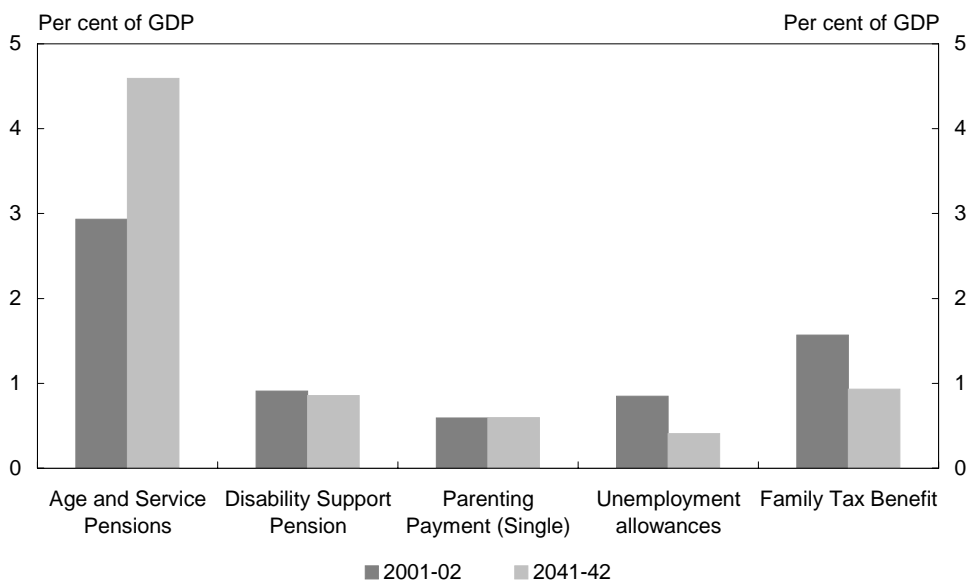
Sources: Department of Social Security annual report 1980-81 and Department of Family and Community Services *Income Support Customers — a Statistical Overview*. Results for 2000 and 2001 are unpublished. Service and War Widows data are from the Department of Veterans Affairs.

Age and Service Pension payments are projected to rise from 2.9 per cent of GDP in 2001-02 to 4.6 per cent of GDP in 2041-42 (Chart 8). By 2041-42, the proportion of the population aged over 65 will be double current levels, significantly increasing the proportion of the population eligible for the Age or Service Pension. However, an increased proportion of retired people drawing incomes from their superannuation savings should help offset this. By reducing the proportion of retired people receiving a full Age Pension, compulsory superannuation should lessen significantly the fiscal pressures on the Commonwealth over the next four decades.

Payments to people of working age — unemployment allowances, Disability Support Pension, Parenting Payment (Single) — as a proportion of GDP is projected to decline, from 2.4 per cent in 2001-02 to 1.9 per cent in 2041-42. This mainly reflects the projected fall in unemployment allowances as the unemployment rate is projected to fall. It also reflects the indexation of unemployment allowances to the Consumer Price Index (CPI) which grows slower than wages and GDP per person.

Payments to families with children are projected to fall significantly as a proportion of GDP, from 1.6 per cent in 2001-02 to 0.9 per cent in 2041-42, as the proportion of the population aged 15 and under declines, and significant elements of family assistance payments are indexed to the CPI.

Chart 8: Projected Commonwealth payments to individuals by type



Source: Treasury projections.

Education and training

Commonwealth government spending on education and training accounts for 7 per cent of all Commonwealth spending, with around half of this allocated to government and non-government schools, and around a third to higher education institutions.

In recent years, demands for a more skilled labour force and the desire for education have increased, driving up the rate of participation in the university sector, and in vocational education and training. At the same time, the proportion of the population in the principal age group for education (5 to 24 years) has fallen from 36 per cent in 1972 to 28 per cent in 2002.

Reflecting these trends, Commonwealth spending on education and training, while continuing to grow at a solid rate, is likely to decline as a share of GDP over the next four decades, from 1.8 per cent of GDP in 2001-02 to 1.6 per cent of GDP by 2041-42.

PART I: MAINTAINING SUSTAINABLE GOVERNMENT FINANCES

Broadly defined, sustainability requires the maintenance of appropriate economic, social and environmental conditions through time to ensure the wellbeing of future generations is not compromised by the activities of the current generation.

The overarching objective of the Government's economic policy is to improve the wellbeing of Australians in a way that can be sustained over time. This relates to both the current generation of Australians and future generations. The Government's policy framework aims to ensure that economic, social and environmental policies complement each other to bring about sustainable improvements in wellbeing.

This report assesses the financial implications of continuing current Government policies over the next four decades. The focus is on the long-term consequences of current policy commitments on the overall budget balance.

Achieving underlying cash balance, on average, over the longer term is consistent with stabilising nominal levels of Commonwealth general government net debt, as the underlying cash balance in a period is broadly similar to the change in net debt.¹ Moreover, maintaining budget balance, on average, is also consistent with improving Commonwealth general government net worth over time (assuming the Commonwealth's capital stock grows).²

THE BENEFITS OF SUSTAINABLE GOVERNMENT FINANCES

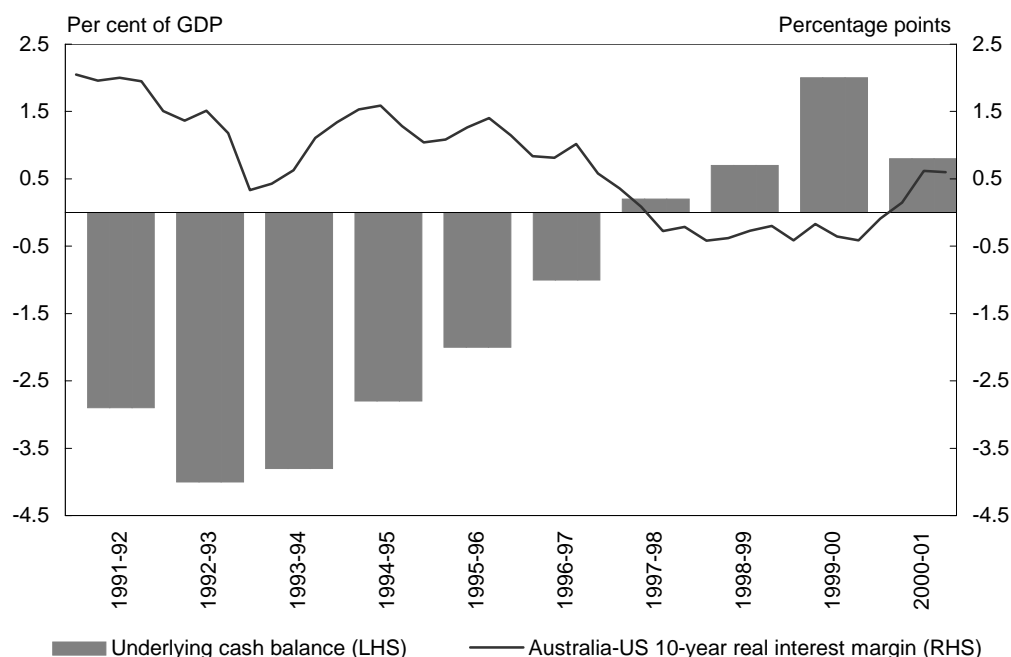
Fiscal sustainability is an important precondition for long-term improvements in living standards and also assists the pursuit of social and environmental objectives. In particular, fiscal sustainability:

- raises the prospects for higher living standards by promoting stronger and more consistent economic growth. This is achieved through lower interest rates (Chart 9 shows how Australian interest rates have improved relative to the United States since the return to budget surplus), an enhanced environment for investment and a reasonable degree of stability in the overall tax burden;

1 The underlying cash balance does not precisely correlate with changes in the level of net debt, largely because equity transactions (such as the privatisation of government business enterprises) affect net debt but are excluded from the calculation of the underlying cash balance.

2 The achievement of budget balance, on average, over time will stabilise government liabilities in nominal terms. Provided that the Commonwealth is undertaking some investment (net of depreciation and capital sales), the Commonwealth's assets and net worth will rise over time.

**Chart 9: Budget balance and long-term real interest margin
Australia and the United States 1991-92 to 2000-01**



Note: Expected inflation data is calculated as the long-term bond rate less index bond yields.

Source: RBA Bulletin (various) and Treasury.

- reduces the risk of major fluctuations in the living standards of Australians as a result of international economic shocks. Australia is a small, open economy with a highly traded currency, reliance on foreign investment and a relatively high level of private net external debt. Achieving fiscal sustainability improves investor confidence, thereby reducing the economy's vulnerability to changes in investor sentiment. For example, during the Asian financial crisis, the Commonwealth's strong fiscal position was very important in maintaining financial market confidence and shielding Australia from instability;
- improves the government's capacity to respond to unforeseen circumstances, such as a natural disaster;
- ensures that the government can continue to provide essential goods and services that the private sector does not provide sufficiently. For example, the government provides income support payments, funds for hospitals, schools, clean air and water; and
- promotes fairness in the distribution of public resources between generations of Australians. This is known as intergenerational equity. Fiscal sustainability promotes intergenerational equity by ensuring that the level of government debt passed onto future generations is appropriate. Fiscal outcomes that lead to the

ongoing accumulation of debt, without funding socially productive investments, transfer the cost of paying for the lifestyle of the current generation to future generations.

THE GOVERNMENT'S APPROACH TO FISCAL SUSTAINABILITY

Sustainable government finances can be promoted through careful planning and sound decision-making. This requires the development of a policy framework that is characterised by:

- a disciplined approach to budgeting;
- transparent reporting of intentions and outcomes, including the longer-term cost of policy decisions; and
- accountability for decisions and results.

In pursuing fiscal sustainability, the Government has put in place a robust fiscal framework to encourage careful planning and sound decision-making. Key elements include the *Charter of Budget Honesty Act 1998* and the medium-term fiscal strategy.

The Charter provides for greater discipline, transparency and accountability in fiscal policy. It requires the Government to outline its fiscal strategy and report on the progress made towards achieving the stated fiscal objectives. This strategy is to be based on the principles of sound fiscal management stated in the Charter (Box 1).

The Charter also requires the Government to explicitly outline its fiscal strategy. This Government's medium-term fiscal strategy is to maintain budget balance, on average, over the course of the economic cycle. Within the strategy, the Government has identified supplementary objectives:

- maintaining fiscal surpluses over the forward estimates period while economic growth prospects remain sound;
- not increasing the overall tax burden from its 1996-97 level; and
- improving the Commonwealth net worth position over the medium to longer term.

The Government does not have an explicit net debt target. However, under the Charter, the Government must maintain Commonwealth general government net debt at prudent levels. Furthermore, achieving the fiscal strategy will result in a stable level of nominal net debt and a falling level of net debt as a proportion of GDP as the economy grows over time.

Box 1: *Charter of Budget Honesty Act 1998*: Principles of sound fiscal management

Fiscal policy should be directed to maintaining the ongoing economic prosperity and welfare of the people of Australia and therefore should be set in a sustainable medium-term framework. To meet these objectives, a government should frame its fiscal strategy in accordance with the following principles of sound fiscal management. The government should:

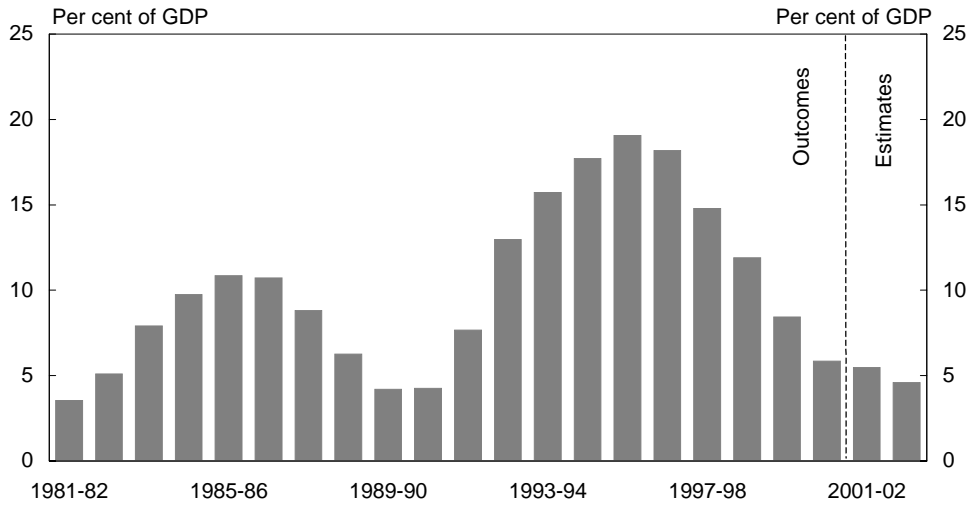
- manage prudently the financial risks the Commonwealth faces, including by maintaining Commonwealth general government debt and contingent liabilities at prudent levels;
- ensure that fiscal policy contributes to achieving adequate national saving and, as appropriate, to dampening cyclical fluctuations in economic activity, taking account of the economic risks the nation faces and their impact on the Commonwealth's fiscal position;
- pursue spending and taxing policies that are consistent with a reasonable degree of stability and predictability in the level of tax burden;
- maintain the integrity of the tax system; and
- ensure that policy decisions consider their financial effect on future generations.

THE GOVERNMENT'S RECORD IN ACHIEVING FISCAL SUSTAINABILITY

When the Government came to office in 1996, the Budget was in deficit by around \$10 billion or 2 per cent of GDP, despite several years of strong economic growth. Commonwealth general government net debt also had increased significantly.

Since then, the Government has placed public finances on a more sustainable footing. Cumulative surpluses have reduced Commonwealth general government net debt from around \$96 billion or 19 per cent of GDP in 1995-96 to around \$34 billion or 4.6 per cent of GDP in 2002-03 (Chart 10).

Chart 10: Commonwealth general government net debt



Source: ABS Cat. No. 5501.0 and 5513.0, Commonwealth Final Budget Outcomes and Treasury estimates.

PART II: AUSTRALIA'S LONG-TERM DEMOGRAPHIC AND ECONOMIC PROSPECTS

Demographic prospects

Australia will experience further ageing of its population over the next four decades. Overall, the proportion of the population that is very old (over 85 years of age) is expected to triple, while the proportion in the prime working age range of 15 to 64 is expected to fall.

FERTILITY AND MORTALITY

The total fertility rate (TFR) of Australian women has declined since 1961 when it peaked at 3.5 births per woman during the post-World War II 'baby boom'. Since the mid-1970s the TFR has been well below the rate needed for population replacement (Chart 11). At the same time, high standards of public health have contributed to increased longevity. The ageing of Australia's 'baby boom' cohort, with lower mortality rates than previous generations and smaller cohorts following as fertility declined, accentuates the impact of an ageing population.¹ In the past century, the proportion of the population aged over 65 has risen from just over 4 per cent to nearly 12.5 per cent. By 2042, around 24.5 per cent of Australia's population is expected to be aged over 65.

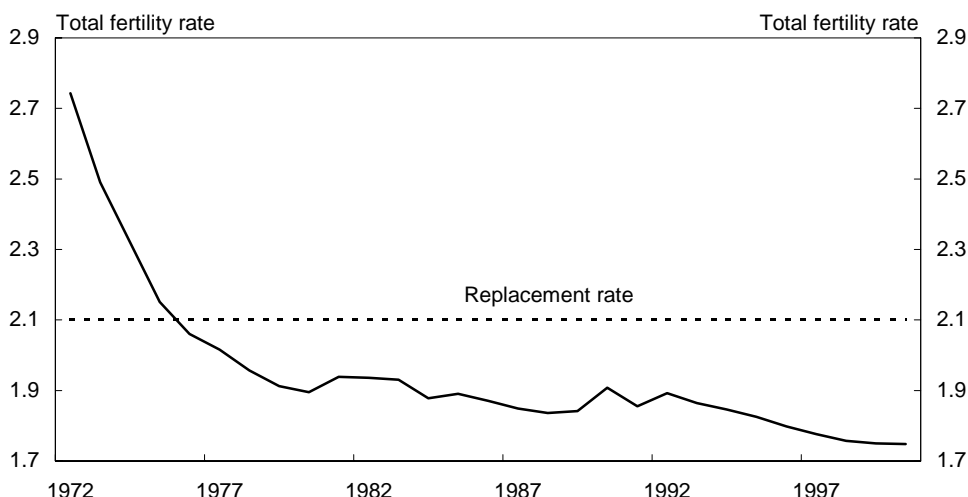
The trend towards having fewer children, later in life, is a key influence on Australia's changing population structure. The number of children born to women aged 30 to 39 is increasing, but this does not fully compensate for the decline in the number of children born to women aged 20 to 29.

Based on recent trends, the TFR is projected to fall to 1.6 by 2042.² While this is lower than Australia's TFR of 1.75 in 2000, it is higher than the fertility rates in many OECD countries, including Italy, Japan and Sweden. Australia's current TFR is higher than the OECD average, but significantly lower than New Zealand (at 2.01 in 2000) and the United States (at 2.13 in 2000). Today's TFR will influence the size and growth rate of the population of labour force age in 15 to 20 years.

1 The 'baby boom' cohort includes Australian residents born during Australia's 'baby boom', generally considered to have started in 1946 and ended some time between 1961 and 1965.

2 This projection is based on age-specific data and is not the same as the ABS methodology, which assumes a constant fertility rate.

Chart 11: Australia's historical total fertility rate



Note: The total fertility rate represents the number of children a woman would bear during her lifetime if she experienced the current age-specific fertility rates at each age of her reproductive life.

Source: ABS Cat. No. 3301.0 (various).

At the same time as fertility rates have fallen, mortality rates have also fallen. Declining mortality rates add to population growth rates and the proportion of aged people in the population. Australia's death rate fell from 8.5 per thousand in 1971 to 6.9 per thousand in 1991 and around 6.7 per thousand in 2001.

Mortality rates have fallen across all age groups, and this is expected to continue for the next four decades. The male proportion in older age groups is increasing slowly. Although women have a higher life expectancy than men, men's mortality rates have fallen faster than those of women.

Australians' life expectancies are among the highest of OECD countries, and this is expected to continue. In the past 40 years, Australians' life expectancies have increased by more than 8.3 years for men and 7.6 years for women. Based on recent trends, men born in 2042 are projected to live to 82.5 years, an average of 5.3 years longer than those born in 2002. Women born in 2042 are projected to live to 87.5, 4.9 years longer on average (Table 2).

Table 2: Australians' projected life expectancy at birth (in years)

	2002	2012	2022	2032	2042
Males	77.2	79.3	80.7	81.7	82.5
Females	82.6	84.4	85.7	86.7	87.5

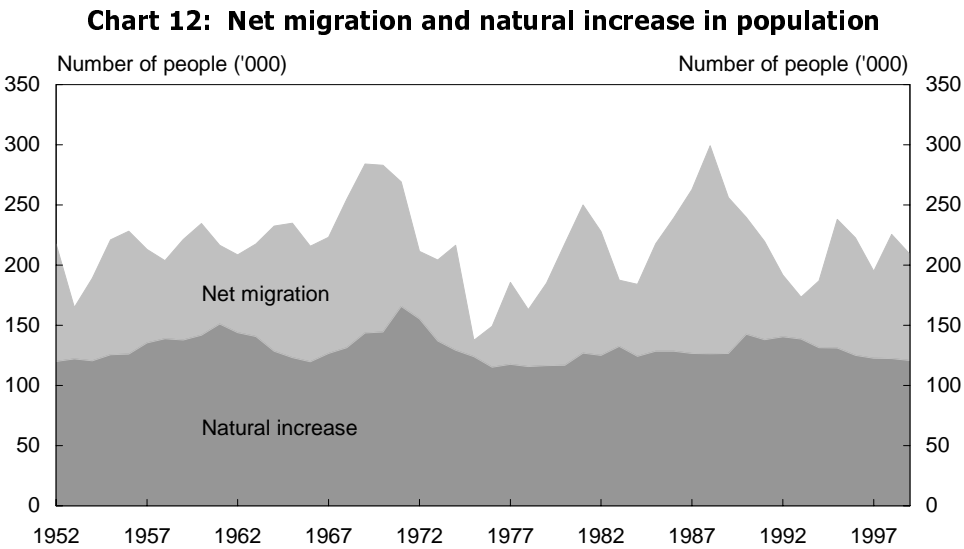
Source: Treasury projections.

MIGRATION

An influence with some offsetting effect on the rate of population ageing is Australia’s net overseas migration. This is the number of permanent and long-term temporary arrivals minus permanent and long-term temporary departures. Over many years, Australia’s net migration inflow has been younger on average than the resident population; this has slowed population ageing.

The contribution of net overseas migration to population growth has varied significantly over the last five decades (Chart 12). Net migration tends to fall during economic downturns, partly because permanent and long-term temporary departures increase, and partly because governments have adjusted migrant intakes.

While most arrivals of new permanent settlers are subject to government policy, many arrivals and departures are not subject to official control, including the permanent departures and arrivals of Australian residents and New Zealand citizens. A large component of net migration is on a long-term but temporary basis. In the future, levels of net migration are likely to be affected by greater competition for skilled migrants, particularly as populations age in OECD countries. Unlike most countries, Australia has a planned migration programme supporting skilled migration, which should provide an advantage in future competition for skilled migrants. Future net migration is assumed to be constant at 90,000 people per year, with the same age-gender profile as at present.



Note: Natural increase is equal to the number of births minus the number of deaths in a given period of time.
Source: ABS AusStats Time Series Spreadsheets 3105.0.65.001.

POPULATION PROJECTIONS

While the population of labour force age is projected to decline as a proportion of the total population, the continued rise in numbers of people in the 15 to 64 age group is expected to increase the labour force (Table 3). Australia is one of only a few OECD countries projecting continued labour force growth over the next 40 years. Of these countries, only the United States is projected to have stronger growth in its working-age population.³ This is partly due to its relatively high fertility rate compared to Australia.

Table 3: Australian population projections for selected age ranges (millions of people)

Age range	2002	2012	2022	2032	2042
0 to 14	3.9	3.8	3.8	3.8	3.7
15 to 64	13.2	14.6	15.1	15.3	15.4
65 to 84	2.2	2.7	3.8	4.7	5.1
85+	0.3	0.4	0.5	0.8	1.1
Persons	19.6	21.5	23.2	24.5	25.3

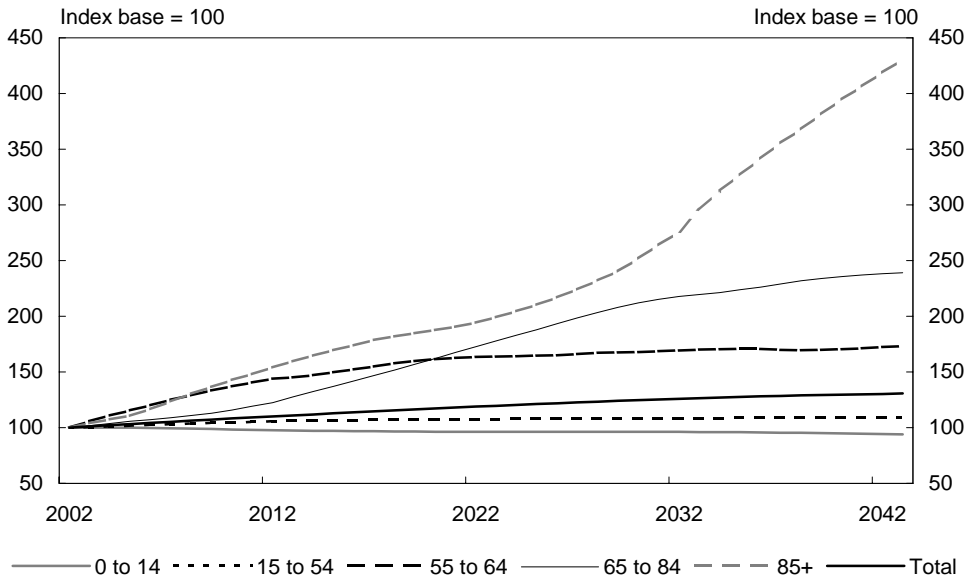
Source: Treasury projections.

Population growth is expected to continue slowing, from 1.2 per cent in 2000 to around 0.2 per cent by 2042. However, the growth rate of the population aged 85 or over is projected to accelerate sharply, while the youth population is anticipated to decline slightly. While the population of labour force age is projected to grow by just 14 per cent, the number of people aged 55 to 64 is projected to increase by more than 50 per cent over the next two decades. This is expected to be the fastest growing group of labour force age (Chart 13).

The projected population of Australia for selected age ranges highlights the expected growth in the proportion of the population who are 'very old', that is over 85. Currently, around 1.5 per cent of the population is in this age range, but by 2042 it is expected to rise to over 4 per cent.

3 Dang, Antolin and Oxley 2001.

**Chart 13: Growth indices by age group
(on a 2001 population base)**



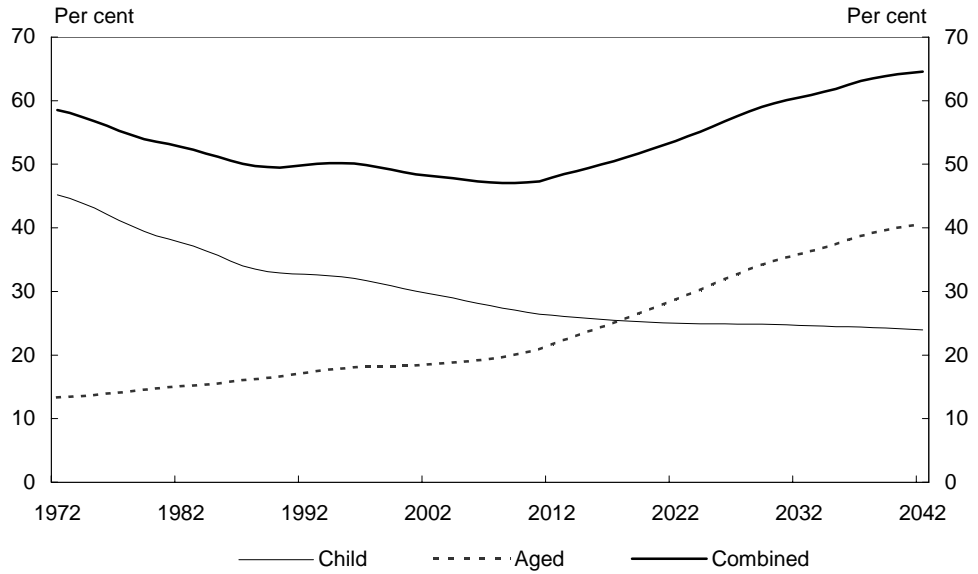
Source: ABS Cat. No. 3201.0 (June 2001) and Treasury projections.

In 2002, the aged to working-age ratio (the proportion of people aged over 65 to people of traditional labour force age, 15 to 64) is 19 per cent. This is projected to rise to almost 41 per cent by 2042 (Chart 14). Over the same period, the child to working-age ratio (the proportion of people aged under 15 to those aged 15 to 64) is projected to decline. However, this does not completely compensate for the increase in the aged to working-age ratio. Thus, the overall proportion of the population potentially to be supported by the working-aged population is expected to rise.

Indeed, the combined aged and child to working-age ratio is projected to be slightly higher in 2042 than it was in 1972. However, the rising aged to working-age ratio may have greater implications for government spending than the falling child to working-age ratio. Historically, a significant component of the cost of children has been financed privately, while a larger proportion of the cost of supporting older people has been funded through government transfers (for example, pensions).

Today, the combined aged and child to working-age ratio is lower than it has been at any point in the last 30 years. It is projected to continue falling until 2009, before rising again and reaching a level similar to today's level by 2012.

Chart 14: Australia’s child and aged to working-age ratios



Source: ABS Cat. No. 3201.0 (various) and Treasury projections.

Economic prospects

Consistent with the projected lower labour force growth, economic growth in Australia, as measured by growth in real GDP, is expected to slow over the next four decades. Real GDP per person, a more appropriate indicator of living standards, is also expected to grow more slowly, but is not expected to decline to the same extent as the growth rate of real GDP.

Growth in real GDP in the longer term reflects the net impact of productivity growth, employment growth and changes in hours worked. These drivers in growth are difficult to project over the longer term and often are interdependent. For instance, labour force participation rates may increase with employment growth. To simplify the analysis, the projections used in this report make no allowance for any feedback between the individual drivers of growth.

PRODUCTIVITY

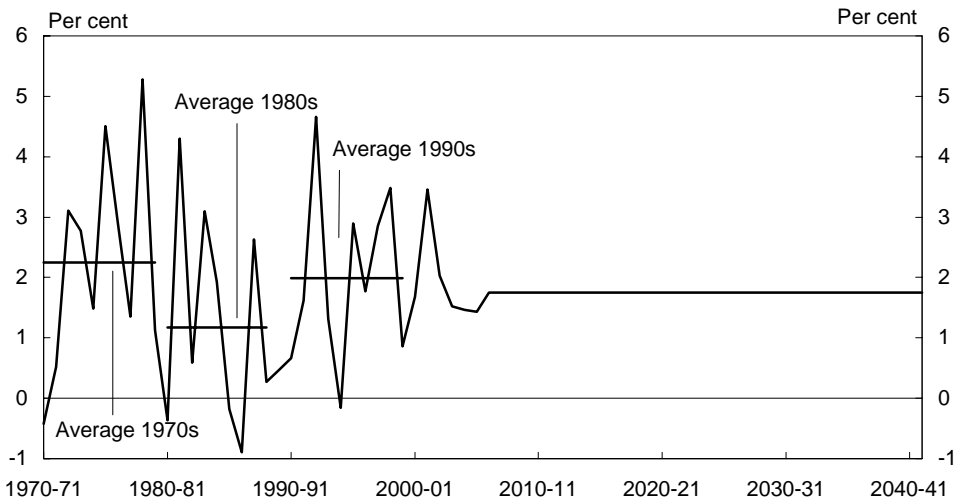
Productivity is calculated as the amount of goods and services produced divided by the inputs used to produce them. Productivity growth indicates a higher level of output for a given level of inputs and will be the key driver of GDP growth in the decades ahead. Faster productivity growth would enable higher rates of growth of both GDP and real wages over the projection period, other factors unchanged.

Chart 15 shows that despite short-term volatility, labour productivity growth in the 1990s averaged around 2 per cent per year, which was significantly above the 30-year average of about 1.75 per cent. Conversely, at an average of around 1.2 per cent per year, labour productivity growth in the 1980s was below the long-term average.

Productivity growth is extremely difficult to forecast over a long time horizon. Therefore, productivity is projected to grow at its long-term average rate (30 years) of about 1.75 per cent from the middle of this decade to the end of the projection horizon.⁴ Given the differences in past decade averages, and the importance of productivity growth in determining longer term economic growth, the impact of high and low productivity growth scenarios is discussed later in this part. In addition, Part IV explores the impact of both high and low productivity growth scenarios on real GDP growth and spending.

4 Growth in labour productivity, as defined in this report, can be decomposed into a contribution from 'capital deepening' — or growth in the capital-labour ratio — and from growth in 'multi-factor' productivity — measured as a residual and attributable to influences other than increases in the quantity and quality of labour and capital. For ease of analysis, the projections focus solely on labour productivity.

Chart 15: Labour productivity growth^(a)



(a) Real GDP per hour worked.

Note: Data prior to 1978-79 are estimates. Data are annual averages.

Source: ABS Cat. No. 5206.0 and 6203.0 and Treasury.

EMPLOYMENT

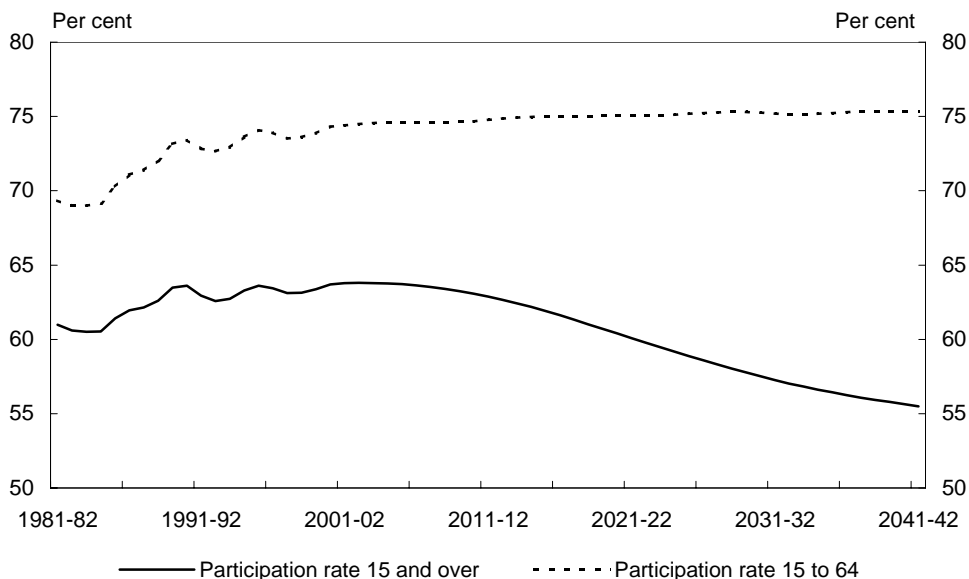
In addition to the productivity influences, employment growth in the decades ahead will be another driver of real GDP growth. Changes in employment reflect the combined impact of changes in: the working age population; the labour force participation rate; the unemployment rate; and average hours worked.

Given the demographic projections outlined previously, it is likely that the rate of growth in the labour force will decline, perhaps significantly, although the outcome will be influenced by future trends in labour force participation.

Participation rate

Over the past three decades, the total labour force participation rate, that is the participation rate of those aged 15 years and over, rose from an estimated 58 per cent in 1960-61 to 64 per cent in 2000-01 (Chart 16). The upward trend reflected a fall in male labour force participation that was more than offset by a strong rise in female participation. The male participation rate fell from an estimated 83 per cent in 1960-61 to 72 per cent in 2000-01, while that of females rose from an estimated 36 per cent to 55 per cent over the same period.

Chart 16: Participation rates



Source: ABS Cat. No. 6202.0, ABS AusStats Time Series Spreadsheets 6291.0.40.001 and Treasury.

The future trends in participation rates are uncertain. With other factors unchanged, the overall upward trend in the labour force participation rate over recent decades seems unlikely to continue over the projection horizon, mainly reflecting Australia's ageing population.

The projections are based on current participation rate trends adjusted for demographic changes and reflect different age groups' traditionally different labour force participation rates. Prime-aged workers, that is, those between 25 and 54 years, historically have been more likely to be in the labour market than those aged 55 years and over. As the 'baby boomers' age, older groups with traditionally lower labour market attachment will increase in size relative to the overall population. This is likely to put downward pressure on the overall participation rate.

Nevertheless, rises in participation rates are projected for a number of other sub-groups. For example, labour force participation of women aged 45 to 54 years has been trending up over time, and this trend is assumed to continue over the projection horizon.

Overall, until 2007-08, the participation rate for people aged 15 and over is projected to remain around current levels (about 64 per cent) but then to decline steadily to around 56 per cent by the second half of the 2030s. The decline reflects the increase in the proportion of the population over 64, and the very low participation rates of this group. In contrast, the participation rate of 15 to 64 year olds is projected to be steady. (See Appendix B for projected age and gender-specific labour force participation rates.)

Changes in the overall participation rate are mainly driven by changes in the labour force attachment of prime-aged workers, as this group constitutes about 70 per cent of the total labour force, with the remainder comprising of older and younger workers. As a result, increasing the participation rates of groups with lower participation rates, such as older workers, would have only a limited impact on the overall participation rate. For example, a large 10 percentage point increase in the participation rate of male workers aged 55 years and over would be required to lead to an increase in the overall participation rate of at most 2 percentage points.⁵ Although a substantial increase in participation of older workers would not have a large impact on the overall participation rate and hence economic growth, other benefits such as higher income for this group would result.

Unemployment

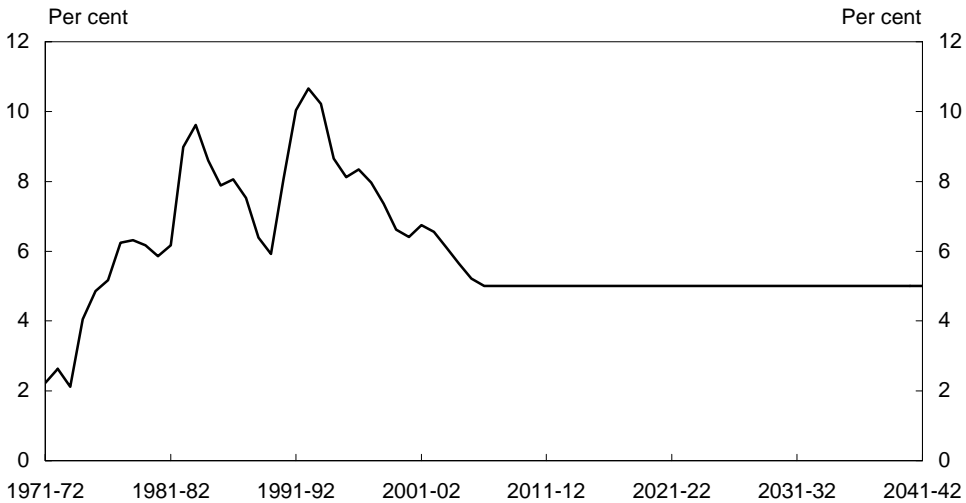
In the longer term, it may be possible to achieve a significantly lower unemployment rate than the current 6.3 per cent level, without triggering ever higher inflation. This potential longer term unemployment rate is often referred to as the non-accelerating inflation rate of unemployment (NAIRU).⁶ To the extent that the NAIRU is below the current unemployment rate, there is scope for employment to grow faster than the labour force for a period, allowing the unemployment rate to fall until it reaches the NAIRU. Determining the exact level of the NAIRU is difficult, especially as this level is likely to shift over time, such as with changes in education, the location of work and structure of the economy. Further, the NAIRU may decline over time in response to future labour market reforms, or as earlier labour market reforms continue to work through the economy.

These projections assume that the unemployment rate will gradually decline to 5 per cent in 2006-07 and remain at this level thereafter, although significant uncertainty remains around these assumptions (Chart 17).

5 A 10 percentage point rise in the participation rate of male workers aged 55 years and over would cause an increase of about 1.5 percentage points in the overall participation rate in 2009-10 and a rise of about 2 percentage points in 2041-42. The larger impact in 2041-42 reflects the projected larger share of older people in the overall population by that year.

6 For example, Gruen, Pagan, and Thompson 1999, estimated the NAIRU to be between 5½ and 7 per cent in 1997 while Dungey and Pitchford 1998, estimated that at steady inflation growth, the unemployment rate could fall to around 5 per cent after four years.

Chart 17: Unemployment rate

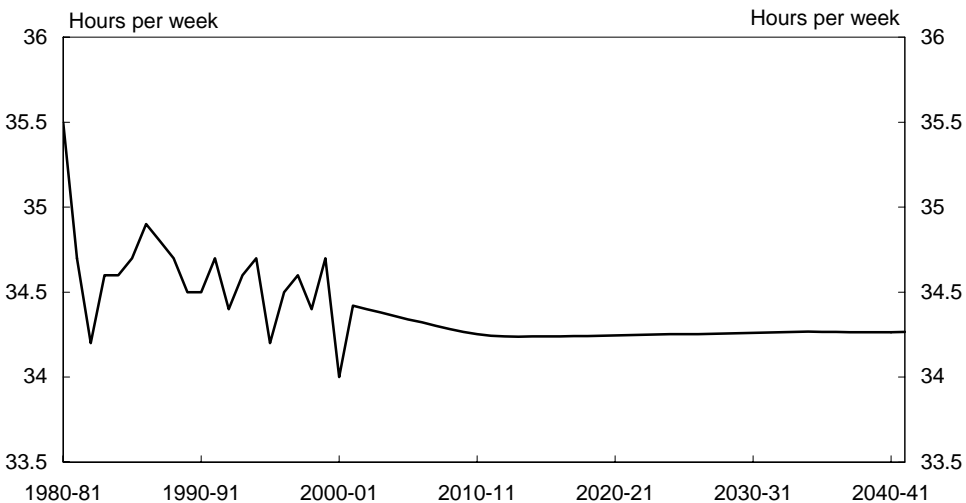


Note: Data prior to 1978-79 are estimates.
Source: ABS Cat. No. 6202.0 and Treasury.

Hours worked

Over the past decade, average hours worked per week declined slightly overall, although with large fluctuations from year to year. In the projection period, average hours worked per week are assumed to decline slightly, by 0.1 per cent per year over this decade, and to remain essentially unchanged thereafter (Chart 18).

Chart 18: Average hours worked



Source: ABS Cat. No. 6203.0 and Treasury.

PRICES, THE GDP DEFLATOR AND WAGES

To compare the actual performance of the economy over time, this report uses real GDP, that is the level of economic activity in constant prices. So that the spending projections can be considered relative to the size of the economy they are calculated as a share of nominal GDP. To convert real GDP to nominal GDP, an estimate of the GDP deflator is required. Over the longer term, the GDP deflator and Consumer Price Index (CPI) are assumed to move together.

Following two decades of moderate to high inflation rates, inflation has been much lower and less volatile since the early 1990s. This low and steady inflation environment has been built into the monetary policy framework and hence is assumed to continue over the projection period. In line with the Reserve Bank of Australia's target band, both the CPI and the GDP deflator are assumed to increase 2.5 per cent per year from 2005-06 onwards.

Prior to 2006-07, with the unemployment rate declining to the NAIRU, real wages are assumed to rise at a lower rate than productivity growth, allowing employment to rise faster than otherwise. Once the unemployment rate has declined to the assumed NAIRU, real wage growth is assumed to be equal to productivity growth, consistent with a steady unemployment rate and a steady inflation rate over the remainder of the period. Nominal wages are therefore projected to grow at 4.25 per cent per year beyond 2006-07 (that is, at a rate reflecting inflation of 2.5 per cent per year and productivity growth of 1.75 per cent per year).

ECONOMIC GROWTH PROJECTIONS

Over the longer term, productivity growth is the key driver of real GDP growth. With projected lower growth in the labour force and falling participation rates, annual employment growth could be significantly lower over coming decades. Assuming that productivity will grow at around its 30-year average of 1.75 per cent per year, real GDP growth is projected to decline to an average of 3.1 per cent per year in the current decade, and to around 2 per cent per year by the 2020s and beyond (Table 4).

Table 4: Growth in real GDP and real GDP per person^(a)

Decade	Labour productivity growth	Employment growth	Real GDP growth(b)	Real GDP per person growth
1980s	1.2	2.4	3.4	1.8
1990s	2.0	1.3	3.4	2.2
2000s	1.7	1.5	3.1	2.1
2010s	1.75	0.6	2.3	1.5
2020s	1.75	0.2	2.0	1.4
2030s	1.75	0.1	1.9	1.5

(a) Average annual growth rates (per cent).

(b) 1999–2000 dollars.

Source: ABS Cat. No. 5206.0 and 6203.0 and Treasury.

GDP per person, a more appropriate indicator of the growth in living standards, also is projected to grow more slowly over the long term. However, the growth in real GDP per person is not anticipated to decline to the same extent as the growth rate of real GDP. This is because the projected slowdown in GDP growth is partly driven by demographic factors, including slower growth in the total population.

As these GDP projections depend critically on the productivity assumptions, this report also provides both high and low productivity growth scenarios starting in 2006-07 (Table 5). The high productivity scenario uses a productivity growth rate similar to the 1990s (that is, 2.0 per cent per year) while the low growth scenario uses a productivity growth rate similar to that experienced in the 1980s (that is, 1.2 per cent per year). The high productivity growth assumption leads to higher annual real GDP growth and results in the level of real GDP being about 9 per cent higher than under the base case in 2041-42. Similarly, the low productivity scenario leads to lower annual real GDP growth and results in the level of real GDP being about 18 per cent lower than under the base case in 2041-42.

Table 5: Real GDP growth under different productivity growth scenarios^(a)

Decades	High productivity growth scenario	Base case	Low productivity growth scenario
2000s	3.2	3.1	2.9
2010s	2.6	2.3	1.8
2020s	2.2	2.0	1.4
2030s	2.1	1.9	1.3

(a) Average annual growth rates (per cent).

Source: Treasury.

GDP can be measured in three different ways: through measures of income flows, measures of expenditure flows and from direct measures of production. The difference between the three measures of GDP can be important as different areas of government expenditure are affected by different measures of GDP. The income approach, GDP(I), measures the income derived from the inputs of production (labour and capital). The expenditure approach, GDP(E), measures the domestic final consumption of goods and services. The production approach, GDP(P), measures the value of the goods and services produced in the economy. Conceptually, each measure of GDP should deliver the same estimate. Therefore, the three different measures of GDP are assumed to be equal over the projection period.

INTERNATIONAL COMPARISONS

Over the longer term, all OECD countries are expected to experience similar downward pressure on the growth rate of the labour force and hence real economic growth, as a result of declining fertility rates and an ageing population (Table 6).

Using the base case assumptions, by the end of the decade, Australia's average real GDP growth rate is projected to be stronger than some recent projections for the United Kingdom, New Zealand and Japan, reflecting Australia's projected stronger employment growth. However, Australia's projected average real growth rate is slightly lower than recent projections for the United States, reflecting higher fertility rates in the United States.

Table 6: International projections^(a)

Country	Year	Real GDP growth	Labour productivity growth	Unemployment rate
Australia	2006-07 to 2010-11	2.7	1 3/4	5.0
USA	2007 to 2011	3.1	1.7(b)	5.2
UK	2007-08 to 2011-12	2 1/4	2	**
New Zealand	2006 to 2011	2.2	1.5	5.9
Japan	2005 to 2015	-0.1	**	**

(a) Numbers are presented as annual averages (per cent).

(b) Total factor productivity.

Source: Treasury projections, US Congressional Budget Office 2000, Her Majesty's Treasury 2002, The Treasury (New Zealand) 2001, Japan Center for Economic Research 1999.

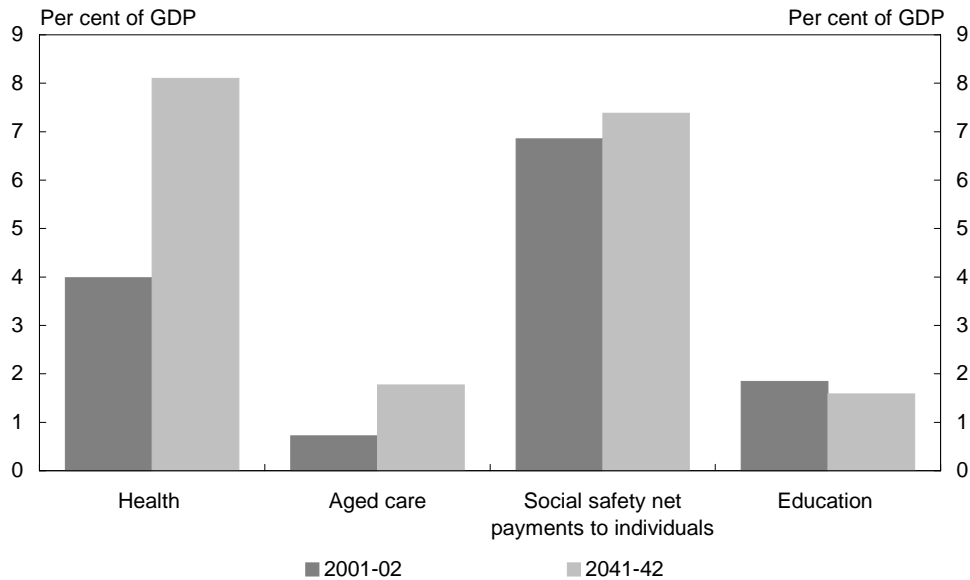
PART III: PROJECTIONS FOR SPENDING AND REVENUE

The central projections for government spending and revenue over the next four decades take into account, where possible, the demographic changes and economic factors discussed in Part II, and also consider the impact of other factors which may drive change.

The projections cannot be considered to be forecasts of the future: the factors underlying the projections are reasonable assumptions rather than forecasts. An additional source of uncertainty is that the interaction between the factors and government spending and revenue could vary over time, leading to significantly different results from those expected now.

Over half of Commonwealth government spending is directed to health and aged care, social safety net payments to individuals and education. This spending is sensitive to demographic changes. The projections in this report show that spending in health and aged care and social safety net payments to individuals are likely to grow relative to GDP. However, education spending as a proportion of GDP is likely to fall (Chart 19). Revenue and areas of Commonwealth spending that are less demographically sensitive, such as defence and the environment, are assumed to remain constant as a proportion of GDP.

Chart 19: Projected spending by category



Source: Treasury projections.

Spending

HEALTH AND AGED CARE

Australians' life expectancies are among the highest in the world. In relative terms, Australia's health outcomes are achieved at a moderate cost, with total health spending around 8.5 per cent of GDP, which is about average for OECD countries.

Health and aged care services are funded and provided by both the public and private sectors. The Commonwealth is responsible for almost half of the total health spending for Australia, and is the major public funder, although State, Territory and Local governments also fund health services.

Health

The Commonwealth spends around 4 per cent of GDP on health in 2001-02. Less than 20 per cent of this is funded through the Medicare levy. The Commonwealth funds the Medical Benefits Scheme (MBS) to provide patient subsidies for medical practitioner services, optometry, diagnostic imaging and pathology. The MBS forms the core of Medicare — the Commonwealth's universal health programme. Under the Pharmaceutical Benefits Scheme (PBS), the Commonwealth subsidises a select list of pharmaceuticals to provide patients with timely, reliable and affordable access to necessary and cost-effective medicines. New procedures, tests and pharmaceuticals are added to the list of those which receive subsidies under the MBS and PBS following Government approval of the recommendations of the relevant advisory bodies.

In addition to the MBS and PBS, the Commonwealth:

- makes a major contribution to the funding of public hospital services provided by State governments;
- provides a 30 per cent rebate to subsidise the cost of private health insurance; and
- provides financial support in other areas, including medical research, public health, indigenous health services, health information management and access, health safety and quality, and medical workforce development and infrastructure.

Aged care

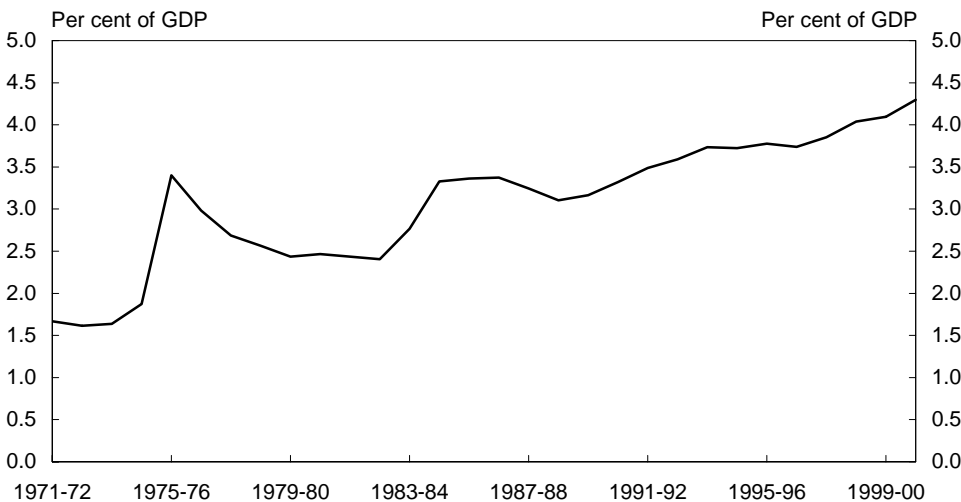
The Commonwealth provides funding for residential aged care and a range of community care services equivalent to 0.7 per cent of GDP in 2001-02. For residential aged care, the majority of funding is provided directly to non-government organisations. The Commonwealth also contributes significant funding towards community care services which are delivered by the States and Territories.

Key trends and assumptions

Over the 30 years to 2000-01, Commonwealth spending on health and nursing homes increased from 1.7 per cent of GDP to 4.3 per cent of GDP (Chart 20). While Commonwealth health spending fluctuated markedly during the 1970s, reflecting various policy changes (including the introduction and subsequent abolition of Medibank), growth steadied in the 1980s and 1990s following the introduction of Medicare.

In addition to this health spending, Commonwealth spending on hostels and community care in 2000-01 was around 0.4 per cent of GDP. However, due to the recent shift in focus in aged care from residential care to community care, it is not yet possible to identify the underlying trend.

Chart 20: Historical Commonwealth health spending



Note: The sharp increase in 1975-76 reflects the introduction of Medibank and the increase in 1983-84 reflects the introduction of Medicare.

Source: Australian Institute of Health and Welfare health spending data base, Australian Institute of Health and Welfare 2000, ABS AusStats Cat. No. 5204.0 and Treasury. Data may differ from the functional data in the Budget Papers.

Non-demographic growth¹, rather than population growth or changes in the age structure of the population, has been the key driver of real health spending over the past decade (Table 7). Non-demographic factors (such as listing new medications on the PBS and greater use of diagnostic procedures) are likely to generate the greatest cost pressure in the future.

¹ Non-demographic growth refers to real per person age-adjusted compound growth (Appendix C).

Table 7: Real growth rates for Commonwealth health spending (per cent)

	1984-85 to 2000-01	1989-90 to 2000-01
Non-demographic (population and age structure removed)	2.1	3.2
Population	1.2	1.2
Age structure	0.5	0.5
Total	3.8	4.9

Note: Growth trends of health spending are very sensitive to the start and end dates chosen and the inclusion or exclusion of policy changes. Both growth rates exclude the introduction of Medicare, the largest policy change over the last two decades, and the introduction of the Private Health Insurance Rebate (introduced on 1 January 1999). The start date of 1989-90 excludes several years following the introduction of Medicare, allowing a more stable trend to appear.

Source: Australian Institute of Health and Welfare and Treasury estimates.

Technological change accounts for a significant proportion of non-demographic growth in health spending per person. As the Commonwealth exercises significant controls over whether to adopt new technology in the health system, past increases in spending partly reflect the Commonwealth's choice to fund new technologies.

This growth has occurred even though policies aimed to constrain costs while improving the quality of health care and introducing new treatments or services. For example, in 1998, the Government introduced the Therapeutic Group Premium policy to constrain spending on the PBS. Under the arrangements, the Government subsidises up to the price of the lowest priced product in the therapeutic group. Consumers make up the difference where the price charged is greater than the PBS subsidy.

Over the past decade, Commonwealth spending on health has grown at a faster rate than total national health spending. This indicates Commonwealth health spending increased faster than State government or private sector spending.² The Commonwealth's share in financing the nation's health spending grew from 42 per cent in 1989-90 to 48 per cent in 1999-2000. Over the same period the States' share fell from 26 per cent to 23 per cent and the private sector's share fell from 31 per cent to 28 per cent.

Different components of the health system have grown at different rates. Over the past decade, real non-demographic growth in Commonwealth spending on public hospitals has been 1.6 per cent per year. Real non-demographic growth for MBS subsidies has been about 2 per cent per year since the introduction of Medicare in 1984.

By contrast, spending growth on the PBS has been rapid. Real non-demographic growth for the PBS has averaged 6.1 per cent per year over the last 20 years. When the impact of the budget changes through to the end of the forward estimates period (2005-06) is included, the growth rate is 5.6 per cent. The increased availability and use

2 The number of people with private health insurance has increased significantly since the introduction of Lifetime Health Cover in July 2000, so the contribution of the private sector is likely to have increased since then.

of newer and more expensive drugs, leading to increases in the total volume of prescriptions and the government cost per prescription, drives this rapid growth.

This year's Budget includes initiatives to address the rapid growth in the PBS and reduce spending on the PBS by \$1.9 billion over the next four years. These initiatives include increases in patient co-payments and safety net thresholds under the PBS, a review of controls on the prescription of certain drugs, better information for doctors on the restrictions that apply to PBS drugs and measures to facilitate the use of less expensive generic drugs.

Spending on older people is growing faster than for the total population. For the MBS, the highest growth rates have been for those aged 55 and over.

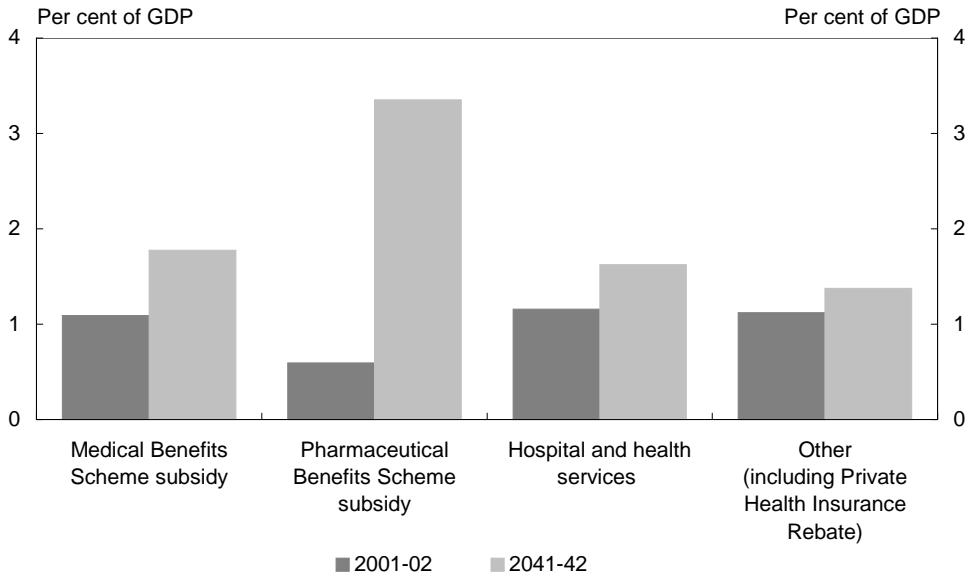
Health and aged care projections

Health and aged care spending is projected using trends in cost per head of population by age and gender. This is then combined with the projected population changes. The main model used in this report separately projects the main components of health spending to allow for different growth rates for hospitals, Medicare and the PBS (Appendix C).

Commonwealth spending on health is projected to increase to 4.3 per cent of GDP by 2011-12 and to 8.1 per cent of GDP by 2041-42 (Table 8). This is roughly equivalent to a real non-demographic growth rate for all of Commonwealth health spending of about 2.6 per cent per year over the next four decades.

Of all the components of Commonwealth health expenditure, spending on PBS subsidies is projected to grow the fastest, even after the current budget changes. As a proportion of GDP, the PBS is projected to grow by more than five fold, from 0.6 per cent of GDP currently to 3.4 per cent of GDP in 2041-42. Spending on MBS subsidies as a proportion of GDP is expected to grow by 60 per cent, with hospital and health services spending growing by 40 per cent (Chart 21).

Chart 21: Projected growth in components of Commonwealth health spending



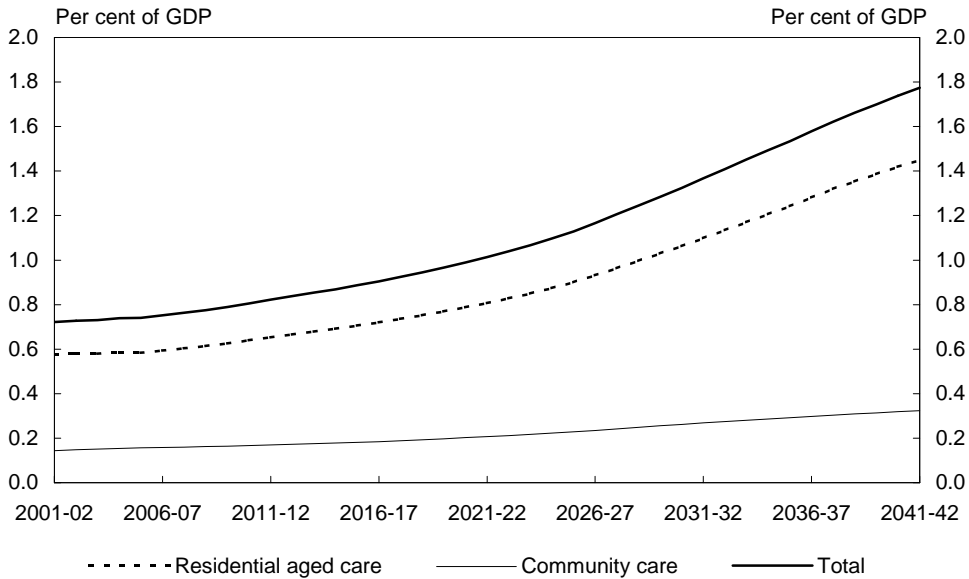
Source: Treasury projections.

Most of the projected growth in health spending reflects the increasing cost and availability of new high technology procedures and medicines, and an increase in the use and cost of existing services. Consumers have a high demand for more effective treatments, and expect these treatments will be provided to them soon after the technology first becomes available.

The ageing of the population also is projected to require increased health spending, as older people tend to have a greater need for health services. However, this is projected to have a much smaller effect on spending than the growing cost of new health care technology, increasing use of services and strong consumer demand and expectations.

Reflecting the ageing of the population, Commonwealth spending on aged care as a proportion of GDP is projected to more than double as a share of GDP, rising from 0.7 per cent of GDP in 2001-02 to almost 1.8 per cent of GDP in 2041-42 (Chart 22).

Chart 22: Projected growth in Commonwealth aged care spending



Source: Treasury projections.

Table 8: Projected Commonwealth health and aged care spending, by components (per cent of GDP)

	2001-02	2006-07	2011-12	2021-22	2031-32	2041-42
MBS subsidy	1.09	1.10	1.15	1.33	1.56	1.78
PBS subsidy	0.60	0.63	0.79	1.31	2.15	3.35
Hospital and health services	1.16	1.16	1.20	1.34	1.51	1.63
Other	1.12	1.14	1.16	1.22	1.29	1.37
All health	3.96	4.02	4.30	5.20	6.51	8.13
Residential aged care	0.58	0.59	0.65	0.81	1.10	1.45
Community care	0.14	0.16	0.17	0.21	0.27	0.32
All aged care	0.72	0.75	0.82	1.01	1.37	1.77

Source: Treasury projections.

Alternative modelling

The projections for health spending are very sensitive to the non-demographic growth rate used. The growth rate, in turn, is quite sensitive to the starting point chosen and whether major policy changes are included or excluded.

A model of aggregate health spending was used to determine the sensitivity of health spending to varying the assumed non-demographic growth rate. The main data for this model are the real growth rate in health spending (per person age-adjusted) and a distribution of Commonwealth health spending per person of a given age. Two cases were used to test the impact of varying the non-demographic rate.

For case A a non-demographic growth rate of 3.0 per cent was used, which is in line with growth experienced over the last 12 years if the impact of the Private Health Insurance Rebate on Commonwealth spending is excluded. In this case, health spending is projected to rise to 9.7 per cent of GDP (Table 9). This is higher than the result of the main model, largely because the growth rate does not account for the changes to the PBS in this Budget. It was estimated that 82 per cent of projected growth, after compounding, is due to non-demographic factors, 9 per cent to population ageing and 9 per cent to population growth.

Case B used an average real per person age-adjusted growth rate of 2.5 per cent. This is an average of growth rates to 2000-01, from starting points in each year from 1984-85 to 1989-90, inclusive. These growth rates ranged from 2.1 per cent to 3.2 per cent and their averaging produces a representative rate. The growth rates differ because the spike of expenditure when Medicare was introduced in 1984 was followed by five years of around zero real growth. Case B is consistent with no further major upwards policy changes to Commonwealth health spending (such as occurred with Medicare or the Private Health Insurance Rebate) over the next four decades.

This case projects Commonwealth total health spending as a proportion of GDP to almost double by 2041-42 compared with spending in 2001-02. The relative impact of population growth and ageing is slightly greater than in case A.

The crucial implication of these projections is that while population change is expected to be a significant driver of future health spending, new technology and increased use and costs of services are projected to have an even more significant influence. Changing the real non-demographic growth by 0.5 percentage points (from 2.5 to 3.0) changes the projected value of Commonwealth health spending in 2041-42 by 2.0 percentage points of GDP (Table 9). Thus plausible changes in the assumed level of real non-demographic growth in health spending affect the projections far more than plausible changes in the demographic assumptions. (See for example, the mortality scenario in the sensitivity analysis in Part IV.)

Table 9: Projected Commonwealth health spending, aggregate model (per cent of GDP)

Underlying growth rate		2001-02	2006-07	2011-12	2021-22	2031-32	2041-42
Case A	3.0 per cent	3.96	4.26	4.84	5.99	7.69	9.65
Case B	2.5 per cent	3.96	4.14	4.55	5.36	6.49	7.67

Source: Treasury projections.

These projections of health spending cannot be directly compared with those for Australia published recently by the OECD,³ because of different coverage, use of more recent data and some revisions of methodology. The OECD placed Australia in the high health spending growth group (along with Canada, the Netherlands, New Zealand and the United States). However, the OECD study noted that the projection methodologies for health vary considerably by country, including the extent to which they take into account non-demographic growth factors.

3 Dang, Antolin and Oxley 2001.

PAYMENTS TO INDIVIDUALS

Around 35 per cent of Commonwealth spending consists of social safety net payments to individuals requiring support or supplementary assistance. About 90 per cent of these payments are linked to changes in population levels and structure (for example, pension payments). In this report, these payments are grouped according to the age group most directly affected so the impact of demographic changes is clear.

A number of smaller social safety net payments to individuals are not explicitly projected in this report. They include Sickness Allowance, widows' pension, Special Benefit and Partner Allowance.

Pension age

The largest group of payments is to people older than usual workforce age (termed 'pension age'). These include the Age Pension and similar payments to veterans and war widows, and in total, represent 2.9 per cent of GDP in 2001-02.

The largest single payment category is the Age Pension which currently provides income support to men aged 65 and older and women aged 62 and older. The entitlement age for women is being increased gradually so by 2013 it will align with that for men. The Age Pension is means tested and does not depend on previous labour force experience or individual contributions.

The Service Pension provides a similar income support payment to veterans, and is available five years earlier than the Age Pension. As with the Age Pension, the entitlement ages for women are being aligned with those for men. War Widows Pensioners of Service Pension age also are included in the projections.

Workforce age

The main payments to people of workforce age are unemployment allowances (including Newstart Allowance, Youth Allowance and Mature Age Allowance), the Disability Support Pension (DSP) and the Parenting Payment (Single), formerly known as the Sole Parent Pension. These payments are means tested by both income and assets, and total around 2.4 per cent of GDP in 2001-02. Unemployment allowances are also tested for activity undertaken in search of employment.

Children

Family payments provide assistance to families with children, with higher assistance targeted to families with lower incomes and single incomes. Under *The New Tax System* a range of family payments were comprehensively redesigned and simplified. In 2001-02 payments to families amount to 1.6 per cent of GDP.

Trends and drivers

Commonwealth spending on social safety net payments to individuals depends on the population in the various age groups, the proportion of the population receiving a payment, the growth in pensions and allowances over time and the current policy framework. The key drivers differ for each payment.

Pension age

Between 1980 and 2001, the total number of Age Pensioners increased from 1.3 million to 1.8 million (Chart 23). This was mainly due to growth in the eligible population, partly offset by a decline in the proportion of the population in the eligible age group receiving a pension (the 'coverage rate'). The number of Service Pension and War Widows Pensioners has been stable around 300,000 for some time and is expected to decline as veterans from the Second World War age.

In the future, the key driver of Age Pension spending is likely to continue to be the increase in the population in the eligible age range, which, expressed as a proportion of the total population, is projected to about double by 2041-42. This rise is expected to be partly offset by a projected further decline in the coverage rate. In addition, the proportion of pensioners receiving a full Age Pension is also projected to decline, while the proportion with a part Age Pension will increase significantly. These restraining factors reflect the impact of the maturing superannuation system, which both encourages and requires greater self provision for retirement.

Workforce age

A key driver affecting the number of people receiving unemployment allowances is the stage of the economic cycle. Over the five years to June 2001, a period of steady economic growth, the proportion of people of workforce age receiving unemployment allowances fell from 7.0 per cent to 5.1 per cent.

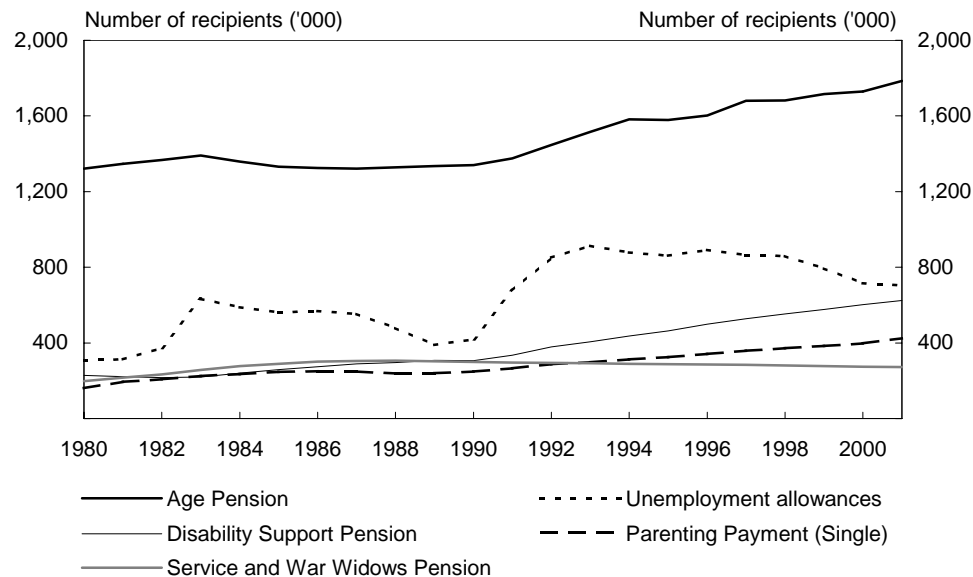
For both DSP and Parenting Payment (Single), recent strong growth in Commonwealth spending reflects the significant increase in the proportion of the population in this age group receiving a pension (the 'coverage rate') rather than population growth (Chart 23).

In many age groups this increase has been significant. For example, the proportion of people aged 50 to 64 receiving DSP increased from 5.7 per cent in 1983 to 10.8 per cent in 2001. No single explanation accounts for this growth. Some studies link the growth in disability pensions to economic cycles (with take up increasing as a result of recession), the regional availability of jobs and a lower proportion of middle-aged men being eligible for the Service Pension.

In this Budget the Government has introduced changes to eligibility and support to encourage people receiving DSP who have significant work capacity to seek employment. People with the capacity to work at least 15 hours a week will be expected to look for work, and assistance will be provided to increase the employment

participation of this group as well as of those who do not currently have that capacity. This assistance includes additional places in disability employment services, rehabilitation, education and training and the Job Network.

**Chart 23: Numbers of recipients of major payments to individuals
1980 to 2001**



Source: Department of Social Security annual reports (various) and Department of Family and Community Services *Income Support Customers - a Statistical Overview* (various). Results for 2000 and 2001 are unpublished.

The number of people receiving Parenting Payment (Single) has increased by 263,000 (or 163 per cent) between 1980 to 2001, which is largely due to the growing prevalence of divorce. ABS projections of one-parent families indicate that the current growth in sole parent payments will continue.⁴

Children

As family payments were redesigned from July 2000 no time series data exists on the coverage of Family Tax Benefit. Therefore, it is assumed the key driver for projections of coverage is the number of children aged 15 and under.

⁴ Australian Bureau of Statistics (Cat. No. 3236.0) projects the number of one-parent families to rise from 742,000 in 1996 to between 966,200 and 1,231,000 in 2021, with the middle projection being 1,066,400 one-parent families by 2021.

Methodology and projections

All the projections of payments to individuals except Age and Service Pensions use recent trends in coverage by age and gender for that payment and project the average cost per person receiving the benefit using the indexation arrangement specified by current government policy.

The Age and Service Pensions projection uses a more comprehensive methodology which incorporates the higher retirement incomes of Australian retirees as the superannuation system matures. This restrains Commonwealth spending on Age Pensions over time. More detail of the projection approaches is in Appendix C.

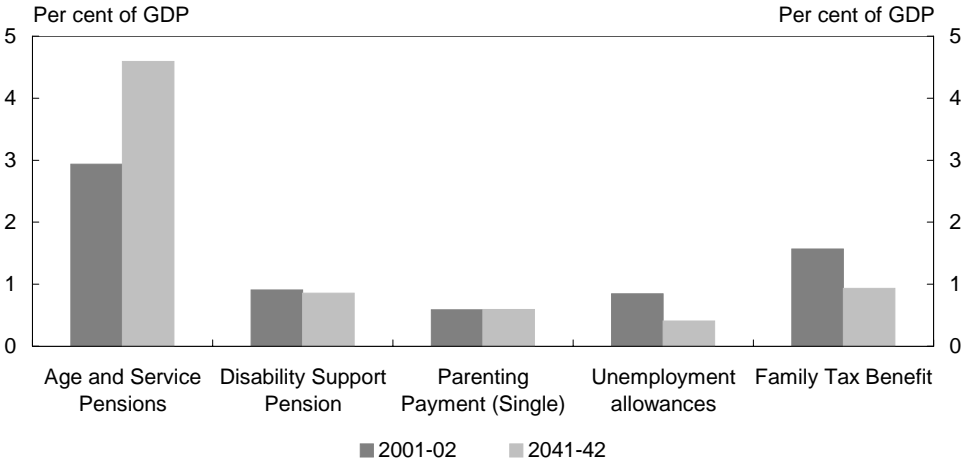
Over the next decade, Commonwealth social safety net payments to individuals are projected to decrease as a percentage of GDP. However, by 2041-42 it will rise to be 0.5 per cent of GDP more than now (Table 10). The proportion of the population of Age Pension age is projected to increase significantly, leading to a much greater increase in spending on Age Pensions. Spending on payments to children is expected to fall, together with payments to the unemployed (Chart 24). This principally reflects relatively lower proportions of the populations in the relevant age groups, lower projected unemployment and the policy of indexing unemployment payments and some components of family payments to the CPI, which grows at a slower rate than GDP.

Table 10: Projected spending on payments to individuals (per cent of GDP)

	2001-02	2006-07	2011-12	2021-22	2031-32	2041-42
Age and Service Pension	2.93	2.83	2.90	3.64	4.28	4.59
Disability Support Pension	0.91	0.72	0.79	0.84	0.85	0.86
Parenting Payment (Single)	0.59	0.60	0.61	0.61	0.61	0.60
Unemployment allowances	0.85	0.78	0.71	0.59	0.49	0.41
Family Tax Benefit	1.57	1.34	1.22	1.08	1.01	0.93
Total	6.85	6.26	6.23	6.76	7.24	7.38

Source: Treasury projections.

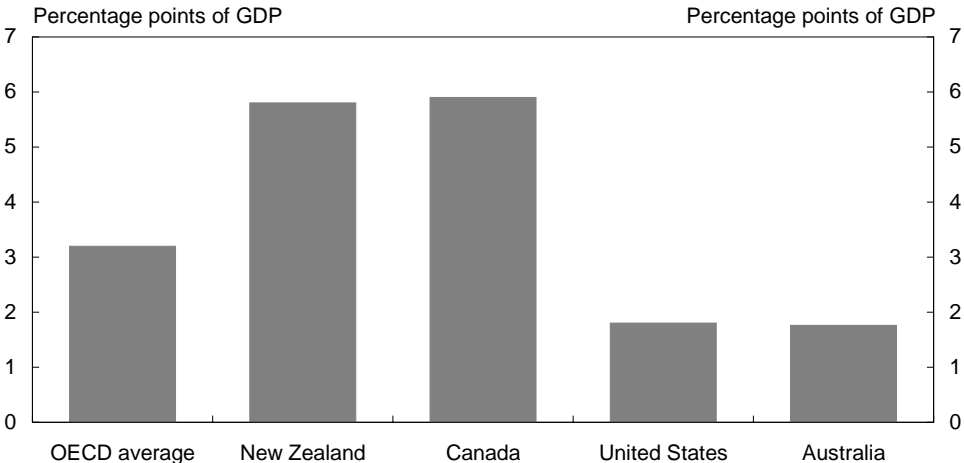
Chart 24: Projected Commonwealth payments to individuals by type



Source: Treasury projections.

The strongest growth is in payments to those of pension age. While the projected increase in Commonwealth spending on those of pension age as a proportion of GDP is substantial, it is relatively low compared with most other OECD countries (Chart 25). Australia is well placed in relation to age pension spending because the pension is means tested and targets poverty alleviation. By comparison, many OECD countries pay age pensions according to previous individual earnings, resulting in greater fiscal pressure as populations age.

Chart 25: International comparisons of projected increases in spending on age pensions 2000 to 2050



Source: Dang, Antolin and Oxley 2001 and Treasury.

EDUCATION AND TRAINING

Education and training is likely to result in higher living standards for individuals, by increasing labour productivity. In recent years, the demands for a more skilled labour force and people's desire for education have increased. These trends are likely to continue in line with the requirements of the 'knowledge economy' and pressure for greater lifelong learning.

Commonwealth spending on education is 1.84 per cent of GDP in 2001-02. Around half of this spending is on government and non-government schools delivered as specific purpose payments to the States. The Commonwealth is the main government provider of funds for higher education institutions (largely, universities), and allocates around a third of its education spending to universities. Commonwealth education spending also includes funding for vocational education and training providers (including technical and further education institutions), funding for very specific targeted initiatives and some student assistance payments and general administration costs.

State governments primarily fund school education, as well as vocational education and training providers (including technical and further education institutions). The trend towards privately funded education, both for schools and for tertiary education, is growing.

Key trends and drivers

A key driver of changes in education spending is the number of students. The rate of increase in student numbers is slowing due to declining fertility, with the proportion of the population in the principal age group for education (5 to 24 year olds) decreasing from 36 per cent in 1972 to 28 per cent in 2002.

However, participation rates for most age groups in post-secondary education generally have increased since the early 1990s. School participation rates have been largely constant since the mid-1990s after increasing from the mid-1980s.

While school participation rates are projected to remain around current levels, university and vocational education and training participation rates are projected to rise, both for the traditional tertiary education age group (17 to 24 year olds) and those aged over 24.

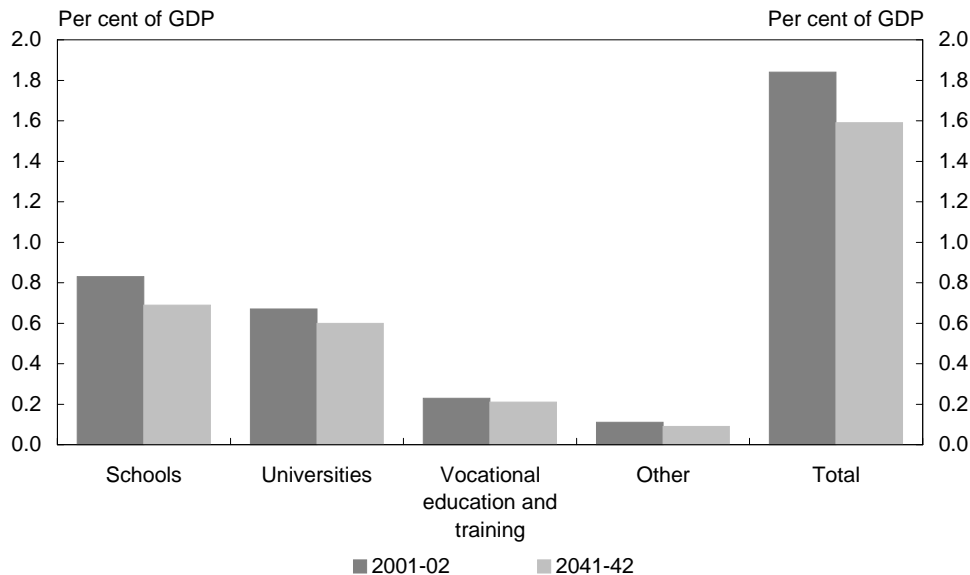
By 2042 the proportion of the population in the principal age group for education is projected to fall to 21 per cent. On that basis, and assuming increased university and vocational education and training participation rates, the overall growth in the total number of all students is projected to generally slow for the next two decades. Projected total numbers remain steady from 2021 until 2035, and then begin to decline.

Methodology and projections

The education projections in this report are based on current Commonwealth spending combined with projections based on demographic change and economy-wide cost growth, rather than assuming the continuation of current funding arrangements. The coverage trend model is described in Appendix C.

While Commonwealth spending per student is projected to rise over the next four decades, total Commonwealth education spending is projected to decline as a proportion of GDP (as GDP grows faster) to 1.59 per cent by 2041-42 (Chart 26). This also reflects the slower growth and, in some cases, decline in the principal age group for education. The fall occurs despite projected increases in real average costs per student, which have been indexed by wages, and projected higher participation rates for post-secondary education.

Chart 26: Projected Commonwealth education spending



Source: Treasury projections.

The rate of decline in Commonwealth education spending is expected to be highest in the second half of this decade (Table 11). This reflects the more rapid decline in the proportion of the school age population over the next decade, compared with later decades. If the proportion of the population participating in education is held constant, rather than assumed to grow, the results remain essentially the same, with spending projected to decline by only an additional 0.09 per cent of GDP by 2041-42.

Table 11: Projected Commonwealth education spending (per cent of GDP)

	2001-02	2006-07	2011-12	2021-22	2031-32	2041-42
Schools	0.83	0.84	0.77	0.72	0.71	0.69
Universities	0.67	0.63	0.63	0.62	0.60	0.60
Vocational education and training	0.23	0.22	0.22	0.21	0.21	0.21
Other	0.11	0.10	0.09	0.09	0.09	0.09
Total	1.84	1.79	1.71	1.64	1.61	1.59

Source: Treasury projections.

GOVERNMENT SUPERANNUATION

The Commonwealth sponsors a number of superannuation arrangements for its current and former employees. These arrangements affect future government spending because only a small proportion of the cost of benefits is funded at the time employees accrue the benefits. Typically, most benefits are funded as they become payable. Furthermore, most benefits are paid as pensions, so payments for a current contributor may continue for more than 60 years after the employment which gave rise to the benefit.

The most significant arrangements, in terms of future spending, are the schemes for Commonwealth civilian and defence employees (Box 2). Superannuation arrangements also are in place for federal politicians, judges, magistrates and the Governor-General, and the Commonwealth has commitments for many current and former tertiary education sector employees.

Box 2: Principal Commonwealth superannuation schemes

The most significant of the Commonwealth's superannuation obligations, in terms of spending, are the two schemes for civilian employees (the Commonwealth Superannuation Scheme — the CSS, and the Public Sector Superannuation Scheme — the PSS) and the corresponding schemes for military personnel (the Defence Force Retirement and Death Benefits Scheme — the DFRDB, and the Military Superannuation and Benefits Scheme — the MSBS).

The CSS and the DFRDB have been closed to new members since 1990 and 1991 respectively.

The four big schemes for civilian and military employees represent over 95 per cent of total Commonwealth superannuation unfunded liabilities so the projections relate to only these schemes.

New superannuation arrangements were put in place for civilian and defence employees at the beginning of the 1990s when the CSS and DFRDB were closed. The new schemes — the PSS and MSBS — have a higher level of advance funding.

The Government is seeking to close the PSS and provide choice to civilian public servants, from 1 July 2003. Legislation has been passed by the House of Representatives, but has been rejected by the Senate. The Government has not announced when it will reintroduce the legislation. The projections make no allowance for this proposed future policy change, but should it proceed it would be likely to increase the extent of advance funding.

Key trends and drivers

Three main factors drive future spending on Commonwealth superannuation:

- the move towards a greater degree of advance funding of superannuation liabilities increases current spending, but reduces the burden future governments will need to meet;
- membership of the closed schemes for civilian and defence employees is declining. These schemes are more expensive on a gross basis for the Commonwealth than their replacements. Consequently, as membership in the old schemes falls, aggregate costs fall; and
- the overall number of Commonwealth employees is declining. Numbers have fallen in absolute terms in recent years, and it is assumed for costing purposes that they will remain at the current level over the next four decades. This represents a decline in membership relative to the Australian population, and results in declining costs relative to GDP.

Methodology and projections

The projections are based on official actuarial valuations undertaken in 1999-2000 using data to 30 June 1999.

Commonwealth spending on superannuation is projected to decline fairly steadily over the next four decades, from around 0.56 per cent of GDP in 2001-02 to 0.32 per cent of GDP in 2041-42 (Table 12). The greater degree of advance funding, the closure of old schemes and the declining overall numbers of Commonwealth employees as a proportion of the Australian population all will work in the same direction to drive down this spending.

Table 12: Projected Commonwealth spending on superannuation for members of the CSS, PSS, DFRDB and MSBS (per cent of GDP)

	2001-02	2006-07	2011-12	2021-22	2031-32	2041-42
Civilian schemes	0.38	0.36	0.35	0.32	0.28	0.22
Military schemes	0.18	0.17	0.15	0.13	0.12	0.10
Total	0.56	0.52	0.50	0.45	0.39	0.32

Sources: All figures are from Towers Perrin 2000 and Australian Government Actuary 2000.

DEFENCE

The defence of Australia and its national interests is a core Commonwealth Government responsibility. In recent times, the role of the Australian armed forces has expanded from a focus on conventional war fighting to other military operations, including humanitarian relief and peace keeping. In 2001-02, defence accounts for around 8 per cent of Commonwealth spending.

Key trends and drivers

Key drivers in defence costs include the rising cost of employing military personnel and maintaining and replacing capital equipment, and the need to have defence forces at a higher state of readiness.

A major review of Australia's defence requirements in 2000 produced the Defence White Paper, *Defence 2000: Our Future Defence Force*. The White Paper foreshadowed capability enhancements and an increase in defence spending of an average of around 3 per cent per year in real terms over the decade to 2010.

By 2010, defence spending is expected to reach around \$20 billion. Over the decade to 2010, cumulative defence spending is estimated to be over \$160 billion.

The cost of defence beyond this decade is more difficult to ascertain, as factors such as changes to the strategic outlook, capability priorities and the state of military technology will influence it. Further, the strategic environment is difficult to predict. Changes to the strategic environment may affect the type of capabilities the Government pursues and the cost of defence.

ENVIRONMENT

Australia's environment provides natural capital, offering many essential services. It provides ecosystems that regenerate natural resources and assimilate the waste of people and industry, recreational benefits and inputs to industry. In addition, it has important cultural significance. Deterioration of our natural capital would be likely to affect the wellbeing of current and future generations, reduce the economic base and consequently affect intergenerational equity.

In 2001-02 the Commonwealth is spending around \$1.8 billion to conserve Australia's natural capital. Key areas of Commonwealth involvement include conserving and sustainably managing ecosystems and natural resources including land, coastal and marine environments, preserving air and water quality, and addressing climate change. These issues are explored in the recent Government report *Australia State of the Environment 2001*. Policy initiatives include regulatory measures, allocation of funding to address specific problems and institutional reforms.

Key trends and drivers

Australia currently faces a number of significant environmental problems, which may have ongoing implications for Commonwealth spending. These include land and inland water quality degradation, loss of biodiversity, air quality, climate change and pressure on coastal, marine and wetland ecosystems. These environmental problems often occur when people do not face the full costs of or receive the full benefits from their actions. Problems also arise when biophysical processes are not well understood, leading to unintended impacts.

The value Australians place on their natural environment is likely to rise, resulting in increasing demand for environmental quality. Also, as knowledge and understanding of ecosystems and human impacts on the environment improve, calls for environmental protection may increase. However, this need not translate into more Commonwealth spending on the environment.

While some Commonwealth spending may be necessary, the approach and level of intervention chosen will determine final costs. For example, adopting voluntary, regulatory, and market-based approaches would lead to polluters meeting many costs. Also, the States have wide responsibilities for environmental matters, so often State or Local governments can intervene most appropriately. In addition, increased demand for environmental quality is likely to provide new market opportunities for the private sector, leading to more environmentally friendly production.

Governments also could reduce future economic and budgetary costs by integrating policy approaches to economic development to minimise environmental damage. This should increasingly occur as Australia's understanding of environmental problems improves over time. Early action to prevent environmental damage, rather than later action to remedy it, is likely to reduce long-term costs.

Revenue

Commonwealth total revenue is derived from taxation and non-taxation sources. Like international long-term budget reports,⁵ this report projects revenue to be a constant proportion of GDP. This is because both taxation revenue growth and GDP growth have the same major drivers (for example, wages and profits). Commonwealth total revenues are projected to be 22.4 per cent of GDP from 2005-06, the final year of the forward estimates period, to 2041-42.

TAXATION REVENUE

Taxation revenue includes income taxes and indirect taxes. Income taxes on individuals and companies are the largest source of Commonwealth revenue. In 2001-02, taxation revenue is expected to account for 91 per cent of total Commonwealth revenue. Of this, income taxes are expected to account for 73 per cent of total Commonwealth revenue, indirect taxes are expected to account for 15 per cent and other taxes are expected to account for 3 per cent.

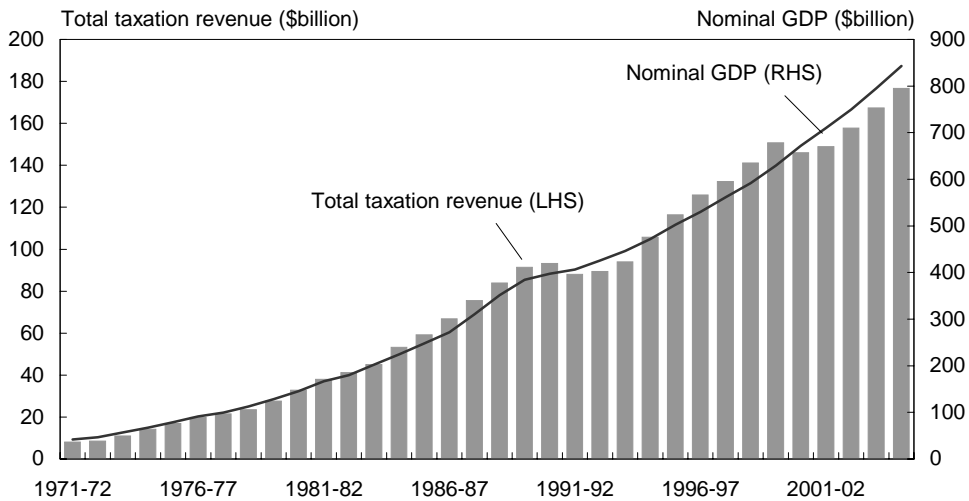
Key trends and drivers

The key drivers of trends in total Commonwealth revenue are economic variables, such as wages, employment, profits and imports, which influence income tax revenue and indirect tax revenue (Appendix D).

Various taxes are levied on the components of GDP and each component has generally grown at around the same rate as nominal GDP. As a result, total taxation revenue also tends to grow in line with nominal GDP (Chart 27).

5 For example, see Dang, Antolin and Oxley 2001, Congressional Budget Office (US Congress) 2001, Her Majesty's Treasury 2001 and The Treasury (New Zealand) 2001.

Chart 27: Total Commonwealth taxation revenue and GDP

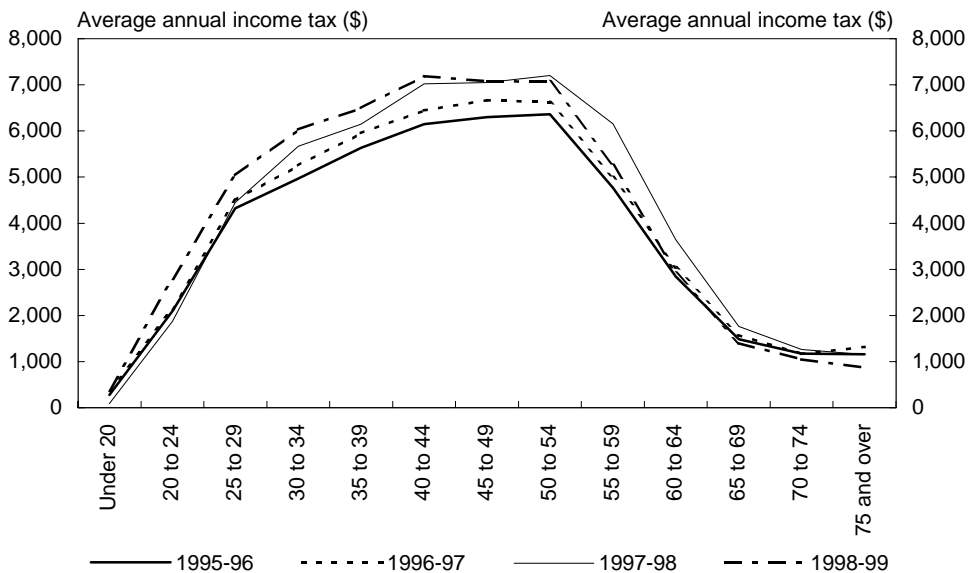


Source: ABS Cat. No. 5206.0 and Commonwealth of Australia Budget Paper No.1 (various).

Taxation revenue risks

In 1996, the *Report of the National Commission of Audit* noted that the ageing of the population would affect personal income tax revenue, as the average tax paid per person declines for older age groups (Chart 28).

Chart 28: Average annual income tax per person by age, various years



Source: Treasury.

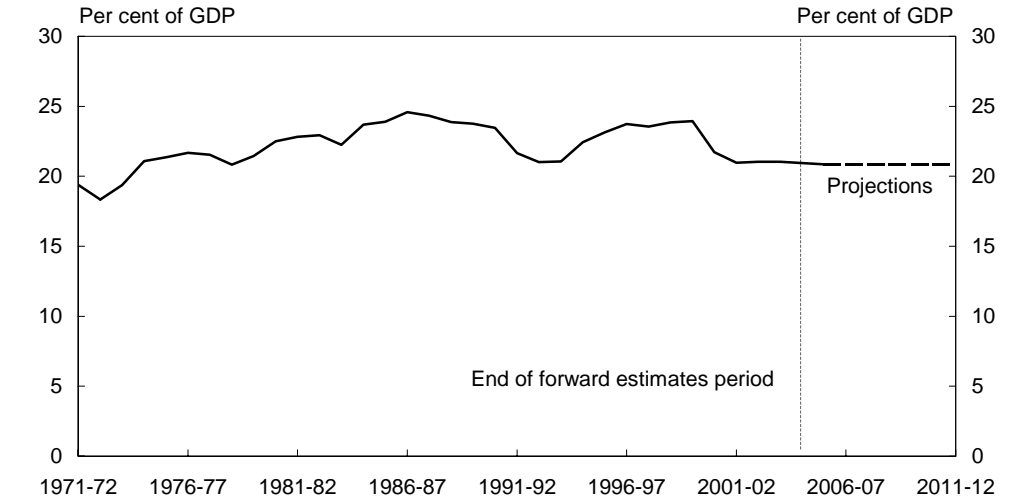
However, personal income tax revenue does not fall as a percentage of GDP as the population ages, because labour force and wages growth trends affect income tax and GDP growth more or less equally. These trends include rising female labour force participation in each age group and the slowing in aggregate wages growth resulting in slower GDP growth.

The National Commission of Audit also noted that an ageing population could affect the wholesale sales tax base. However, *The New Tax System* replaced the wholesale sales tax with the GST, which is less at risk from population ageing because its broader base includes services. Furthermore, the Intergovernmental Agreement allocates the GST revenue to the States and Territories.

Methodology and projections

Over the last three decades, Commonwealth taxation revenue has remained relatively steady as a proportion of GDP (Chart 29). Major components of taxation revenue have grown in line with GDP. Therefore, Commonwealth taxation revenue is assumed to remain constant at 20.8 per cent of GDP from 2005-06, the final year of the forward estimates period, to 2041-42.

Chart 29: Total Commonwealth taxation revenue



Source: ABS Cat. No. 5206.0 and Commonwealth of Australia Budget Paper No.1 (various).

NON-TAXATION REVENUE

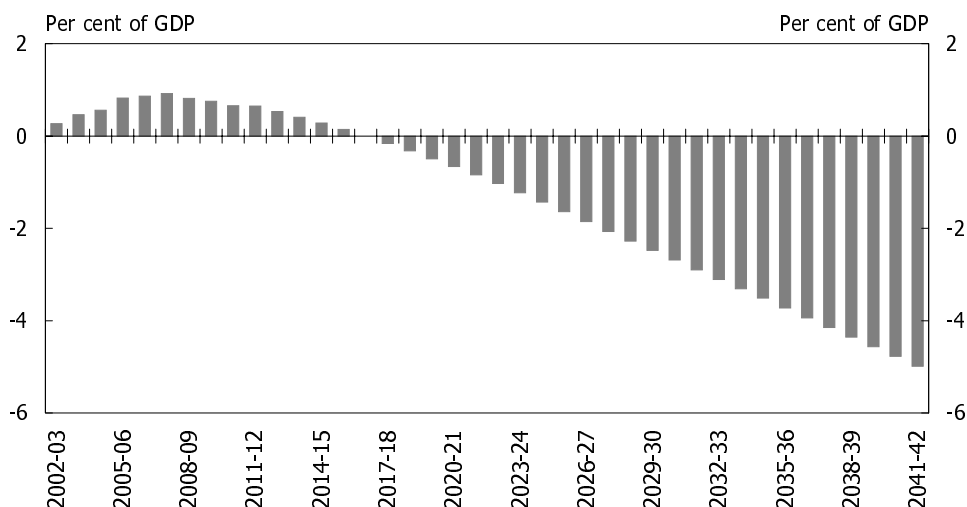
Non-taxation revenue includes sales of goods and services, interest, dividends and petroleum royalties. In 2001-02, non-taxation revenue is expected to account for 9 per cent of total Commonwealth revenue. These revenues are difficult to relate to economic parameters, so Commonwealth non-taxation revenues are assumed to remain at 1.6 per cent of GDP from 2005-06, the final year of the forward estimates period, to 2041-42.

PART IV: OVERALL RESULTS

Aggregate impact

The projections of Commonwealth spending and revenue show that current trends in spending are likely to lead to significant fiscal demands with spending starting to exceed revenue in around 15 years. By 2041-42, the gap between spending and revenue is projected to grow to around 5.0 per cent of GDP (Chart 30).

Chart 30: Projections of the fiscal pressure



Source: Treasury projections.

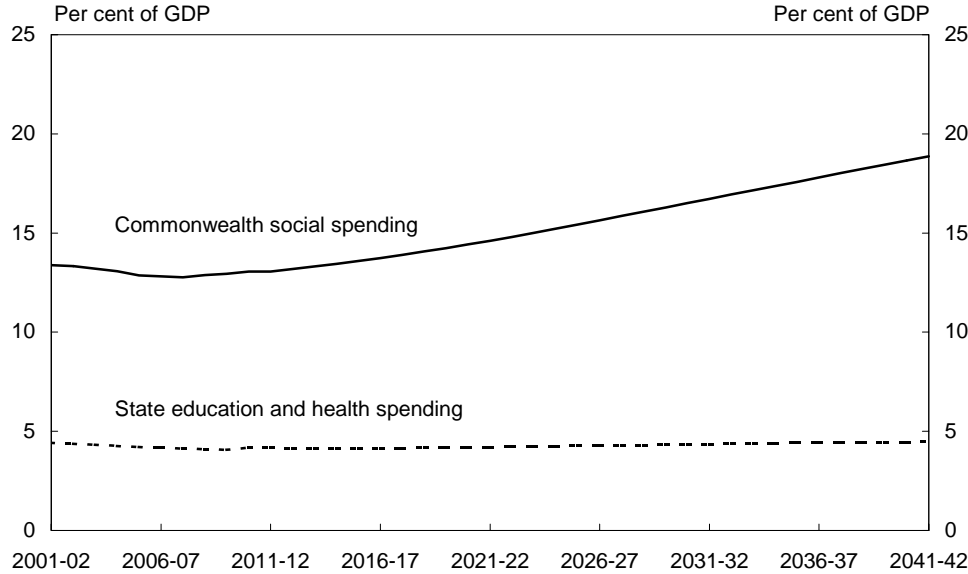
By 2041-42 Commonwealth spending is projected to be 27.4 per cent of GDP. These spending projections incorporate the health, social safety net payments to individuals, education and government superannuation spending projections from Part III (Table 13). The diverse nature of other areas of Commonwealth government spending makes it difficult to project this spending based on trends. Spending as a proportion of GDP may increase in some areas, while spending in other areas may decrease. Consequently all other spending is assumed to remain the same proportion of GDP to 2041-42 as is currently forecast for 2005-06. This is 8.3 per cent of GDP.

Revenue projections assume that total revenue will remain constant at 22.4 per cent of GDP from 2005-06.

Previous studies of population ageing¹ have concluded that the Commonwealth is likely to face greater pressure for increased social spending than State and Territory governments. This is because Commonwealth social spending is more concentrated on the aged than State expenditure and because Commonwealth health programmes have shown higher non-demographic growth. For example, the Commonwealth has responsibility for age pensions and nursing homes, while 25 per cent of State and Territory spending is on education.

Chart 31 provides an indicative comparison of projections of Commonwealth social spending and State and Territory health and education expenses.

Chart 31: Projections of Commonwealth social spending and State and Territory health and education spending



Source: Treasury projections.

For the Commonwealth, increased health and age pension spending should be partly offset by CPI-indexed unemployment payments and family payments and, to a lesser extent, by education spending (Table 13).

1 For example, Social Welfare Policy Secretariat 1984 and Department of Community Services and Health 1990.

**Table 13: Projections of Commonwealth demographic spending
(per cent of GDP)**

	2001-02	2006-07	2011-12	2021-22	2031-32	2041-42
Health and aged care	4.7	4.8	5.1	6.2	7.9	9.9
Age and Service Pension	2.9	2.8	2.9	3.6	4.3	4.6
Disability Support Pension	0.9	0.7	0.8	0.8	0.9	0.9
Parenting Payment (Single)	0.6	0.6	0.6	0.6	0.6	0.6
Unemployment allowances	0.8	0.8	0.7	0.6	0.5	0.4
Family Tax Benefit (Parts A and B)	1.6	1.3	1.2	1.1	1.0	0.9
Total payments to individuals	6.8	6.3	6.2	6.8	7.2	7.4
Education	1.8	1.8	1.7	1.6	1.6	1.6
Unfunded government superannuation	0.6	0.5	0.5	0.5	0.4	0.3
Total	13.9	13.3	13.6	15.1	17.1	19.2

Source: Treasury projections.

Commonwealth health and aged care spending is projected to grow significantly, due to the increasing cost of new procedures and medicines, with the ageing of the population also increasing demand for health spending. Technological change and income effects generally drive the increases in real health spending per person.

The expected slight decline in Commonwealth education spending as a proportion of GDP is because younger people will comprise a smaller proportion of the overall population. The projections assume that education participation rates and real costs per student will increase.

Commonwealth spending on Age and Service Pensions also is projected to increase significantly over the next four decades. However, the projected increase in spending is smaller than for most other industrialised countries because the Australian pension has a maximum rate that is not related to an individual's earnings, and is means tested. The projected increase in Age Pension spending as a proportion of GDP is partly offset by the projected decrease in payments which grow more slowly because they are indexed by the CPI rather than wages. These include unemployment allowances and significant components of family payments.

Alternative scenarios

Significant uncertainty surrounds the assumptions underlying the report's projections and their impact on government finances. Accordingly, the results represent a plausible central case and should not be viewed as specific forecasts. Even so, exploring the impact of varying some key assumptions suggests the projected size of the budget pressures is reasonably robust to changes in the underlying assumptions.

The demographic assumptions probably are least uncertain, as they are based on relatively stable long-term trends. Greater uncertainty surrounds the assumptions about productivity and spending.

Plausible variations in the assumptions were developed to illustrate the impact on GDP and where effects were significant, on Commonwealth spending (Table 14). A detailed discussion is provided in Appendix B. The impact on revenue has not been examined, as generally revenue growth corresponds to GDP growth, and this can be expected to continue.

Table 14: Assumptions underlying sensitivity analysis

	Base case	Lower	Higher
Mortality			
Male life expectancy (years) in 2042	82.5	-	83.9
Female life expectancy (years) in 2042	87.5	-	88.5
Fertility (total fertility rate)(a)	1.6	1.5	-
Net migration (number of people per year)	90,000	80,000	135,000
Full-time labour force participation			
of older male workers	64.9% in 2011-12	-	68.1% by 2011-12
Labour productivity growth	1.75%	1.2%	2.0%
Unemployment rate	5%	4%	6%
Non-demographic health costs growth(b)	-	2.5%	3.0%

(a) Represents the number of children a woman would bear during her lifetime if she experienced the current age-specific fertility rates at each age of her reproductive life.

(b) The annual real rate of growth per person age-adjusted. The health base case uses the component rather than the aggregate model.

Scenarios that involve a higher proportion of people in older age groups, a lower proportion of people employed relative to the population, lower productivity growth, higher unemployment and higher growth in the cost of programmes increase future pressures on government spending (Table 15).

Table 15: Impact of alternative scenarios in 2041-42 (percentage points)

Factors that increase budget pressure					
	Lower mortality	Lower labour productivity	Higher unemployment rate	Higher health cost growth	
Annual labour force growth	neg	0	0	0	
Annual real GDP growth	neg	-0.55	neg	0	
Annual real GDP per person growth	-0.04	-0.55	neg	0	
Aged to working-age ratio	1.5	0	0	0	
Child to working-age ratio	neg	0	0	0	
Spending impact (percentage points of GDP)					
Health	0.17	**	**		1.52
Aged care	0.12	**	**		0
Age and Service Pension	0.18	0.02	**		0
Other payments to individuals	0.01	0.20	0.07		0
Education	neg	0.03	**		0
Total	0.48	0.25	**		1.52
Factors that decrease budget pressure					
	Higher labour force participation (older workers)	Higher migration	Higher labour productivity	Lower unemployment rate	Lower health cost growth
Annual labour force growth	0	0.22	0	0	0
Annual real GDP growth	0.01	0.20	0.25	neg	0
Annual real GDP per person growth	0.01	neg	0.25	neg	0
Aged to working-age ratio	0	-2.4	0	0	0
Child to working-age ratio	0	0.1	0	0	0
Spending impact (percentage points of GDP)					
Health	-0.10	-0.25	**	**	-0.46
Aged care	-0.02	-0.13	**	**	0
Age and Service Pensions	-0.08	-0.28	-0.01	**	0
Other payments to individuals	-0.03	neg	-0.03	-0.07	0
Education	-0.02	-0.01	-0.01	**	0
Total	-0.25	-0.67	-0.05	**	-0.46
Factors that have an uncertain impact					
	Lower migration	Lower fertility			
Annual labour force growth	-0.07	-0.10			
Annual real GDP growth	-0.06	-0.10			
Annual real GDP per person growth	-0.01	-0.03			
Aged to working-age ratio	0.7	0.6			
Child to working-age ratio	-0.1	-1.3			

Note: In the productivity scenarios health and aged care spending is assumed to increase to the same extent as the productivity-based wage increase. The potential impact of productivity growth on the cost of health care is difficult to quantify and has not been included here.

Source: Treasury projections.

Factors that increase budget pressure

Lower mortality rate

In the lower mortality scenario more people live to older ages. However, it takes around 30 years to affect significantly the numbers of people in the older age groups.

Projected government spending increases gradually, by almost 0.5 per cent of GDP by 2041-42, due to higher spending on health and aged care, Age Pensions and other payments to individuals.

Spending on health and aged care is projected to increase, due to an increase in the number of people over 65 and an even greater increase in the number over 85. However, as population changes take time to develop, the impact develops slowly. The increase in health spending is due mainly to the growth in PBS subsidies as these are more sensitive to an increase in the older population than other health spending. This is because older people tend to use far more medicines than other age groups. The increase in aged care spending reflects the large increase in the numbers of the very old (aged over 85), the age range where nursing home usage and cost per head of population is highest.

Spending on Age and Service Pensions increases, as more people are receiving these pensions, but projections of the other social safety net payments to individuals do not change significantly.

Lower productivity growth rate

The low productivity growth scenario assumes an average productivity growth rate of 1.2 per cent per year, replicating the average growth rates of the 1980s, which were well below the long-term average.

Lower productivity growth would increase spending as a proportion of GDP, primarily because growth in GDP would slow. This is largely because payments to individuals which are indexed to the CPI would be a greater proportion of GDP. This occurs because with lower GDP growth the gap between CPI and nominal GDP growth is reduced. Payments to individuals which are linked to productivity through wage indexation (such as Age and Disability Support Pensions), and spending in areas strongly linked to productivity and wage growth (such as health, aged care and education) would increase in line with GDP. Consequently, spending in these areas as a percentage of GDP would change little as a result of changes in productivity levels.

Higher unemployment rate

The central scenario assumes the unemployment rate reaches 5 per cent by 2007-08. The alternative scenario considers the impact of higher unemployment, reaching 6 per cent by 2006-07 and remaining constant. In the short term, higher unemployment would lower GDP growth. Government spending would increase because more people would depend on government payments for income, particularly unemployment allowances; this would increase fiscal pressure.

Higher health cost growth

The projected level of health costs is very sensitive to the choice of growth rate in non-demographic health costs. The higher growth (3.0 per cent) case is in line with growth experienced over the last 12 years, if the impact of the Private Health Insurance Rebate is excluded. This increases health costs, in comparison to the central scenario, by 1.5 per cent of GDP by 2041-42. (For more detail see Part III Health and aged care.)

The crucial implication of this analysis is that non-demographic growth arising from new technology and increased use and costs of services impacts the projections much more than plausible changes in the demographic and economic assumptions, such as decreased mortality and increased labour force participation of older workers.

Factors that decrease budget pressure

Higher labour force participation rate

An increase in the labour force participation of older workers (or any group of workers) would decrease future fiscal pressures because it reduces the need for income support and increases GDP. Higher labour force participation also allows people to accumulate greater superannuation enhancing their health and lifestyle in retirement.

Overall, higher full-time labour force participation of older men, under this scenario, would reduce projected government spending by 0.25 per cent of GDP by 2041-42, principally by increasing GDP. This reduced spending is mainly in health and Age Pensions.

However, this only captures first order effects, and does not capture any potential second order effects, such as changes in health or health service use of the additional older workers who remained in the workforce for longer.

Higher productivity growth rate

The high productivity growth scenario assumes that the average growth rates in the 1990s will continue, with annual growth of 2.0 per cent. Higher productivity growth would tend to reduce future budget pressures, by increasing GDP and by lowering CPI-indexed programmes as a proportion of GDP. It also increases private incomes to a greater extent, which may increase demand for services, in areas such as health and aged care.

Lower unemployment rate

This scenario assumes that unemployment reaches 4 per cent by 2009-10 and remains constant after that. This would lead to higher GDP growth in the shorter term. Government spending, particularly on unemployment allowances, would be lower, decreasing fiscal pressure.

Lower health cost growth

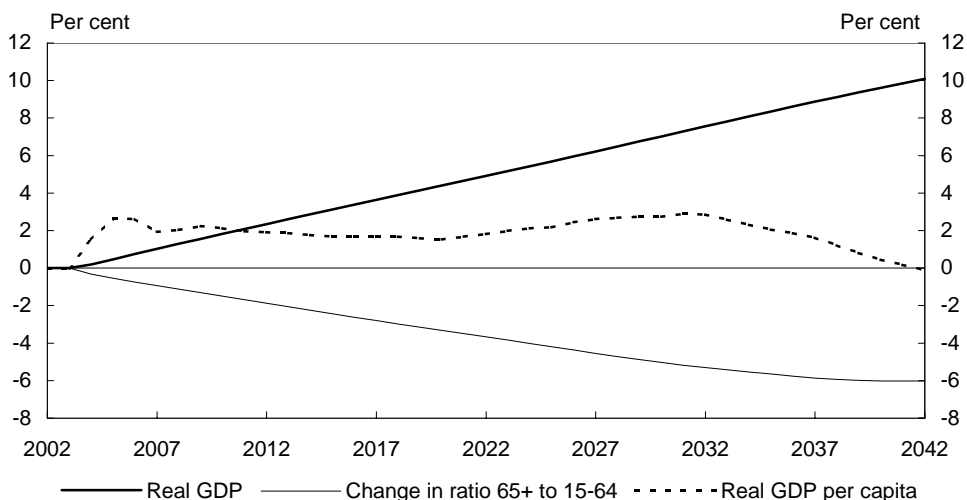
As indicated, the projected level of health costs is very sensitive to growth in non-demographic health costs. The impact of changing the assumed growth rate is tested by decreasing the average annual non-demographic growth rate for all health spending to 2.5 per cent. This can be interpreted as a drop of 0.1 percentage points from the central scenario which broadly corresponds to a non-demographic growth rate of 2.6 per cent. The lower growth rate decreases projected health costs by 0.5 per cent of GDP by 2041-42.

Higher migration rate

The higher migration scenario assumes a net migration rate of 135,000 people per year. The effects of increased net migration depend on which components of the migration intake change (skilled, family reunion or humanitarian) and the age-gender profile of migrants. Skilled migrants, for example, would generally find employment more quickly and be less reliant on government services than other migrants. For this scenario migrants are assumed to experience the same fertility, mortality, employment and productivity rates as Australian residents of the same age. Higher migration would tend to increase growth in the labour force and thus in GDP. The composition of the migrant intake also influences spending.

As immigrants are younger on average than the resident population, the increased migration scenario results in a decline in the aged to working-age ratio over the next four decades and a 10 per cent increase in GDP by 2041-42 (Chart 32). This increase in GDP results in government spending on health, aged care and Age Pensions falling as a percentage of GDP. The effect is reduced over the longer term as the immigrants themselves begin to age.

Chart 32: Impact of increasing migration by 50 per cent



Source: Treasury projections.

Factors that have an uncertain impact

Lower fertility rate

In the central scenario the fertility rate falls to 1.6 per cent by 2042. The lower fertility scenario assumes the fertility rate will fall to 1.5 per cent by 2042.

Lower fertility leads to slower growth in the labour force in around 20 years. This leads to lower GDP growth and a lower ratio of those of labour force age to those not of labour force age. This may increase the pressures on government spending relative to GDP growth, although spending in some areas would decrease. Family payments would be around 0.03 per cent of GDP lower by 2041-42. Changes in education spending would be small, as any change in fertility is projected to develop slowly. The effects on spending on unemployment payments, Disability Support Pensions and health are less certain. A reduction in the population of labour force age may decrease the unemployment rate. Health spending may decrease due to a reduced need for maternity and neonatal services.

Lower migration rate

The lower migration scenario assumes a net migration rate of 80,000 people per year. The effects of lower net migration would depend on which components of the migration intake changed. Lower migration would tend to lead to lower growth in the labour force and GDP. The size and composition of the migrant intake would also influence spending.

Assessment of sustainability

The spending and revenue projections in this report suggest that governments will need to make policy adjustments to maintain a sustainable fiscal position over the next four decades. The outlook over the next decade is positive, with the budget projected to remain in surplus. However, the projections for the central scenario suggest the government would need to make a fiscal adjustment of around 5.0 per cent of GDP by 2041-42 to maintain budget balance. This fiscal adjustment could take the form of reducing spending growth through policy change, imposing higher taxes on future generations of taxpayers, or combining these approaches.

Uncertainties surrounding the necessary fiscal adjustment

Considerable uncertainty surrounds the projections of the size of the likely fiscal adjustment. In particular, the economic and demographic assumptions which underpin the projections of demographically-driven spending are uncertain. For example, labour shortages arising from an ageing population may increase the labour force participation of older workers. This would delay retirement and increase this group's incomes, reducing the budgetary impact of population ageing.

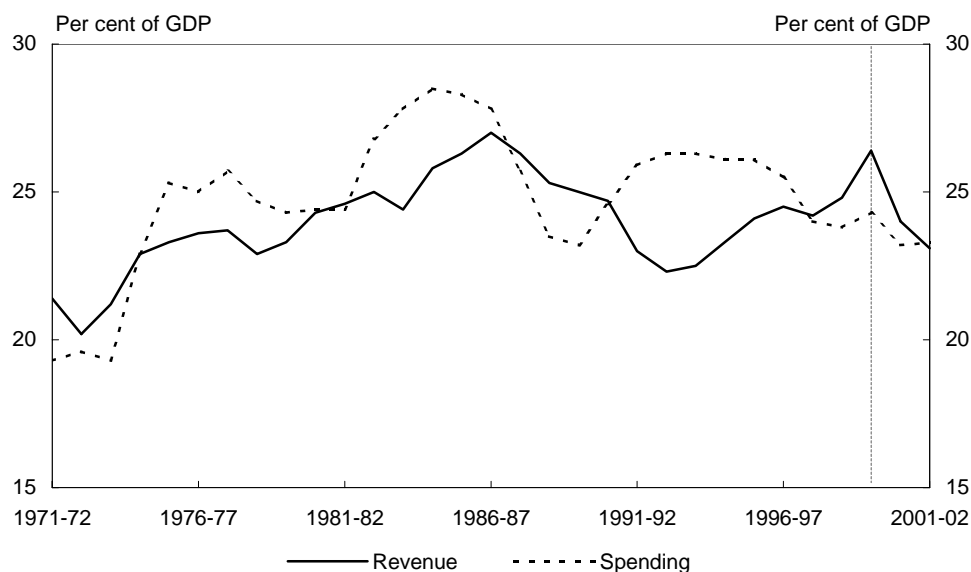
In addition, the projections assume that non-demographic spending and total revenue will remain a constant share of GDP over time. However, pressure to increase non-demographic spending in various areas (for example, the environment and defence) may increase spending on these programmes as a share of GDP.

The report's central scenario suggests spending pressures will rise in around 15 years. However, early policy action would help prevent the need for more severe policy changes in the future. Therefore governments must continue to consider the long-term fiscal implications of policy decisions.

Assessment of the adjustment task in a historical context

An adjustment of around 5.0 per cent of GDP by 2041-42 represents a significant challenge. While governments have achieved fiscal adjustments of a similar size on occasion, most changes in spending appear to be largely cyclical and are not maintained over time (Chart 33). In the past, total spending has diverged 5.5 per cent of GDP from the 30-year average of 24.6 per cent of GDP. Total revenue has diverged 3.9 per cent of GDP above the 30-year average of 23.9 per cent of GDP.

Chart 33: Historical total Commonwealth general government spending and revenue



Note: There is a break in the series between 1998-99 and 1999-00. Data for the years up to and including 1998-99 are consistent with the cash ABS GFS reporting requirements. From 1999-00 onwards, data are derived from the accrual ABS GFS reporting framework. Due to methodological and data-source changes associated with the change, time series data which encompasses measures derived under both cash and accrual accounting should be used with caution.

A continued focus on sound budget management and planning

Recognising future pressures on government finances highlights the importance of maintaining the current rigorous fiscal and budgetary framework. This framework has been central to achieving Australia's current strong financial position. In the future, a strong fiscal and budgetary framework will assist in containing the size of a fiscal adjustment.

Nevertheless, recent OECD work shows that compared with other OECD countries, Australia faces relatively moderate long-term fiscal pressure.² Many OECD countries face higher potential age pension burdens than Australia because their public pension schemes are related to an individual's earnings or are universal, and because the schemes are not sufficiently pre-funded.

However, there is no room for complacency. To maintain the flexibility to deal with long-term spending pressures, governments must retain the current disciplined approach to fiscal policy and the medium-term fiscal strategy. Intergenerational considerations partly prompted the Government to adopt the medium-term strategy in

² Dang, Antolin and Oxley 2001.

1996, and its efforts to return the budget to surplus and reduce debt have helped to lay a sound foundation for long-term fiscal sustainability. It will be important to maintain this approach in the future, including while demographic and other longer-term spending influences remain relatively favourable over the next decade.

The Government can improve the economy's capacity to manage future increases in social spending or other longer-term expenditures by continuing to pursue policies that boost long-term economic growth. This includes promoting productivity growth, labour force participation and by facilitating job creation to reduce unemployment. Already, the Government has adopted policies to achieve this (for example, labour market reforms, the macroeconomic policy framework and welfare reform). However, it must continue to focus on this as a key priority. Tax reform is also important in terms of providing a robust tax base that will grow in line with the economy.

Appendix A: Demographic spending projections

Commonwealth demographically-driven spending is projected based on the central scenario (Table A1).

Table A1: Projections of Commonwealth demographic spending (per cent of GDP)

	2001-02	2006-07	2011-12	2021-22	2031-32	2041-42
Medical Benefits Scheme	1.1	1.1	1.2	1.3	1.6	1.8
Pharmaceutical Benefits Scheme	0.6	0.6	0.8	1.3	2.1	3.4
Hospital and health services	1.2	1.2	1.2	1.3	1.5	1.6
Other (including Private Health Insurance Rebate)	1.1	1.1	1.2	1.2	1.3	1.4
<i>Total health</i>	<i>4.0</i>	<i>4.0</i>	<i>4.3</i>	<i>5.2</i>	<i>6.5</i>	<i>8.1</i>
Residential care	0.6	0.6	0.7	0.8	1.1	1.4
Community care	0.1	0.2	0.2	0.2	0.3	0.3
<i>Total aged care</i>	<i>0.7</i>	<i>0.8</i>	<i>0.8</i>	<i>1.0</i>	<i>1.4</i>	<i>1.8</i>
Total health and aged care	4.7	4.8	5.1	6.2	7.9	9.9
Age and Service Pension	2.9	2.8	2.9	3.6	4.3	4.6
Disability Support Pension	0.9	0.7	0.8	0.8	0.9	0.9
Parenting Payment (Single)	0.6	0.6	0.6	0.6	0.6	0.6
Unemployment allowances	0.8	0.8	0.7	0.6	0.5	0.4
Family Tax Benefit (Parts A and B)	1.6	1.3	1.2	1.1	1.0	0.9
Total payments to individuals	6.8	6.3	6.2	6.8	7.2	7.4
Schools	0.8	0.8	0.8	0.7	0.7	0.7
Higher education	0.7	0.6	0.6	0.6	0.6	0.6
Vocational education and training	0.2	0.2	0.2	0.2	0.2	0.2
Administration and other	0.1	0.1	0.1	0.1	0.1	0.1
Total education	1.8	1.8	1.7	1.6	1.6	1.6
Unfunded Government superannuation	0.6	0.5	0.5	0.5	0.4	0.3
Total Commonwealth demographically driven spending	13.9	13.3	13.6	15.1	17.1	19.2

Source: Treasury projections.

Appendix B: Labour force projections and sensitivity analysis assumptions

This appendix details age-specific labour force trends and projections underpinning the central scenario and a description of assumptions used in the higher labour force participation and lower mortality scenarios.

Labour force participation trends and projections

Under the central scenario, labour force participation is assumed to continue recent trends, with age-specific male participation stabilising from its downward trend and age-specific female labour force participation rising.

While total labour force participation is projected to decline as the proportion of Australia's population aged over 65 grows, some age groups are expected to experience rising labour force participation based on recent trends (Chart B1).¹

Labour force participation rates for women in most age groups have increased significantly over the past 20 years, with most growth occurring in part-time labour force participation. This trend is projected to continue, but may be limited over the longer term by child-raising and caring activities in which women traditionally play a large part.

Male labour force participation rates for most age groups have decreased over the past 20 years. Underlying this trend is a significant decrease in full-time participation and a smaller increase in part-time participation.

Young men and women under the age of 20 are now more likely to participate in the labour force on a part-time rather than full-time basis. More than 20 per cent of men aged 60 to 64 who are in the labour force are part-time.

1 The methodologies used for trend analysis and projections are discussed in Bacon 1999.

Chart B1: Total labour force participation trends and projections by age group and gender

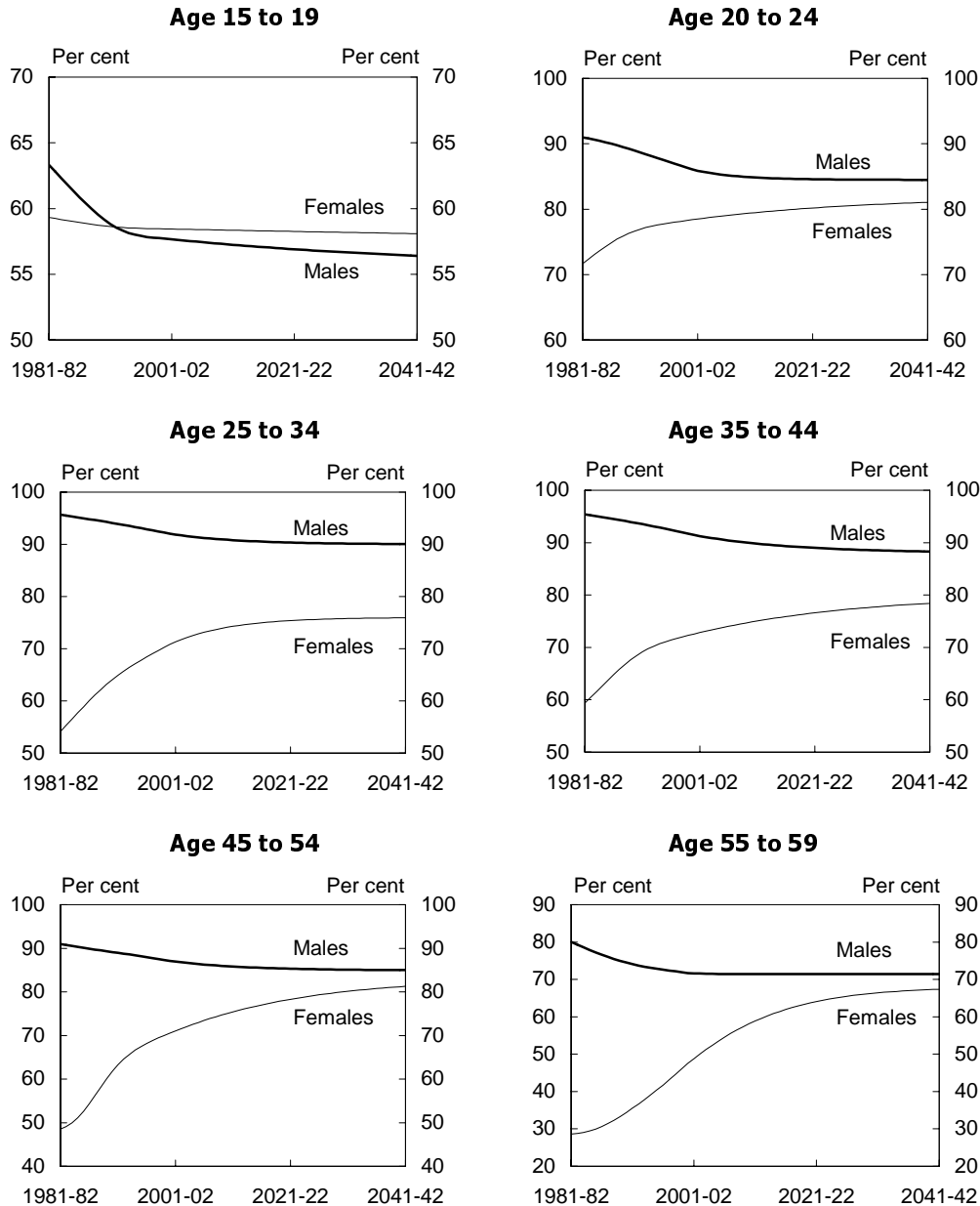
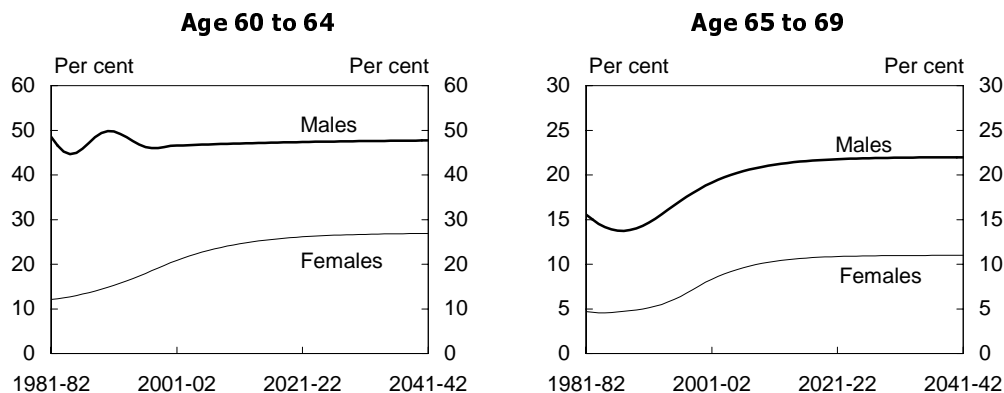


Chart B1: Total labour force participation trends and projections by age group and gender (continued)



Source: ABS Cat. No. 6291.0.40.001 and Treasury trends and projections.

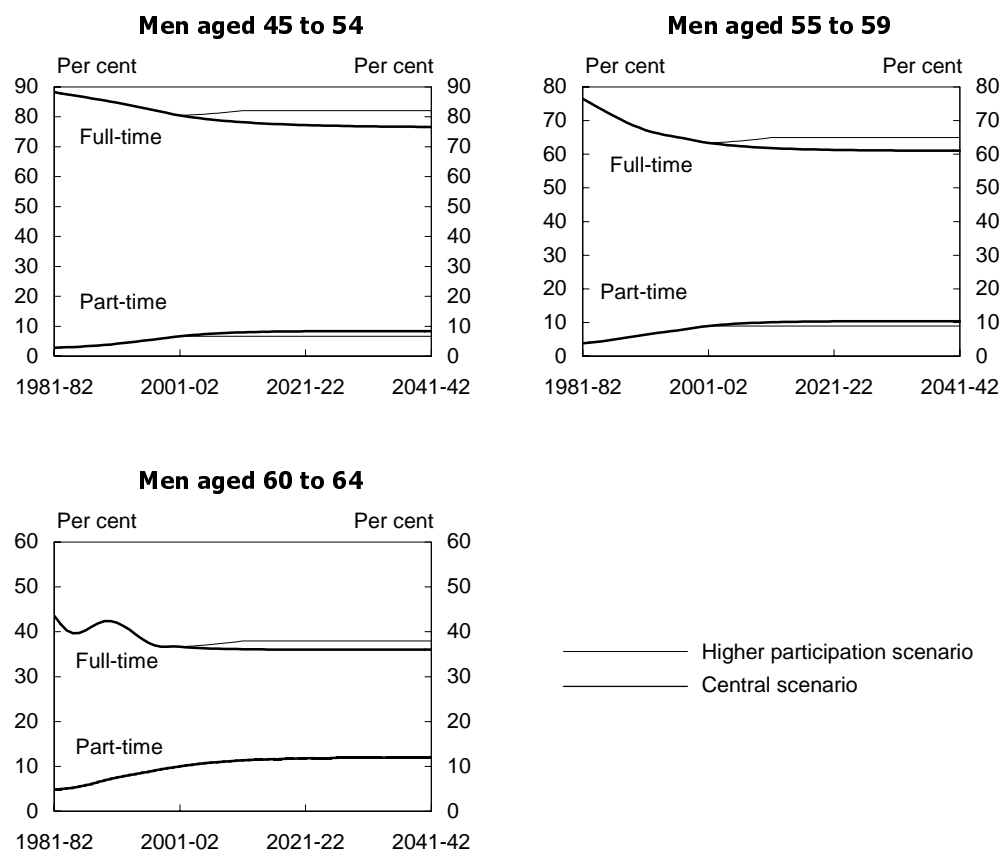
Higher labour force participation scenario

The higher labour force participation scenario assumes that the decade-long trend of declining full-time labour force participation among men aged over 45 is reversed and labour force participation increases. The recent declines may reflect factors that are avoidable, possibly due to choice, but may also be due to some older men having difficulty finding new employment if retrenched. An increase in the labour force participation of this group would have the benefit of improving their superannuation accumulation and their health and lifestyle in retirement.

The scenario assumes a 5 per cent increase in the projected rates of full-time labour force participation for men aged 45 to 64 by 2011-12. Thereafter, full-time participation rates for these age ranges are assumed to stabilise. As a result of the increase in full-time labour force participation, part-time labour force participation for men aged between 45 and 60 years, which has been trending upwards in recent years, is assumed to stabilise rather than continue to rise. For those aged 60 to 64, part-time labour force participation is currently at quite low levels, and trends were not adjusted for the alternative scenario. Men aged 60 to 64 are much more likely to leave the workforce altogether on ceasing full-time work than to opt for part-time work. Chart B2 provides a comparison of the full-time and part-time participation rates of men aged 45 to 64 under this scenario and the central scenario.

Unemployment rates are assumed not to vary under this scenario, although they may rise in practice. If the additional hours worked by men in these age ranges resulted in the displacement of other would-be full-time workers, the unemployment rate would increase, with resulting effects on government spending on unemployment allowances.

Chart B2: Higher full-time labour force participation of male older workers, trends and projections



Source: ABS Cat. No. 6291.0.40.001 and Treasury trends and projections.

Lower mortality scenario

The central projections assume that mortality continues to decline at a rate similar to that of the past 25 years until 2003 and gradually slow to a rate similar to the decline over the last 100 years by 2028. For the lower mortality scenario, mortality is assumed to decline at a faster rate. A rate of decline similar to that of the past 25 years is applied until 2010, gradually slowing to a rate similar to the decline over the last 100 years by 2050.

Over the last three years, Australian crude death rates have declined steadily, despite the growing proportion of aged people within the population. The recent rate of decline has been faster than the average annual reduction in mortality rates over the last 25 years. As much of this improvement appears to be related to advances in medical technology and pharmaceuticals, the high standard of Australia's health system and improvements in public health education, increased life expectancy at least

equal to that experienced in the last 25 years might continue for some time into the future.

The life expectancies under this lower mortality scenario were formulated by applying age-specific improvement factors to current death rates. Life expectancies are higher in the lower mortality scenario (Table B1).

Table B1: Projected life expectancy at birth for low mortality scenario (years)

	2002	2012	2022	2032	2042
Males	77.2	79.4	81.3	82.8	83.9
Males improvement over central scenario	0	0.1	0.6	1.1	1.4
Females	82.6	84.5	86.1	87.4	88.5
Females improvement over central scenario	0	0.1	0.4	0.7	1.0

Source: Treasury projections.

Lower mortality increases the number of people in older age groups (65 and over), but this effect is slight and mainly apparent from 2032 onwards (Table B2).

Table B2: Population projections for age ranges for low mortality scenario (millions)

	2002	2012	2022	2032	2042	<i>Central scenario</i> 2042
0 to 14	3.9	3.8	3.8	3.8	3.7	3.7
15 to 64	13.2	14.6	15.1	15.3	15.4	15.4
65 to 84	2.2	2.7	3.8	4.8	5.2	5.1
85+	0.3	0.4	0.5	0.8	1.2	1.1
Total	19.6	21.5	23.2	24.7	25.6	25.3

Source: Treasury projections.

Appendix C: Modelling approaches used to project spending

The modelling approaches used to project spending in this report can be considered in three groups:

- coverage trends models, for spending which is strongly related to coverage or participation rates for a payment or service and the unit cost growth is linked to a price index. These models were used to project spending in Disability Support Pensions (DSP), Parenting Payment (Single), unemployment allowances and education.
- cost trends models, for spending where unit cost growth is not related to a price index, but reflects a range of influences. The models use trends in cost per person by age and gender to project spending. These models were used to project health and aged care spending, including the individual components of health.
- comprehensive policy models, for payments, which interact significantly with individual income and assets over time, such as Age and Service Pensions.

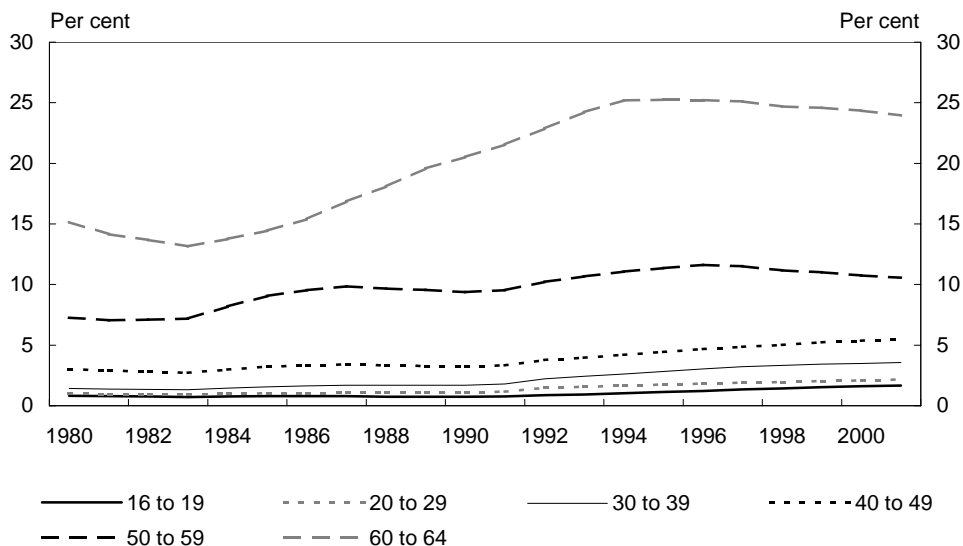
Coverage trends models

This method derives trends of coverage or participation (in a payment or service) from historical data, using this as the basis for a coverage or participation projection, always by age and sometimes by gender. The projection of coverage often involves non-linear techniques such as logistic functions. This projection of future coverage is used together with the population projections and a standard unit cost to project future levels of spending. The standard unit cost is usually independent of age or gender and is assumed to grow in line with either wages or CPI depending on current policy. Some variations in the methodology are employed, depending on such factors as data availability, current policy and relevant periods of history.

The modelling for DSP is used to illustrate the process.

DSP has grown strongly for both men and women since 1983 when there were 220,000 recipients. In June 2001 there were 624,000 DSP recipients. Age-specific prevalence rates have also grown (Charts C1 and C2).

Chart C1: Historical Disability Support Pension coverage rates, males by age

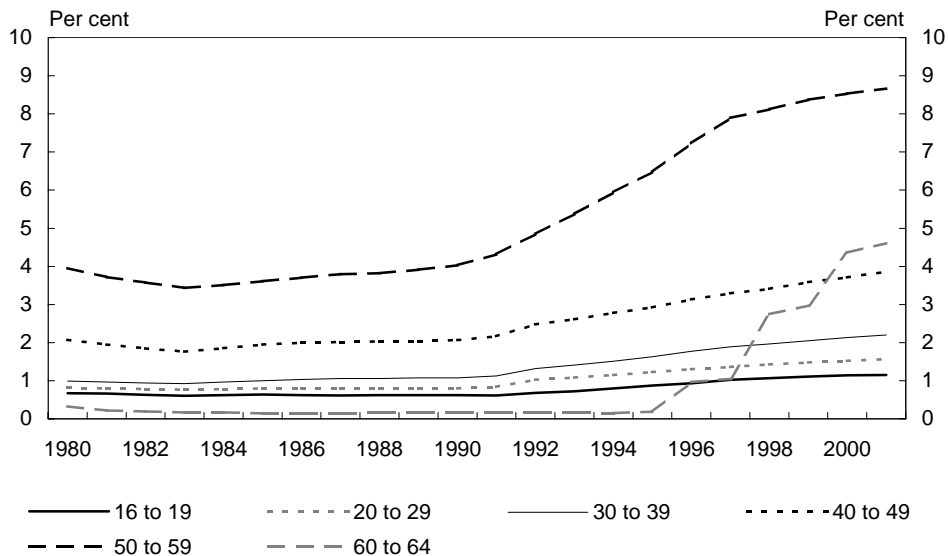


Note: For years 1992 and 1993, numbers are for age bracket 21 to 29 rather than 20 to 29.

Figures for June each year.

Source: Department of Social Security annual reports (various) and Department of Family and Community Services *Income Support Customers — a Statistical Overview* (various).

Chart C2: Historical Disability Support Pension coverage rates, females by age



Note: For years 1992 and 1993, numbers are for age bracket 21 to 29 rather than 20 to 29.

Figures for June each year.

Source: Department of Social Security annual reports (various) and Department of Family and Community Services *Income Support Customers — a Statistical Overview* (various).

Coverage rates for the early retirement age groups of 50 to 59 and 60 to 64 are far higher than for other age groups. The unusual pattern for women aged 60 to 64 mirrors the gradual increase in eligibility age for the Age Pension.

The coverage rates were projected based on historical trends for seven age groups, with growth being gradually slowed. Exceptions are the rates for 50 to 59 and 60 to 64 males, where recent trends suggest that a very slight, gradual decline in coverage rates is appropriate. The number of recipients projected for a given year was obtained by multiplying these rates by the population in each age group. This estimate was then substantially modified in accordance with the expected movement of DSP clients to other payments resulting from the Budget measures. An average payment rate was calculated for DSP and indexed by wages (MTAWE) for future years. Projected nominal spending was derived by multiplying the projected recipient numbers and the indexed rate per recipient, and benchmarked to the forward estimates. Finally, the GDP projection was used to calculate the projections as a proportion of GDP.

Table C1: Assumptions underlying models of payments to individuals

	Coverage rates	Future trends	Unit cost growth
Disability Support Pension	Derived for seven age groups for men and women	Tapering of growth in coverage based on logistic curves Numbers adjusted for Budget measures	Average Weekly Earnings (AWE)
Parenting Payment (Single)	Derived for six age groups for men and women	Tapering of growth in coverage based on logistic curves	AWE
Unemployment allowances	Derived for eight age groups	Initial coverage based on recent average, but adjusted for budget measures	Consumer Price Index (CPI)
Family payments	Average per child aged up to 15	Coverage unchanged from recent average	CPI and AWE for parts
Education and training	Detailed age structure by sector	Tapering of growth in coverage based on logistic curves	Mixture of AWE and CPI cost indices

The methodology for education is similar to the approach above. The main difference is that the participation rates were projected separately for each sector, reflecting the relevant populations and data availability. For university education, logistic functions were used to project participation rates by year of age for those aged from 17 to 64 and for the group aged 65 and over. For vocational education and training, separate participation rates were projected again using logistic functions for each year of age from 15 to 24, the group aged under 15, and three groups for those aged 25 and over. For schools, no participation rate increases were projected.

Total education spending to 2005-06 reflects forward estimates. From 2006-07, Commonwealth contributions per student in each sector were calculated by dividing total Commonwealth spending for 2005-06 by the projected total number of

participants and indexed for projected increases in inflation and wages growth. For other education spending, the Commonwealth contribution was divided by the total number of all students as the spending cannot be allocated to any one sector. This cost per student was then similarly indexed.

The projected total numbers of students in each education sector for a given year were obtained by multiplying participation rates by the projected total population in each group or year of age. The indexed Commonwealth contributions per student were multiplied by the projected student populations to obtain nominal spending for each sector and added together to obtain projected nominal total Commonwealth spending on education. Finally, the GDP projection was used to calculate the projections as a proportion of GDP.

In effect, this methodology projects future Commonwealth funding of education based on the current Commonwealth spending combined with projections based on demographic change and economy-wide cost growth, rather than modelling it as a continuation of current funding arrangements.

Cost trends models

These models use historical trends of spending per person of given age and gender as the basis for projecting future spending per person of given characteristics, combining this with the projected population. These trends in costs reflect the demand for and supply of services, the quality of services, government policies and contractual arrangements, and, importantly, technological change, as well as factors such as growth in wages of service providers.

Health and aged care spending were projected by combining historical trends of health and aged care spending with the projected demographic and economic changes in Part II. No explicit adjustment was made for compression of morbidity, as the available evidence for Australia is insufficient and inconclusive. However, to the extent that it occurs, it would have been captured implicitly as a factor constraining growth.

The primary model examined Commonwealth health spending by principal components. A secondary model examined aggregate Commonwealth health spending and the sensitivity of health spending to variation of the growth rate. Aged care spending was projected for the three components of nursing homes, hostels and Home and Community Care (HACC).

Health — primary model

The primary model for health spending allows for spending by age to grow at different rates in different programmes. The areas modelled, the approach taken, and the relevant growth rates are in Tables C2 and C3.

Table C2: Health primary model: components and modelling approach

Component	Modelling approach	Non-demographic growth rates(a)
Pharmaceutical Benefit Scheme direct subsidies	Per person spending by sex and age group Same growth rate for all age groups	5.64 after allowing for 2002-03 Budget measures
Medical Benefits Scheme direct subsidies	Per person spending by sex and age group Separate growth rates for each age group	Age specific rates vary from -0.12 to 3.78
Hospital and health services	Per person spending by sex and age group Same growth rates for each age group	1.64
Other health spending(b)	Private health insurance was assumed to grow with the MBS, hospitals and nursing homes. The remainder of health spending was assumed to be a constant proportion of GDP	

(a) Per capita real age-adjusted.

(b) Other health expenditures includes the Private Health Insurance Rebate, other PBS and MBS spending, community and public health, administration, aids and appliances and research.

Table C3: Historical health spending growth rates in components

	Real growth rates per person (per cent)	Period
Hospital	1.64	1989-90 to 2000-01
PBS subsidy	5.64	1983-84 to 2005-06
MBS subsidy		1984-85 to 2000-01
0 to 4 years	0.52	
5 to 9 years	-0.12	
10 to 14 years	0.33	
15 to 19 years	0.94	
20 to 24 years	-0.11	
25 to 34 years	0.31	
35 to 44 years	1.45	
45 to 54 years	1.74	
55 to 64 years	2.43	
65 to 74 years	3.78	
75 and over	2.30	
Aged care	1.71	

Source: Commonwealth of Australia Budget Paper No.1 (various) and Department of Health and Ageing data.

The Pharmaceutical Benefits Scheme (PBS) is used to illustrate the method used in the primary model.

Firstly, the distribution of the cost to the Commonwealth of the PBS per person of a given age range and gender was determined. The annual cost varies from about

\$40 per person to about \$700 per person (aged over 80), with spending on women greater than that for men.

Secondly, historical information on the nominal total cost of the PBS each year was compiled and 1983-84 chosen as the start year for the analysis. This start date includes 20 years of readily available data with some policy changes.

The factors influencing the raw growth rate were extracted to determine the real per person age-adjusted growth rate for the PBS. This growth rate separates the impact of population growth and population ageing (captured in the demographic projections) from the non-demographic growth.

Given the 2002-03 Budget measures, growth was calculated to the end of the forward estimates period (2005-06) as follows:

- the nominal compound growth from 1983-84 to 2005-06 is 11.57 per cent;
- the real compound growth is 7.56 per cent;
- the real compound growth per person is 6.25 per cent; and
- the real compound growth per person, corrected for the changing age composition over the analysis period is 5.64 per cent.

The real per person age-adjusted growth rate of 5.64 per cent was used in the projection. This growth figure is assumed to apply for each age group and for all years of the projection.

Commonwealth PBS spending projections were then generated using the age by sex distribution of PBS spending, the real per person age-adjusted growth rate and population and CPI assumptions.

For the medical benefits component of health the greater availability of data allows a differential growth rate (per person in a given age range) to be calculated for different age ranges, with the calculated rates of growth being higher for older groups.

Health — secondary model

An aggregate model for health was used to project total health spending using a single growth rate and to test the sensitivity of Commonwealth health spending to variations in the growth rate.

The main data for this model are the real growth rate in health spending (per person age-adjusted) and a distribution of Commonwealth health spending per person of a given age.

The choice of starting date and inclusion or exclusion of major policy changes results in different growth rates, and the underlying growth rates and projected health

spending is very sensitive to those assumptions. Sensitivity analysis was conducted to demonstrate the impact of a non-demographic growth rate of 3.0 per cent and a lower growth rate of 2.5 per cent. The component model gives results between these two projections.

Aged care projections

The aged care sector comprises nursing homes, hostels and community care (HACC and other programmes funded by the Department of Health and Ageing and the Department of Veterans' Affairs). The age structure for the Home and Community Care programme was used for all Commonwealth community care. There is no stable trend in these areas because of major policy changes which have shifted the expenditure balance towards community care. Therefore, because wages are a significant component of spending in these areas, the real per person age adjusted growth rate going forward was assumed to be strongly influenced by real wages growth, and taken to be 1.75 per cent beyond 2007-08, reflecting the base productivity growth assumption. The same per capita growth rate was applied across all areas of aged care spending.

Comprehensive policy models

RIMGROUP is a comprehensive cohort projection model of the Australian population, which starts with population and labour force models, tracks the accumulation of superannuation, estimates non superannuation savings, and calculates pension payments and the generation of other retirement incomes (after all taxes). The model is consistent with current policy and includes known future policy changes such as increasing the age pension entitlement age for women, increasing the superannuation preservation age, and continuing evolution of the superannuation system.

Numbers of pension recipients and the level of payments are calculated by the model, based on population, labour force participation and asset and income projections. Thresholds and withdrawal levels associated with income and asset tests are modelled in detail.

The ability of RIMGROUP to estimate improvements in retirement income and assets makes it superior to trend projections of Age Pensions or using a coverage rate approach. It projects in detail the higher retirement incomes of Australian retirees as the superannuation system matures and reflects this in a restraining influence on Commonwealth spending on age pensions over time.

The usual approach to testing such models is to see how they track history and to check their predictive ability. Testing on RIMGROUP has shown good results in respect of both tracking history and the ability to predict likely outcomes from policy changes.¹ The current projections have been benchmarked to the forward estimates.

¹ Rothman 1998.

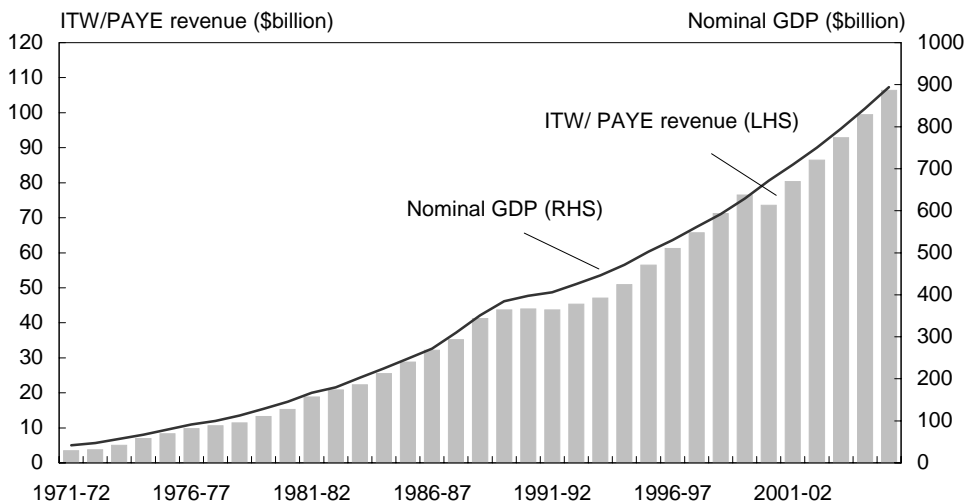
Appendix D: Key drivers of taxation revenue growth

GDP is composed of compensation of employees, the profits of incorporated (companies) and unincorporated sectors (small business, primary producers and investors), and indirect taxes less subsidies. Historically, each of these components has generally grown at around the same rate as nominal GDP.

Compensation of employees

The compensation of employees is taxed directly by the Commonwealth through the Income Tax Withholding (ITW) system. Compensation of employees and ITW withheld from employees have historically grown at around the same rate as nominal GDP (Chart D1).

Chart D1: Taxes levied on the compensation of employees



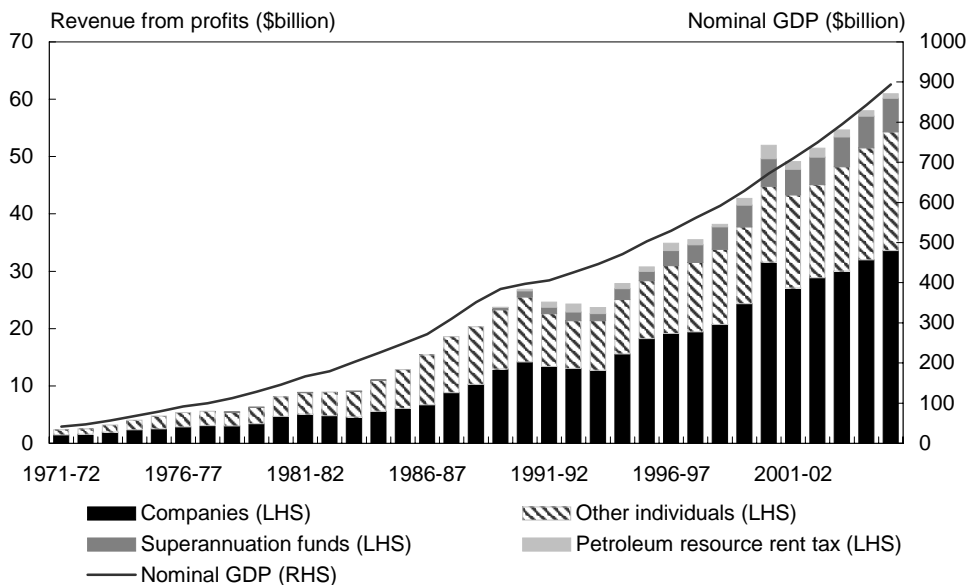
Source: ABS Cat. No. 5206.0 and Commonwealth of Australia Budget Paper No.1 (various).

Profits

The two main sources of taxation revenue from profits are company tax and personal tax from individuals other than that collected through the ITW system. Company income tax is levied on the incorporated sector, while personal income tax is levied on the unincorporated sector — the unincorporated sector comprises small business, primary producers and investors. There are several other smaller taxes levied on profits, including Petroleum Resource Rent Tax and tax on superannuation funds.

Growth in profits and the taxes levied on them have generally grown in line with nominal GDP over the last 30 years (Chart D2).

Chart D2: Taxes levied on profits

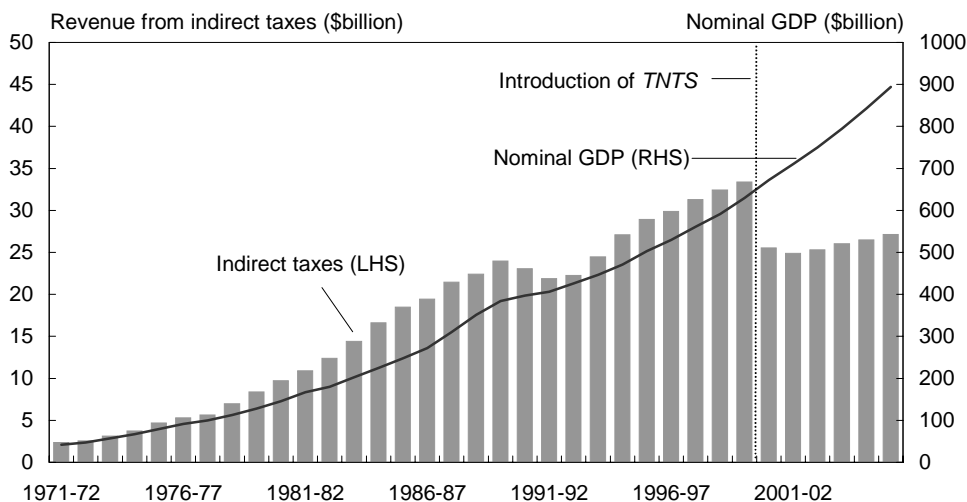


Source: ABS Cat. No. 5206.0 and Commonwealth of Australia Budget Paper No.1 (various).

Indirect taxes

Indirect taxes are taxes which are not levied on income, and include excise duty, customs duty, wine equalisation tax and luxury car tax. The broad drivers of indirect tax are production, consumption and imports. It is assumed that indirect taxes will grow at the same rate as nominal GDP (Chart D3).

Chart D3: Indirect taxes



Source: ABS Cat. No. 5206.0 and Commonwealth of Australia Budget Paper No.1 (various).

The introduction of *The New Tax System* resulted in a reduction in the level of Commonwealth indirect taxes because of the abolition of wholesale sales tax and the transfer of GST revenue to the States.

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