

## Chapter 2: Growing the economy — productivity, participation and population

### Overview

The best way to respond to the economic and fiscal pressures of an ageing population is to support strong, sustainable economic growth. Economic growth will be supported by sound policies that support productivity, participation and population — the '3Ps'.

Productivity is the key to higher economic growth in the face of an ageing population. Policies that support higher productivity, including investments in nation building infrastructure and skills and education, will raise economic growth, improve living standards and enhance Australia's capacity to fund the fiscal pressures of an ageing population.

While aggregate participation rates will fall as a result of an ageing population, steps to improve participation would minimise the impacts.

Australia's population will continue to grow, though at slightly slower rates than experienced over the past 40 years. A growing population assists in managing the pressures of an ageing population and provides the skills needed for continued economic growth. However, population growth will also put additional pressure on infrastructure, services and the environment. Projected population growth is manageable, if governments plan for future needs.

### 2.1 Promoting higher productivity growth

Productivity growth will be the main driver of economic growth and living standards in the future.

Over the past four decades labour productivity growth accounted for most of the increase in real GDP per capita. With population ageing expected to reduce the participation rate, future growth in living standards will depend on the productivity gains that can be achieved.

The IGR 2010 projections are based on a technical assumption that the 30-year historical average for labour productivity growth of 1.6 per cent per annum will continue over the next 40 years.

Australia's recent productivity performance has slowed, averaging only 1.4 per cent over the past decade, compared with 2.1 per cent in the 1990s. This recent productivity performance has pulled down the 30-year average from the previous IGR.

If Australia's productivity growth could be increased above the long-run average, the economy would be bigger, living standards would be higher and fiscal pressure from the ageing of the population would be reduced. If, for example, annual productivity growth was to average 2 per cent over the next 40 years, then:

- annual real GDP growth would average over 3 per cent over the next 40 years and the economy would be \$570 billion bigger in 2049–50; and
- real GDP per capita in 2049–50 would be 15 per cent (or around \$16,000) higher.

There are a range of factors that influence productivity outcomes, including the flexibility and efficiency of the allocation of labour and capital, the level of capital intensity and technological change.

Governments can play an important role in promoting productivity growth, through investing in infrastructure and skills, promoting macroeconomic stability, and providing appropriate microeconomic frameworks.

Infrastructure investment increases the country's capital stock and the efficiency with which private sector resources can be used. Sound investment in education and training results in a workforce with a better mix of skills leading to potentially higher productivity, higher participation, lower unemployment and increased incomes and living standards. Reforms that improve the quality and efficiency of infrastructure markets and educational outcomes will also drive higher productivity over the medium term.

A stable macroeconomic environment increases the level of certainty that people and businesses have in making decisions. By ensuring macroeconomic stability, public policy frameworks can promote economic growth and improve efficiency in the allocation of resources across the economy. This is positive for productivity.

Microeconomic frameworks can also improve productivity. Microeconomic reforms can promote open and competitive markets, enhance incentives to develop and adopt new products and processes, and provide businesses with greater flexibility to adjust to changing circumstances.

The microeconomic reforms of the 1980s and 1990s contributed to the surge in Australia's productivity growth in the 1990s. While these reforms provide ongoing benefits to the Australian economy, further improvement is needed to achieve a sustained increase in Australia's productivity growth rate over the next 40 years.

### 2.1.1 Infrastructure

Investment in Australia's economic infrastructure and reform of infrastructure markets is critical to improving national productivity. Well-performing infrastructure will help drive a more diverse, competitive and sustainable economy that generates substantial and lasting economic, social and environmental benefits.

Infrastructure investment will be the cornerstone of the recovery of the Australian economy going forward. As the global economy recovers from the global financial crisis and China and other emerging economies in Asia continue to expand and grow, it is vital that Australia is positioned to take advantage of the many opportunities and benefits that will emerge.

Infrastructure investment directly increases the volume and quality of Australia's physical capital stock and facilitates enhanced private sector activity. By increasing the amount and quality of capital workers have available, infrastructure investment plays a key role in supporting labour productivity.

Infrastructure can facilitate trade and the division of labour, improve market competition, promote a more efficient allocation of activity across regions and countries, encourage the diffusion of technology and the adoption of new organisational practices, and provide access to new resources. Public infrastructure investment can contribute to more productive public sector service delivery.

The IMF estimates that, on average across 22 OECD countries, increasing the public infrastructure stock by 1 per cent leads to an increase in output of around 0.2 per cent.<sup>1</sup> The results for Australia are around the OECD average.

The Government established Infrastructure Australia to help drive a strategic, national approach to infrastructure planning and development. Infrastructure Australia's national infrastructure audit and work to identify strategic infrastructure priorities informed the Government's selection of nation building infrastructure projects in the 2009–10 Budget. The Government's investments in economic infrastructure will raise the productive capacity of the Australian economy over the long-run.

Recent OECD research suggests that investment in physical infrastructure can boost long-term economic output by more than other types of investment.<sup>2</sup> The OECD research highlights that infrastructure investment needs to be effectively targeted to maximise overall economic benefits. In addition to making sound decisions on projects, this also depends on having appropriate regulations and price signals in infrastructure markets.

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1 C Kamps 2006, 'New estimates of government net capital stocks for 22 OECD countries 1960–2001', in *IMF Staff Papers*, 53(1), Washington DC.

2 OECD 2009a, *Economic Policy Reforms: Going for Growth*, Organisation for Economic Co-operation and Development, Paris.

Australia has made substantial progress in reforming its infrastructure markets, most notably through the adoption of National Competition Policy in 1995. These reforms have improved efficiency across a range of areas of public infrastructure and the resulting increases in the productivity of Australia's stock of infrastructure have helped to raise Australia's potential output.

Continuing Government action to drive competitive and efficient infrastructure markets and lower regulatory costs for infrastructure development complements the Government's direct infrastructure investment. This action will ensure that the potential benefits created by such infrastructure investments are fully realised. It includes the Government's National Broadband Network and reforms to telecommunications regulation, COAG reforms to energy, transport and water markets and reforms to streamline and harmonise business regulation to promote a seamless national economy.

The Productivity Commission<sup>3</sup> has estimated that improving productivity and efficiency to achieve best practice in energy, transport, infrastructure and other activities could, after a period of adjustment, increase GDP by nearly 2 per cent.

### **2.1.2 Skills and human capital**

Education and training can contribute to improvements in both productivity and participation in the workforce. The basic skills acquired in early childhood and school years, particularly literacy and numeracy, are the necessary foundation for developing higher order skills that contribute to a more productive workforce.

Microeconomic evidence suggests that, on average, higher levels of education increase productivity and earnings for individuals. For example, in Australia the latest available ABS data indicate that average weekly full time earnings for people with Certificate III level qualifications and above are at least 10 per cent above, and up to double, those without these qualifications.<sup>4</sup> However, evidence based on macroeconomic data is more difficult to interpret.

Flexible and responsive education and training systems allow educational institutions to alter the quantity and mix of services provided as individual preferences and needs change through time. Sound regulatory and policy structures can improve the matching of existing skilled labour to demand, provide some safeguards against skill shortages arising and assist in ameliorating any that do arise.

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3 Productivity Commission 2006, *Potential Benefits of the National Reform Agenda*, Report to the Council of Australian Governments, Canberra.

4 Australian Bureau of Statistics 2005, *Education and Training Experience, Australia*, cat. no. 6278.0, ABS, Canberra.

The Government's measures to enhance teacher quality, its early childhood quality education agenda and investments to achieve ambitious targets for higher educational attainment rates will contribute to ongoing productivity and participation growth.

The Productivity Commission has estimated that improvements to achieve best practice in workforce productivity could raise aggregate labour productivity up to 1.2 per cent by 2030.<sup>5</sup> Improvements could include reforms in education and training including areas such as early learning; higher educational attainment through better youth transitions and increases in adult learning; and improvements in literacy and numeracy.

### 2.1.3 Innovation

Innovation is a key element to productivity growth. A major input into innovation is research and development (R&D), which increases the stock of knowledge in the economy.

Where there is high-risk, experimental research, the high upfront cost generally outweighs the often uncertain returns. The benefits of research also tend to spillover to parties other than the original investor in that research. As a result, it may be beneficial for governments to correct underinvestment by the market through policy intervention.

A competitive and stable economy is important for encouraging innovation. Competition improves the incentives to innovate and encourages the flow of information between firms and across economies. The Productivity Commission<sup>6</sup> has noted that market competition is the main driver of innovation and its diffusion throughout the economy.

Macroeconomic stability is also important for innovation because it provides a more certain operating environment for firms. Several OECD studies have demonstrated that stable macroeconomic policies have a critical role to play in enabling innovations that lead to higher economic growth and productivity.<sup>7</sup>

The Government is supporting innovation in critical areas, including innovations by business, collaboration between private and public sector researchers and investing in the research capacities of our universities and public research agencies.

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5 Productivity Commission 2006, *Potential benefits of the National Reform Agenda*, Report to the Council of Australian Governments, Canberra.

6 Productivity Commission 2008, *Annual Report 2007–08*, Annual Report Series, Productivity Commission, Canberra.

7 OECD 2001, *The New Economy: Beyond the Hype*. Final Report of the OECD Growth Project, OECD, Paris;  
S Box, 2009, *OECD Work on Innovation — A Stocktaking of Existing Work*, OECD Science, Technology and Industry Working Papers, 2009(2), OECD, Paris.

## 2.1.4 Climate change

Unmitigated climate change would have a negative impact on productivity growth. As an indication of the size of this impact, the Garnaut Climate Change Review conservatively estimated that unmitigated climate change would leave Australian GDP in 2100 approximately 8 per cent lower than the level it would be in the absence of climate change, with even greater impacts on consumption and real wages. This is equivalent to losing around \$17,000 per capita (in current prices) from the Australian economy in 2100. Moreover, unmitigated climate change involves significant risks and non-market costs not captured by such estimates.<sup>8</sup>

Much of the productivity impact of climate change would be through reduced agricultural productivity. An analysis by ABARE found that, in the absence of mitigation, planned adaptation and carbon fertilisation, climate change could erode agricultural productivity by as much as 17 per cent by 2050.<sup>9</sup>

To best manage these risks to Australia's future productivity growth, Australia needs to contribute to an effective global response to climate change.

## 2.2 Participation

Over the next 40 years, the labour force participation rate for people aged 15 and over is projected to fall, reflecting the projected fall in the proportion of people aged 15 and over in the labour force and falling hours worked by those in employment.

Steps to improve Australia's participation rate will minimise the impact of an ageing population.

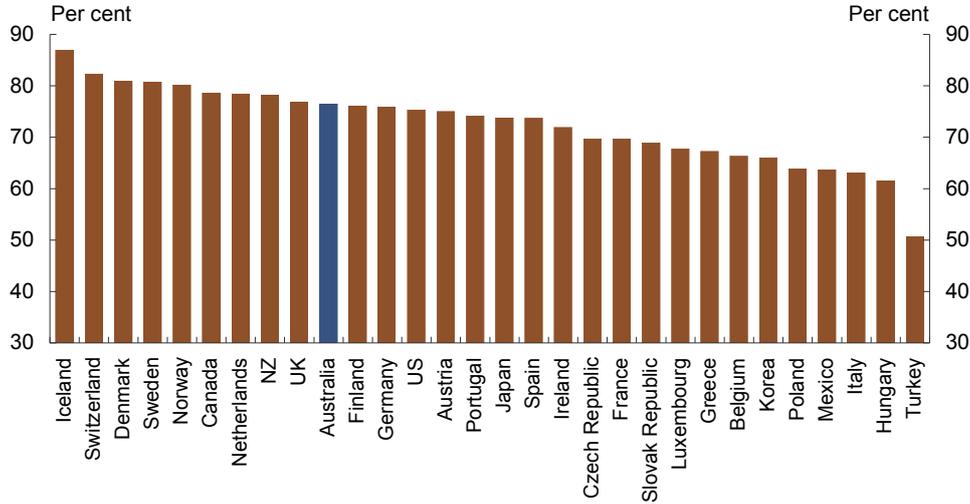
Australia's participation rate of 76.5 per cent for people of traditional working age (aged from 15 to 64 years) in 2008 is the tenth highest in the OECD. This is higher than the United States, but lower than the United Kingdom, New Zealand and Canada (Chart 2.1).

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8 R Garnaut, 2008, *The Garnaut Climate Change Review*, Cambridge University Press, Port Melbourne.

9 D Gunasekera, C Tulloh, M Ford and E Heyhoe, 2008 *Climate Change: Opportunities and Challenges in Australian Agriculture*, Proceedings of Faculty of Agriculture, Food and Natural Resources Annual Symposium.

**Chart 2.1: OECD participation rates 2008, people aged 15–64**



Source: OECD.

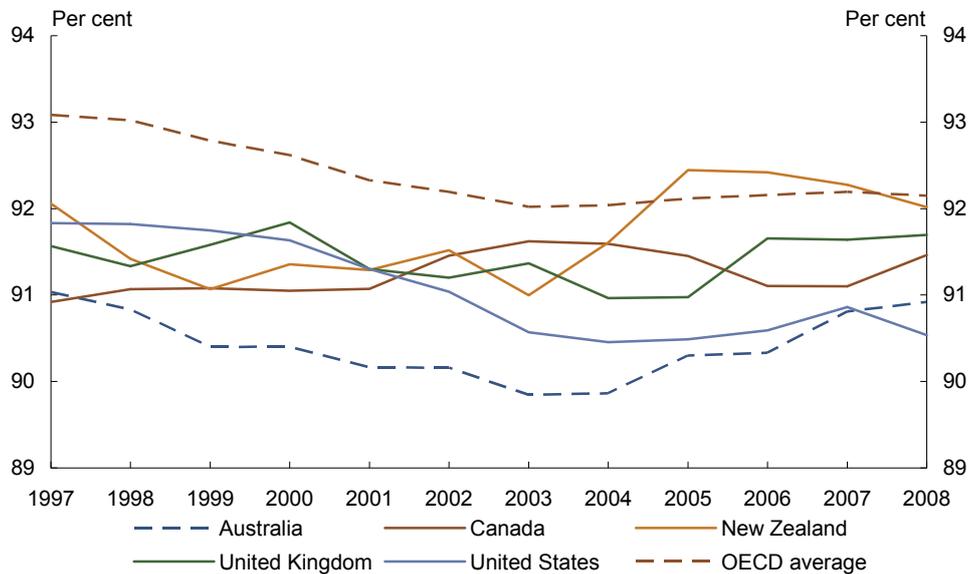
Across the OECD, prime age participation rates for men have either held constant or declined slightly between 1997 and 2008 (Chart 2.2). Australia’s prime age participation rates for men have remained relatively constant at around 90 per cent, although this remains lower than the OECD average of 92.2 per cent in 2008.

The prime age participation rates for women have risen strongly in most OECD countries. The Australian rate for women is 75 per cent, around 4 percentage points higher than the OECD average of 71 per cent in 2008 (Chart 2.3).

The Government has introduced a number of initiatives to support the development of human capital and boost labour force participation. These have included increasing incentives to work through personal income tax cuts, increases in the Child Care Rebate and the introduction of Paid Parental Leave.

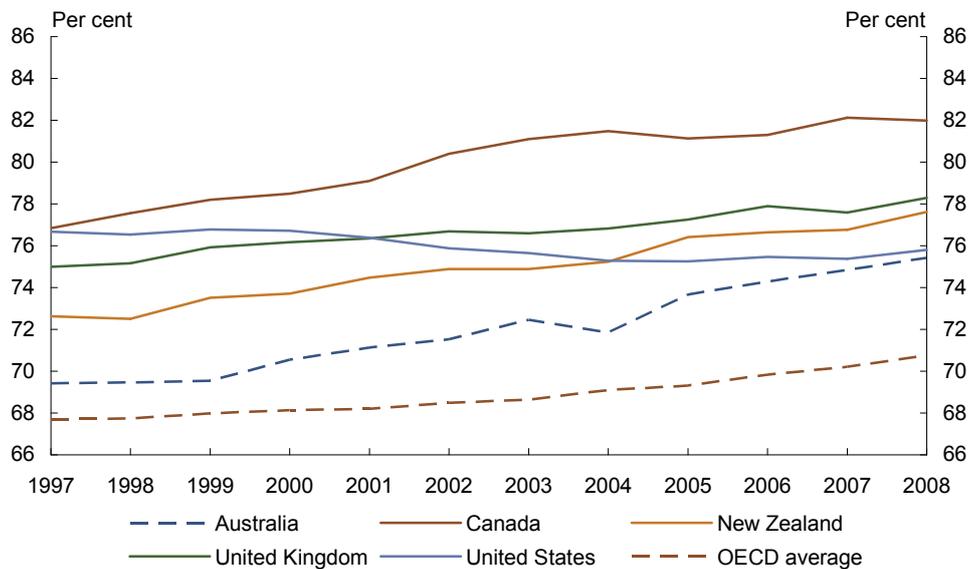
In addition, Government reforms in the areas of education, employment services and health are designed to lift participation in the workforce.

**Chart 2.2: Participation rates for men aged 25–54**



Source: OECD.

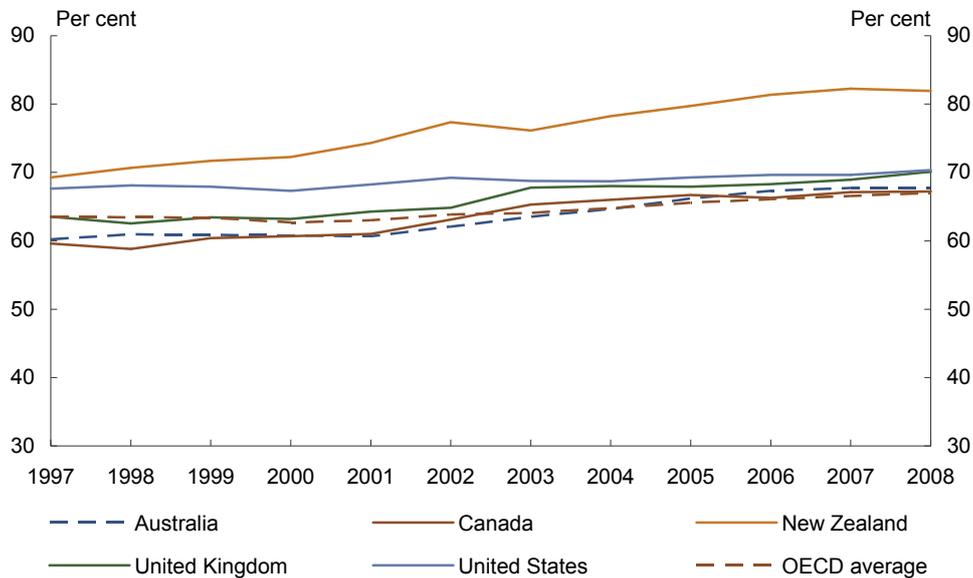
**Chart 2.3: Participation rates for women aged 25–54**



Source: OECD.

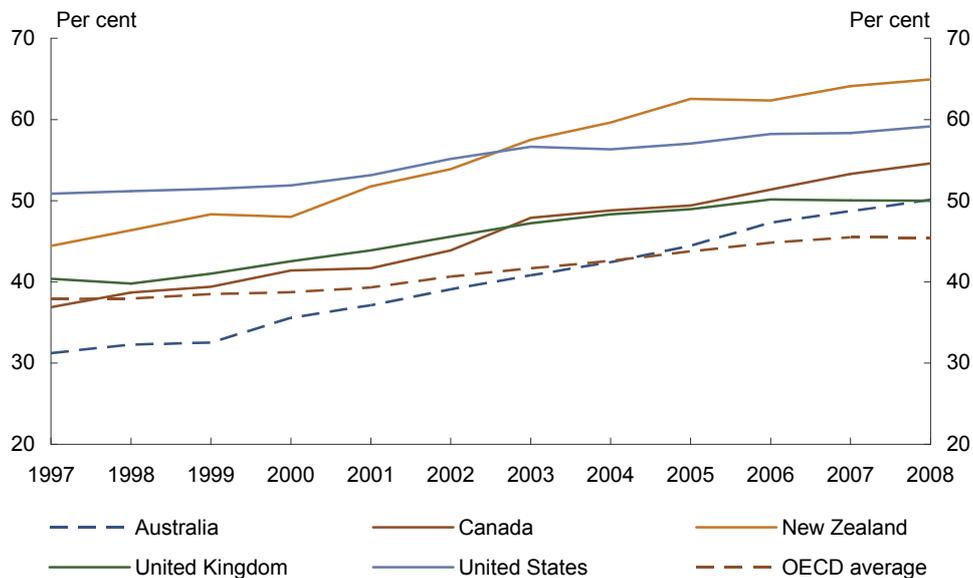
Mature age participation rates have been rising on average across the OECD (Chart 2.4 and 2.5). Participation rates for women across the OECD in the 55–64 age group have risen more strongly than those for men. Australia’s rise has been particularly strong — 19 percentage points since 1997. This brings the Australian rate for women in this age group to just higher than the OECD average.

**Chart 2.4: Participation rates for men aged 55–64**



Source: OECD.

**Chart 2.5: Participation rates for women aged 55–64**



Source: OECD.

Australia's mature age participation rate of 58.9 per cent in 2008 is the thirteenth highest in the OECD. This is higher than the OECD average (56.3 per cent), but lower than the United States, the United Kingdom, New Zealand and Canada. International comparisons show there is scope for Australia to increase participation rates for the mature age group. If mature age participation rates were to increase to around

67 per cent by 2049–50 (compared to the base case of 62 per cent by 2049–50), real GDP per capita would be 2.4 per cent higher in 2049–50. But to do so would not be straightforward.

Continued improvement in mature age participation rates will require ongoing policy effort to identify and remove the barriers for those who wish to remain in the workplace. These barriers can include cultural (including employer) attitudes, workplace flexibility, educational attainment, features of the tax and transfer system, and the availability of retraining and support services (such as health and rehabilitation services, career advice and employment services). One example of recent policy reform in this area is the introduction of a new Work Bonus, which treats earned income more generously under the Age and Service Pension income tests.

Future policy will be improved through the systematic development and trialling of new policies in the areas that are known to influence participation decisions. The establishment of a Consultative Forum on Mature Age Participation, as part of the Productive Ageing Package, will assist in identifying opportunities for the Government to further support employment for mature aged workers. The package contains retraining, re-skilling and career advice initiatives that will pilot new approaches to supporting mature age participation.

Of course, mature age Australians can choose to make a number of important contributions to the community outside of paid employment — including through activities such as volunteering or as carers. Retirement decisions reflect a complex mix of factors and the aim of policy in this area should be to enhance opportunities for mature age people.

## 2.3 Population

Over the next 40 years, the rate of population growth is projected to slow slightly to 1.2 per cent annually, compared to the 1.4 per cent experienced over the previous 40 years. At the same time, the population will continue to age.

Population growth can support economic growth, provided it is sustainable growth.

Lower population growth of 0.8 per cent annually,<sup>10</sup> relative to the 1.2 per cent annual population growth that is projected, would (Table 2.1):

- reduce the annual average rate of growth in real GDP to 2.3 per cent (compared to 2.7 per cent) — as a result, the level of real GDP would be 17 per cent lower in 2049–50;

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<sup>10</sup> Scenario based on net overseas migration of 100,000 per year (which is lower than the 30-year historical average to 2008 of 109,000) and total fertility of 1.7 births per woman (reflecting the historical minimum reached in 2001).

- reduce the number of working age people to support each person aged 65 years and over to 2.3 people (compared with 5 people today and 2.7 people under the central case population projections);
- reduce total workforce participation from 60.6 per cent to 58.2 per cent; and
- increase the median age in 2050 from 42 years to 45 years.

The key factor influencing these results is the lower net overseas migration assumption. Because migrants tend to be younger than the resident population, lower net overseas migration implies lower growth in the size of the labour force.

**Table 2.1: Australian population projections — low and base case**

Projected population as at June	2010	2050	
		Low	Base
Age range			
0-14	4.2	4.6	6.2
15-64	15.0	17.8	21.6
65-84	2.6	6.1	6.3
85 and over	0.4	1.8	1.8
<b>Total persons</b>	<b>22.2</b>	<b>30.2</b>	<b>35.9</b>
Percentage of total population			
0-14	19.1	15.1	17.2
15-64	67.4	58.9	60.2
65-84	11.7	20.0	17.6
85 and over	1.8	6.0	5.1

Source: Treasury projections.

### 2.3.1 International experience

Over the next 40 years, a number of developed countries are expected to experience long-run population decline associated with low fertility levels. Europe's total population is projected to fall by over 40 million by 2050, driven by substantial falls in the populations of Russia and Germany.<sup>11</sup>

Higher spending on public health care, pensions and other social services caused by population ageing is resulting in rising fiscal pressures for governments across the OECD.

Two of the fastest-ageing countries with the oldest populations in the world are Japan and Italy (Box 2.1). Concerns about fiscal sustainability are particularly acute for these two countries.<sup>12</sup>

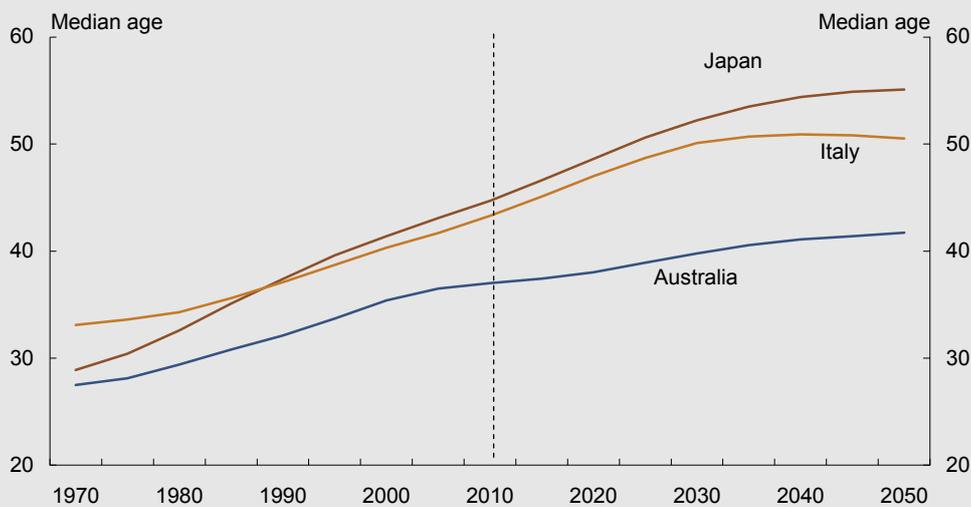
11 United Nations, *World Population Prospects: The 2008 Revision Population Database*, January 2010 update, <http://esa.un.org/unpp>.

12 OECD 2009b, *Pensions at a Glance 2009: Retirement-Income Systems in OECD Countries*, Organisation for Economic Co-operation and Development, Paris.

### Box 2.1: International case studies: Japan and Italy

The median age in Japan is expected to increase over the next 40 years to reach 55 years, more than 10 years older than the median age today and around double the median age 40 years ago (Chart 2.6). Italy is projected to age at a similar rate over the next two decades before stabilising at a median age of around 50 from 2030. This compares with Australia's projected median age of around 42 years in 2050.

**Chart 2.6: Population ageing in Japan, Italy and Australia**



Source: Treasury projections and United Nations World Population Prospects: *The 2008 Revision Population Database*, January 2010 update, medium variant projections.

In the absence of any major changes in birth rates or immigration, Japan's population is projected to fall by one-fifth or 25 million over the next 40 years. This follows steady falls in its population growth rate in recent decades culminating in a transition to negative growth rates from 2007. This projection reflects low fertility rates that are insufficiently offset by net overseas migration. Japan's already high old-age dependency ratio is projected to double, resulting in only 1.4 people of working age for every person aged 65 years or older in 2050.

Falls in Italy's population growth in recent decades mean that its population is projected to begin to decline from 60.6 million in 2016 to 57.1 million in 2050. While Italy's fertility rate is marginally higher than Japan's, the difference in their population trajectories also reflects Italy's considerably stronger net overseas migration. It is projected that by 2050 there will be 1.6 people of working age for every person aged 65 or older for Italy (compared to 2.7 for Australia and 1.4 for Japan).

A key lesson from the international experience is that countries with low population growth or declining populations such as Japan and Italy face lower potential rates of economic growth than countries with relatively healthier population growth.

### 2.3.2 Infrastructure and the growth of cities

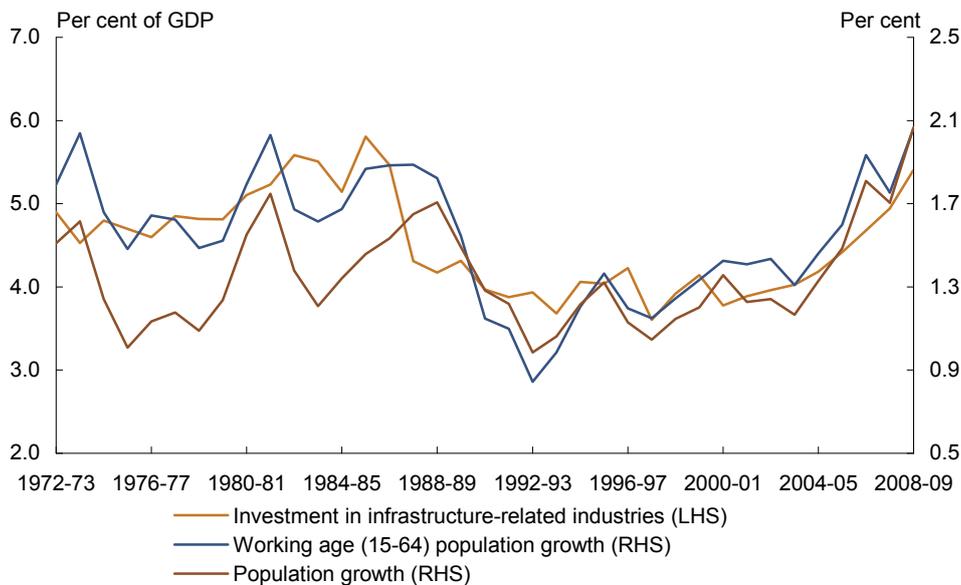
In 2008, for the first time in history, the majority of the world's population lived in cities. This trend is expected to continue, with the United Nations predicting that over 70 per cent of the world's population will live in cities by 2050.<sup>13</sup>

#### Australia's future infrastructure needs

Demand for infrastructure is highly contingent upon the technology available, the demographics of population growth, the location of population growth and the manner in which households choose to live and commute.

Over recent decades investment in infrastructure-related industries has been closely correlated with population growth (Chart 2.7).

**Chart 2.7: Infrastructure and population growth**



Note: Excludes inventory investment. Infrastructure-related industries are electricity, gas, water and waste services, transport, postal and warehousing and information media and telecommunications.  
Source: ABS cat. no. 3201.0 and ABS cat. no. 5204.0.

Cities require less fixed infrastructure per capita relative to rural areas because of the economies of scale that accompany infrastructure networks in cities. Still, increasing population density can lead to significant congestion costs that offset the benefits of these economies of scale. These effects are often most acutely felt in road transport infrastructure, but can also occur in electricity and communications infrastructure.

13 UN Population Division, 2007.

## Preparing for the future

There is a need to increase the future stock of infrastructure through investment. At the same time, reforms which ensure that existing infrastructure is efficiently and effectively utilised will further increase productivity and better enable us to meet future demands.

Improvements in governance that result in better planning, coordination and development of infrastructure are necessary to ensure that different types of infrastructure integrate effectively.

- Institutional reform in the planning and integration of networks would ensure that the infrastructure capital stock is well supplied, sufficient and functioning. Strategic planning to improve the selection of infrastructure projects and appropriate procurement methodology, such as public-private partnerships, are also needed to attract infrastructure investment.
- To encourage private investment in infrastructure, a certain and efficient regulatory environment is required, including minimising unnecessary delays in planning and construction.

### 2.3.3 Service delivery

Population ageing and growth will place pressure on government service delivery. These pressures will be ameliorated to some degree as urban density increases.

Population ageing will drive up demand for services related to seniors, carers and the disabled, which tend to be more complex and require more face-to-face interactions. In addition, the baby boomer generation will enter retirement with different expectations and aspirations, and is likely to demand higher quality and a greater range of services than previous generations.

These emerging trends will present challenges to the current service delivery system, which remains reliant on manual processes and face-to-face transactions. Client satisfaction surveys indicate that Australians want integrated, streamlined and flexible service delivery.

Significant improvements to client experiences will require transformational reform, necessitating a movement away from discrete programs built around government agencies to citizen-focused service delivery. A modern service delivery model will need to use resources more efficiently.

Reforms to achieve this have begun. In December 2009, the Government announced reforms to simplify people's dealings with government and to give them more control, while also taking advantage of synergies available across service delivery agencies.

This will, amongst other things, involve streamlining and automating processes for the majority of Australians with less complex needs, thereby freeing up resources to help those with unusual or complex needs.

Online technologies that can be accessed at home will support servicing an ageing population. The Government's National Broadband Network will be critical in opening up opportunities for service delivery to meet the challenges ahead.

Other Government reforms that simplify the service delivery process include: Medicare's electronic claiming initiative which enables Medicare rebates to be paid directly into the customer's bank account; the Australian Tax Office's pre-filing options which reduce the time spent on filling in a tax return; and Centrelink's mobile offices which enable services to be delivered to farmers and small business owners and their families in rural communities.

