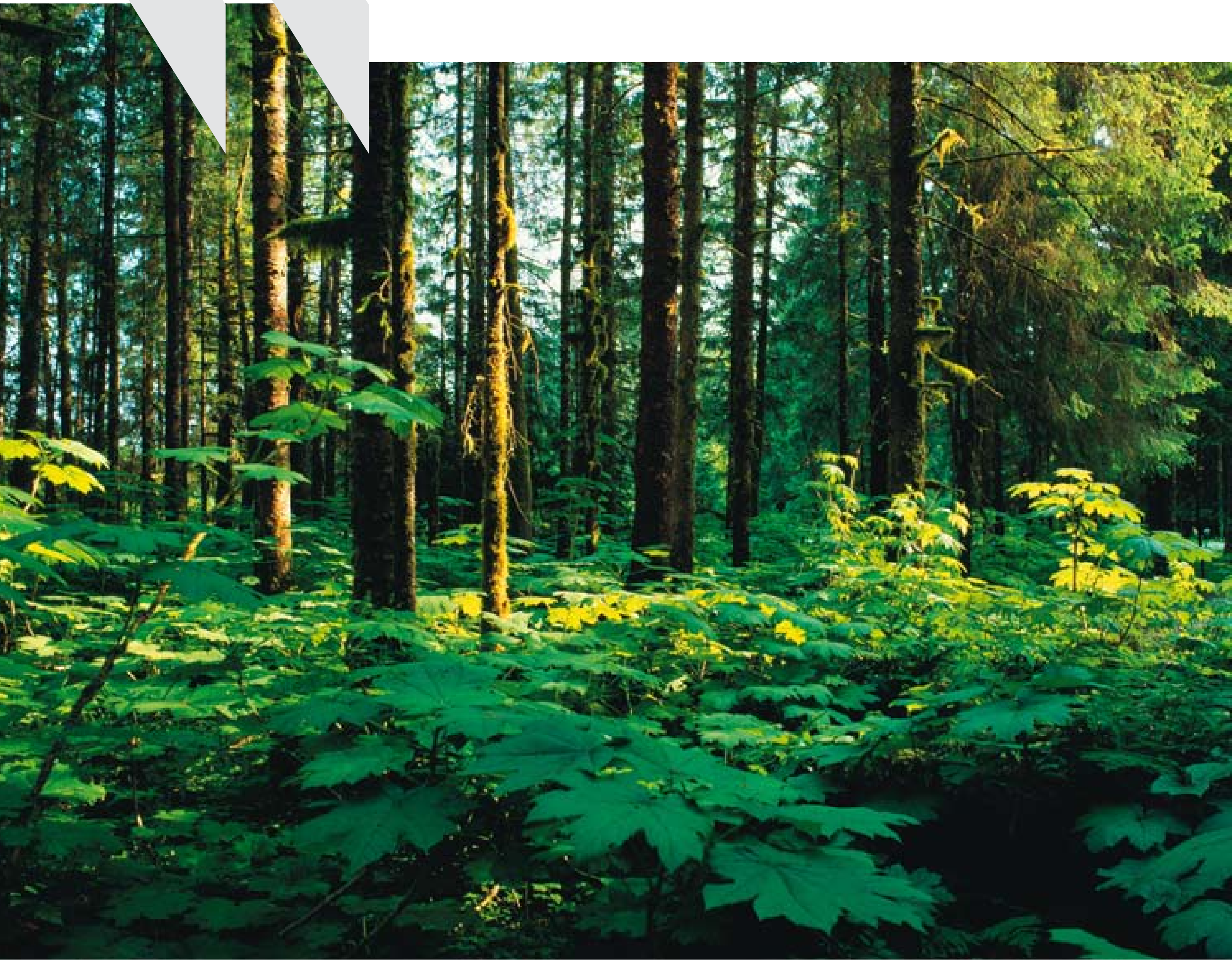
OECD Economic Surveys

AUSTRALIA



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Australia

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This Survey is published on the responsibility of the Economic and Development Review Committee of the OECD, which is charged with the examination of the economic situation of member countries.

The economic situation and policies of Australia were reviewed by the Committee on 4 September 2008. The draft report was then revised in the light of the discussions and given final approval as the agreed report of the whole Committee on 17 September 2008.

The Secretariat's draft report was prepared for the Committee by Claude Giorno and Vassiliki Koutsogeorgopoulou under the supervision of Peter Hoeller. Research assistance was provided by Desney Erb.

The previous Survey of Australia was issued in July 2006.

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BASIC STATISTICS OF AUSTRALIA (2007)

THE LAND

Area (1 000 km^2)	
Total	7 692
Agricultural (mid-2006)	4 428
Major cities (June, thousand inhabitants)	
Sydney	4 336
Melbourne	3 806
Brisbane	1 858
Perth	1 555
Adelaide	1 158

THE PEOPLE

In thousands (June)	
Population	21 015
Natural increase	140
Net migration	178
Number of inhabitants per km^2	2.7
Total labour force (million)	10.99
Civilian employment (% of total, 2006)	
Agriculture, forestry and fishing	3.5
Industry and construction	21.4
Other activities	75.1

PRODUCTION

Gross domestic product (GDP)	
In billion AUD	1 086
Per head (USD)	43 329
Gross fixed capital investment	
In % of GDP	27.6
Per head (USD)	11 959

GENERAL GOVERNMENT

In % of GDP	
Current and capital expenditure	34.6
Current revenue	35.7
Public consumption (% of GDP)	17.7

GOVERNMENT COMPOSITION

House of Representatives (seats)	148
Australian Labour Party	83
Liberal Party of Australia	53
The National Party of Australia	9
Other	3
Next general elections for House of Representatives: August 2010-April 2011	
Senate (seats)	76
Liberal Party of Australia	32
Australian Labour Party	32
The National Party of Australia and Country Liberal Party	5
Other	7

FOREIGN TRADE

Exports of goods and services (% of GDP)	20.0
Main merchandise exports (% of total)	
Raw materials	25.0
Fuels	22.7
Manufactured goods	14.0
Food, beverages and tobacco	12.3
Machinery and transport equipment	8.2
Imports of goods and services (% of GDP)	21.8
Main merchandise imports (% of total)	
Machinery and transport equipment	42.1
Other manufactured products	24.3
Fuels	13.0
Food, beverages and tobacco	4.6

THE CURRENCY

Monetary unit: Australian dollar (AUD)	
Currency unit per USD, average of daily figures	
Year 2007	1.195
August 2008	1.135

Executive summary

The performance of the Australian economy has remained remarkable in most respects. However, after more than a decade and a half of rapid growth the economy has bumped into capacity constraints, while facing a renewed rise in its terms of trade. In the short term, this new shock represents a challenge for macroeconomic policy which has to stave off inflationary pressures. Monetary and fiscal policies will need to remain relatively tight to ease demand pressures and reduce inflation. Over the medium term, favourable income developments reflecting terms of trade gains and the vitality of Asian markets provide opportunities to improve performance further and catch up with the living standards of the most advanced countries. Against this background, policy should focus on the following priorities:

Controlling demand pressures. *Monetary policy will need to stay relatively tight until a significant easing in inflation is in prospect. The medium-term fiscal strategy should avoid a pro-cyclical stance. Recent improvements in the quality of public spending should be sustained.*

Raising public investment in infrastructure and education. *The programmed increase in physical and human capital is needed to overcome bottlenecks. Higher spending has to be accompanied by reforms in these priority sectors.*

Strengthening labour supply. *Efforts to increase labour market participation among women and older workers must be continued. In addition to providing better day care facilities, this should involve further cuts in marginal tax rates for secondary earners, families with children and single parents. The tighter eligibility and participation requirements that apply to those entering the disability pension scheme since July 2006 should be extended to all recipients.*

Improving the performance of the education system. *While the school system compares well in terms of PISA scores, school heads should be given greater freedom to recruit the best teachers to work in difficult areas. There is considerable room to improve the pre-school and child-care sectors. They should be better integrated and quality services at affordable prices need to be expanded, especially for the disadvantaged. Also, occupational training and higher education need to better meet the demands and requirements of students and employers.*

Continuing the reform of product markets and industrial relations. *The current reform of industrial relations has to preserve wage flexibility by not extending collective bargaining beyond the company level. It is also important to reduce product market segmentation caused by the regulatory differences between the states. These affect, for example, consumer protection, the environment and occupational health and safety provisions, as well as sectors such as energy, freight and water management. The substantial improvements that should derive from the Water for the Future reform need to be pursued to strengthen market mechanisms and water rights trading, while prices should reflect the scarcity of water. Climate change policy should be carefully designed to be cost efficient.*

The government is putting a wide-ranging reform programme in place. It is largely in line with these policy priorities. The implementation of reforms is in most areas a shared responsibility between the states and the federal government. Implementation is backed up by measures to achieve better co-ordination of cross-jurisdictional policies in the Council of Australian Governments (COAG). It is promising, for example, that there are now financial incentives for the states to move this process forward.

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Assessment and recommendations

The economy needs cooling, while potential growth should be boosted over the medium term

Australia is enjoying its 17th consecutive year of growth. Living standards are rising faster than in the rest of the OECD, the unemployment rate is around its lowest for 33 years and the government's balance sheet has swung into a net asset position. These results have been underpinned by structural reforms, the proximity to dynamic Asian markets and hefty terms of trade gains. However, the long period of uninterrupted growth has pushed the economy towards capacity limits at a time when it is faced with a fresh surge in commodity prices. The external environment should remain favourable over the medium term, with the continuation of rapid growth by the Chinese and Indian economies prompting strong demand for Australia's mineral resources. In the short term, the priority should be to curb inflationary pressures. In the longer term, the main challenge is to raise capacity faster. Current and prospective favourable conditions should be seized to adopt reforms that would allow Australia to catch up with the best performing OECD countries.

Demand, hitherto very buoyant, is now slowing

The economy has stood up well to the ongoing global financial market turbulence. So far, the financial sector has withstood the crisis thanks to prudent management, high profitability and strong capitalisation. The country has benefited above all from the steep increase in its terms of trade which, in early 2008, were 40% above their long-term level. This has boosted domestic demand, which was growing at nearly 6% until end-2007. However, demand has been slowing since then, partly reflecting an earlier sharp increase in interest rates. The economic climate has also become clouded by the rapid rise in oil and food prices and the uncertainties regarding growth prospects in the rest of the OECD. After rising by 4½ per cent on average in 2007, gross domestic product (GDP) growth slowed to 2¾ per cent year-on-year in mid-2008. Headline inflation accelerated to 4½ per cent year-on-year in mid-2008, reflecting increases in commodity prices and rising profit margins, while inflation expectations have risen. On the other hand, wage inflation has not picked up, despite the tight labour market.

Monetary policy needs to remain tight

Inflation is running well above the 2-3% range targeted by the Reserve Bank of Australia on average over the cycle. To contain inflationary pressures the authorities raised their leading rate by 1 percentage point between August 2007 and March 2008, to 7.25%.

This tightening was accentuated by the increase in spreads, the stock market downturn caused by financial market turbulence and, until recently, an appreciation of the exchange rate. These factors are now curbing activity. However, the size of the slowdown is uncertain. A terms of trade rise of some 20% is expected over 2008, while agricultural production should pick up as a result of improved weather conditions and households enjoyed a hefty tax cut in July 2008. The weaker outlook for the advanced economies and the slowing in the domestic economy led to a 25 basis point easing in monetary policy in September. *Nevertheless, monetary conditions will need to stay relatively tight until it becomes clear that the slower growth in demand is leading to a sufficient easing in inflationary pressures. Calls to raise the inflation target should not be heeded, because it is vital to maintain the monetary policy framework intact to avoid an unhinging of inflation expectations, which would be very costly to correct.*

The slightly restrictive fiscal stance should also help to moderate activity

Since 2002/03, the federal government has regularly redistributed additional tax revenues derived from the terms of trade gains, thus pursuing an expansionary fiscal policy. The cumulative stimulus to the economy may have amounted to around 2½ per cent of GDP until 2007/08. Being aware of the inflationary risks, the new government shifted the emphasis in the 2008/09 Budget, which targets a slight rise in the surplus to nearly 2% of GDP against the background of slowing activity. The authorities have also used revenue windfalls to increase the surplus but have not made such a commitment beyond the 2008/09 Budget. Personal income tax cuts have been offset by reductions in spending, while the focus of spending has shifted. Three funds with an initial total provision of AUD 40 billion (3¼ per cent of GDP) have been set up to finance investment in priority sectors such as infrastructure, education and health. *According to the OECD projections, fiscal policy is likely to be slightly restrictive in* 2008/09, *which is welcome*. GDP growth could slow to about 2½ per cent in 2008 and 2¼ per cent in 2009, which is short of potential growth. The unemployment rate will probably rise a little and the output gap should open up, with the result that inflation could fall gradually to around 3% by end-2009.

The fiscal strategy should avoid a pro-cyclical fiscal stance and sustain the recent improvement in the management of spending

The fiscal position is in good shape to cope with the ageing of the population. A funded pension system was introduced in 1992 and a string of budgetary surpluses has swung the government's balance sheet into a net asset position amounting to 6% of GDP at the end of 2007. In the past, the strategy of maintaining the budget in balance or surplus, while limiting any increase in taxation, resulted in a pro-cyclical fiscal stance. The rule limiting any increase in taxation prevented the operation of the automatic stabilisers on the revenue side by favouring an immediate redistribution of revenue windfalls due to terms of trade gains. In order to take better account of the cycle in the future, the Australian Loan Council (an advisory committee) will assess whether it is appropriate to use the new funds' resources to avoid fuelling inflationary pressures. It is important, however, to ensure that managing public investment over the cycle does not impair the economic and social returns of the projects selected. *With discretionary fiscal policy lacking the flexibility to fine-tune the cycle, one option would be to commit to a multi-year spending plan. This*

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would smooth the growth in outlays and ensure that investment programmes are implemented gradually, irrespective of fluctuations in the terms of trade. This approach would strengthen the stabilising effect of fiscal policy as it would allow cyclical fluctuations in revenues, or revenues deriving from changes in the terms of trade, to be passed on to the government balance, which has not always been the case in the past. As the public finances are sound from a long-term perspective, it would not seem necessary to increase structural surpluses any further apart from dealing with terms of trade changes which are not expected to be long-lasting.

Over the past few years, there has also been a sharp rise in spending, the quality of which was not always ensured. The recent creation of funds that will channel budget surpluses into financing investment in infrastructure, education and health could play a valuable role in improving the quality of spending, especially since the intention is to select projects on the basis of cost/benefit analysis. *The success of this approach hinges on ensuring transparency as regards the management of these new funds, together with rigorous technical and financial evaluations of the projects. More broadly, the government should continue its programme of strategic reviews of priority spending areas to ensure the quality of public spending. In particular, the government should carefully assess recent proposals to significantly increase adjustment assistance for the automotive industry. There is a risk that assistance of this kind would not contribute to the best use of the economy's scarce resources at a time of near full-employment.*

A comprehensive review of the tax system is underway

The government has announced a broad review of the tax system, to be concluded by end 2009, with clear benefits compared to the piecemeal approach of the past years. The review will encompass both federal and state taxes, focusing on the complexity of the tax system and its interaction with the welfare system. Areas to be examined include the taxation of savings and income, including company taxes, as well as environmental taxes and the state property taxes. Based on previous OECD *Surveys* and recent Australian reviews, *reforms should be directed towards reducing the relatively high effective marginal tax rates faced by many low-income households (focusing in particular on "low-wage traps"); improving the tax system of the states through abolishing remaining stamp duties; and broadening the land property and the payroll tax bases. The large number of state business taxes should be reduced. A greater share of the rent due to rising commodity prices should be captured. The possibility of raising the Goods and Services Tax should also be considered, with the revenue used to reduce the direct tax burden on labour. Once the tax structure has been reformed, consideration should be given to indexing the personal income tax scales to inflation to reduce fiscal drag.*

Labour supply should be raised further…

Chronic skills shortages in combination with supply pressures from an ageing population imply that Australia cannot afford to exclude potential workers from the labour market. Further policy action to improve incentives to work should be pursued as part of a broader strategy to improve participation outcomes. The greatest disincentives affect women with families and lone parents, disability benefit recipients and older workers. Much scope remains, in particular, to raise participation rates of women and lone parents through improved financial incentives and better child-care facilities. *The structure of Child Care Benefit should be changed to reflect the age-related cost profile of child-care provision. The* *benefit should also be made more conditional on employment or job search, while recognising competing policy priorities such as improving the educational outcomes for the most disadvantaged children. The introduction of a paid parental leave scheme would bring Australia in line with international practice* and bring potential benefits in terms of a reduced length of breaks after child-birth and increased chances for women to return to their pre-birth job. *To reduce reliance on disability pensions, the tighter eligibility and participation requirements that apply to entrants to this scheme since July 2006 should be extended to the stock of all recipients.To this end, further investment in placement services will be required. Also, disability benefit recipients should not be discouraged from searching for a job by the fear of losing their pension entitlement if, after finding work temporarily, they lose it again*. The development of a national strategy is currently under way that will address the barriers faced by people with disabilities in gaining and keeping employment. Regarding older workers, *incentives for early retirement should be reduced by gradually aligning the eligibility age for superannuation (currently 55, but to be increased to 60 by 2025) with that of the Age Pension (age 65)*.

… with immigration being an important contributor

Immigration remains an important contributor to labour supply, alleviating skills shortages. As many immigrants are highly skilled, the adequate use of immigrants' human capital is of key importance. Over-qualification is a problem, particularly for immigrants from non-English speaking countries. *Improving further the assessment and recognition process of overseas skills through, for example, a reduction in the complexity of the current regime and, where practicable, a better alignment of the assessments with occupational requirements, appear important in this regard. In addition, scope exists to increase the responsiveness of temporary migration, especially with regard to the 457 visa scheme, as recognised by the government.* Historically low unemployment rates and Australia's demographic trends will increase demands for rising immigration and the government supports higher immigration levels. Further increasing inward migration requires a comprehensive strategy for population growth. The strategy should deal with housing, the tax and welfare system, education, infrastructure, water and environmental issues. An additional challenge is to attract immigrants to non-urban areas where they are most needed.

Educational performance could be improved further, especially in the critical area of early education and child care

The promotion of a high-quality education system that responds swiftly to changing skill needs is a top priority of the new government. The "Education Revolution" pursues reforms across the whole education system, an important objective being the closing of the gap for the indigenous population. While Australia fares well in international comparison with regards to the Programme for International Student Assessment (PISA) test scores for 15 year-olds, important challenges remain in all education sectors, especially in early childhood education and care. Reducing complexity and fragmentation in this area and tackling issues of under-supply and inequity in access are of major importance, given the beneficial impact of early education on later outcomes. Participation in pre-primary programmes remains low as does government spending on such services. Many disadvantaged children miss out, though they are those with the highest payoff from early childhood education. Budget initiatives support a more integrated and comprehensive early childhood education through the provision, by 2013, of universal high-quality access for all four year-olds. Recent reforms also help parents to meet the cost of care and the number of child-care places is being increased. *Efforts to improve access to affordable quality child care should continue. Consideration should be given to extending universal access to three year-olds, focusing initially on disadvantaged groups, and increasing the duration of services to accommodate child care and education needs better.*

School outcomes should be enhanced and their variance reduced

Secondary education attainment is a powerful determinant of participation in the labour force. The government's commitment to increase Year 12 retention rates to 90% by 2020 is therefore welcome. The programme of Trade Training Centres in Schools may raise attainment levels and facilitate the transition to work or further education. A close monitoring and evaluation of the effectiveness of the programme is critical. Though PISA results are generally strong, reading performance has deteriorated between 2003 and 2006 and a considerable gap in performance related to disadvantage remains. Different facets of accountability, autonomy and choice have been shown to be strongly associated with student achievement. Moving towards less centralised management is indispensible to increase school autonomy and choice. Moves by the government towards developing a national school curriculum and a nationally-consistent testing system will strengthen accountability. To improve literacy and numeracy and reduce the "tail" of underperformance, the government will target funds where they are most needed, with the National Partnership payments providing additional funding to schools with pupils from low socioeconomic status. *School principals should be given autonomy in recruiting and rewarding teaching staff to attract and keep high quality teachers.* Also to that end, consideration could be given to *changes to the system of teacher career progression, which caps salaries nine years after graduation in the public sector.*

There is scope for increasing the flexibility and responsiveness of the vocational and higher education systems

The capacity of the Vocational Education and Training system to address skill shortages needs to be raised. Low completion rates of training courses are of particular concern. The *Skilling Australia for the Future* reform package aims at reducing the skills gap through the provision of additional training places and by placing industry requirements at the centre of the skills system. As a welcome step, future funding will focus more on the quality of services and completion rates. To raise the effectiveness of the reformed system *training packages need to be updated regularly to meet changing skill needs.* A more responsive and better performing training system also hinges upon greater competition among providers. *Moving towards a more commercial governance model for Technical and Further Education institutes, for example, by allowing course fees to reflect at least partly the costs of courses, would be advisable, while the funding mechanisms for the training system should be reformed to foster competition among providers and become more consumer oriented.* Finally, a less rigid policy framework for higher education would promote flexibility and diversity. The government's commitment to put an end to the current "one-size-fits-all" model of university funding, and move to a more flexible approach through the introduction of mission-based compacts goes in the right direction. *Consideration should also be given to making the higher education system more demand oriented, with financing following students. This would raise competition among providers.* Improved student support mechanisms are essential for removing barriers to access for students from disadvantaged backgrounds. *The reduction of the age of independence from parental means testing could be considered, while raising the extent of student support for living expenses (on a means-tested basis) would be in line with international practice.*

The current industrial relations reform has to safeguard flexibility

The simplification and gradual decentralisation of industrial relations since the early 1990s has made the economy more resilient. But the pursuit of reforms towards a greater individualisation of labour relations, following the *WorkChoices* Act in March 2006, did stir much controversy, because of equity concerns. The most contentious aspects of this Act are being phased out and a reform launched, the specifics of which will be discussed in the second half of 2008. The reform will strengthen collective bargaining at the firm level, widen the minimum employment conditions safety net, restore the right to appeal against unfair dismissal and introduce a uniform national system of labour relations in the private sector. While equity concerns need to be addressed, care should be taken not to undermine labour market flexibility. *To maintain a close link between productivity gains and wages, the future organisation of collective bargaining must remain within the company framework, as recognised by the government. Harmonising the system of industrial relations across the states is an important goal, but the result must not be alignment on the most restrictive standards. Lastly, in order to protect the most vulnerable wage earners better and help them into work, a strategy combining minimum wage moderation and the introduction of employment-linked benefits should be considered. However, such a scheme would need to be carefully designed so as to avoid increasing marginal effective tax rates.*

The segmentation of product markets needs to be overcome

Although product market regulation is competition friendly overall, the functioning of markets could be improved, particularly by reducing their segmentation arising from differing regulations across the states. Regulatory harmonisation and coordination across jurisdictions, which the authorities revived in the context of the National Reform Agenda and more recently, the COAG reform agenda to achieve a seamless national economy, is a key challenge for the years ahead. *It is important, for example, to establish a uniform national consumer protection system. Continuing efforts must be made to reduce red tape and the number of different regulations concerning construction codes, the environment and workplace health and safety. The implementation of a competitive domestic energy market needs to be accelerated, with companies still under government control privatised and the ceiling on electricity retail prices removed.* Public control over electricity companies is neither necessary for securing power supply nor a guarantee of efficiency. Electricity prices have risen faster in New South Wales, where there is still a public monopoly, than in other states in eastern and south-eastern Australia since the creation of the National Electricity Market, whereas productivity gains have been smaller. *The regulations covering heavy goods vehicles and access* *to rail infrastructure need to be made more homogeneous. These measures should be accompanied by regulatory changes that take advantage of technological progress by, for example, introducing road haulage charging which takes account of the place and intensity of network utilisation. In telecommunications, the government's massive financial involvement (AUD 4.7 billion) in constructing a fibre optic Internet system must not strengthen the dominant position of the incumbent, Telstra. To raise competition, consideration should be given to separating infrastructure management from service provision.*

The commitment to combat climate change is welcome

Climate change policy shifted substantially with the ratification of the Kyoto Protocol in late 2007 and the commitment to reduce greenhouse gas emissions by 60% in 2050 from the 2000 level. The government has defined the broad lines of its strategy and is conducting consultations to finalise its action plan, in particular, to define the emission reduction trajectory by the end of 2008. This strategy includes the introduction of a national emission trading scheme, planned to commence in 2010, with a broad sectoral coverage. To ensure a smooth implementation of the scheme, the government will set emission caps each year for at least the following five years and cap the carbon price between 2010/11 and 2014/15. It will also allow unlimited banking of permits and authorise a limited amount of short-term borrowing. These measures go in the right direction as they will reduce abatement costs. To reduce these costs further, *too rapid a decline in emissions should be avoided in the short term*. The authorities have also indicated their intention to use all revenues provided by the auctioning of the emission permits to help households – especially low-income households – and businesses to adjust to the impact of the scheme and invest in clean energy options. As long as support to households is not directly linked to their actual fossil fuel consumption, they should not affect the relative price changes required to modify their behaviour. However, *the government's intention to fully offset the increase in fuel prices for motorists by cutting fuel excise for at least three years is counterproductive. Subsidising heavy vehicles, fishing and farm fuel energy costs is also a disincentive to improving energy efficiency and reducing greenhouse gas emissions. Any assistance to industries should avoid compensating businesses which can pass the cost of permits on to consumers, such as coal-fired electricity generators, except for reducing the possible impact of higher risk premiums for investments due to potentially significant declines in asset values induced by the regulatory changes*. The authorities have ruled out nuclear energy, but have decided to double the amount of electricity generated from renewable energy sources by 2020, bringing it up to 20%. The renewable energy target operates under a market based system of tradable renewable energy certificates, which will limit the distortions and increased costs of emission reductions that this target is likely to cause.

Water management reform has to be pursued

Better water management is essential to halt the over-exploitation of water resources, particularly in rural areas, and improve supply in large urban areas which are facing persistent quantitative restrictions. Although exacerbated currently by an exceptionally long period of drought, pressures are likely to increase with the growth of demand and the negative effect of climate change on water resources. To better identify and overcome over-exploitation, which primarily affects the country's main water catchment area (the Murray Darling Basin) which is shared between five states, the Federal Government has implemented the Water Act 2007 and introduced the AUD 12.9 billion Water for the Future plan to improve the management of the basin by giving an increased role to the federal authorities. *The plan aims in particular to modernise irrigation infrastructure and buy back water entitlements. It represents a big step forward. Its full implementation, which will stretch until 2019, should be accelerated. Market mechanisms and water entitlement trading also need to be strengthened. Efforts to clarify and harmonise water entitlements between states must be pursued. The numerous impediments to trading permanent water allocation entitlements have to be dismantled. These include restrictions on access to markets for certain users, barriers to trade between rural and urban areas and the exit fees restricting transactions between irrigation districts. Reforming urban water management by government owned monopolies should be explored, while public subsidies for funding water infrastructure projects should be avoided. Lastly, the reform of water charging needs to continue, especially in agriculture, so as to ensure recovery of full supply cost and some environmental and economic externality costs, while water prices in urban areas should reflect demand pressures.*

Recent reforms in federal-state relations are commendable

In many areas the federal government and the states have shared responsibilities. Progress in the authorities' ambitious reform agenda depends thus crucially on a close co-operation between the different levels of government. In some areas, Australia is still not a single market, but rather eight distinct ones because of the disparate regulations of the states, which in some cases duplicate national regulations as well. Not only does this fragmentation affect certain specific sectors, such as energy and freight, but a vast complex of regulations in areas such as taxation, environment, consumer protection and employment impacts on virtually everything that companies do. The recent changes to the federal-state relations to foster co-operation, rationalise the funding system and enhance accountability are commendable, and in line with previous OECD recommendations. The new framework for federal financial relations reduces the complexity of the specific-purpose payments, through a significant reduction in the number of such payments, without a reduction in total funding. Benefits also arise from funding such payments on the basis of outputs and outcomes, rather than inputs, as states are granted greater flexibility in the allocation of federal funds, while administrative and compliance overheads will decline. The new arrangements will further enhance transparency and accountability through performance reporting. *International experience suggests that targets should be simple to quantify and audit, if they are to enhance operational efficiency.* The introduction of National Partnership payments to support specific projects and provide financial incentives for states to adopt reforms of national importance is a major step forward in driving reforms in key areas such as education and product markets, including the management of water resources. *That said, the federal authorities should not refrain from resorting to a more directive approach if key reforms are held up.*

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Chapter 1

Key challenges

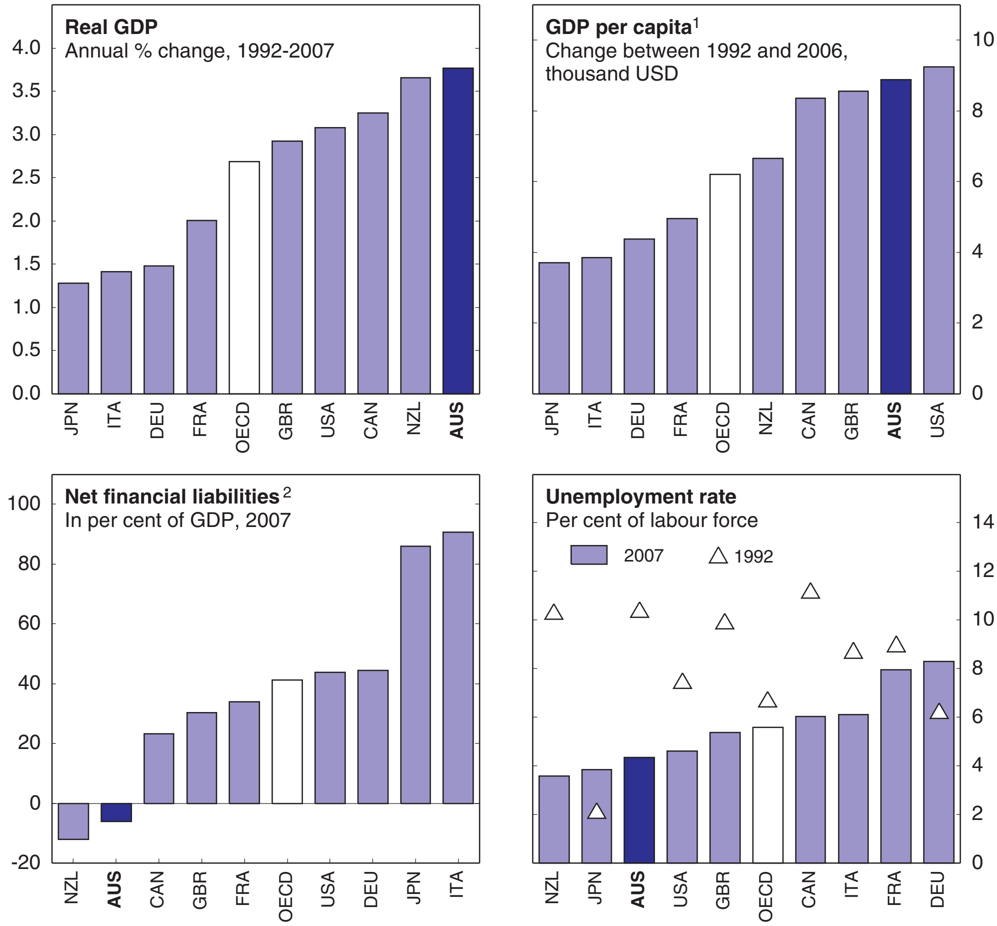
The economy has expanded for sixteen consecutive years and the economic picture is, overall, very favourable. However, inflationary pressures have mounted and macroeconomic policy will need to stay relatively tight to ease demand pressure until a significant easing in inflation is in prospect. The new government has launched a vast reform programme to sustain strong growth over the medium term. Against this backdrop, this chapter will assess the recent performance of the economy, the short-term outlook and monetary and fiscal policy requirements. The chapter will then highlight the main structural policy challenges. These include reforming the education system, raising labour supply, reforming industrial relations and product markets, the latter including critical areas such as infrastructure and water management.

Output growth has been brisk in international comparison and living standards have progressed rapidly (Figure 1.1). Per capita gross domestic product (GDP) climbed from 16th to 12th place amongst the OECD countries between 1992 and 2006. The unemployment rate has dropped, to roughly 4% – its lowest level since 1974 – and net general government debt has been wiped out thanks to a long string of budget surpluses. These achievements are all the more impressive as they came at a time marked by a series of disturbances including the Asian crisis of the late 1990s, the sharp global economic slowdown at the turn of the century and an exceptionally long drought. The far-reaching structural reforms of the past quarter century, which *inter alia* spurred competition, had positive repercussions on productivity in the latter half of the decade and made the economy more resilient, while the solid frameworks for fiscal and monetary policy were conducive to macroeconomic stability. In recent years, sharply rising income has also been sustained by the proximity to the dynamic Asian markets and soaring raw materials prices, which have bolstered the terms of trade.

To maintain this strong performance macroeconomic stability will need to be preserved. It is threatened by mounting inflationary pressures. The long period of uninterrupted growth has strained production capacities and created bottlenecks, especially in the realm of infrastructure. Like the other OECD countries, Australia must also cope with rising prices for basic foodstuffs and energy, which are also fuelling inflation, and the consequences of the international credit-market crisis. In the longer term, it will be important to expand production capacities. Apart from short-term fluctuations, the external environment should remain favourable, with the likely continuation of the catching-up process by the Chinese and Indian economies. Continuing strong demand for Australian mining resources could be accompanied by further substantial changes in relative prices, which could also be affected by the new climate change policy. Given these prospects and the expected negative impact of population ageing on growth potential and trends in living standards, well-designed structural reforms are needed to raise productivity gains, which have levelled off in recent years.

These challenges have been identified clearly by the new government, which shortly after its election formulated a five-point plan calling in the short term for a tightening of fiscal policy and a stimulation of private savings. In the longer term, the plan seeks to boost capacity by eliminating infrastructure bottlenecks, spurring labour-market participation and improving training and education. This orientation of economic policy, responsibility for which is shared in many areas by the states and the federal government, is backed up by efforts to improve co-ordination across levels of government through the Council of Australian Governments (COAG).

Figure 1.1. **Key indicators**



StatLink http://dx.doi.org/10.1787/471202605806

1. GDP in constant prices, constant purchasing power parities.
2. General government.

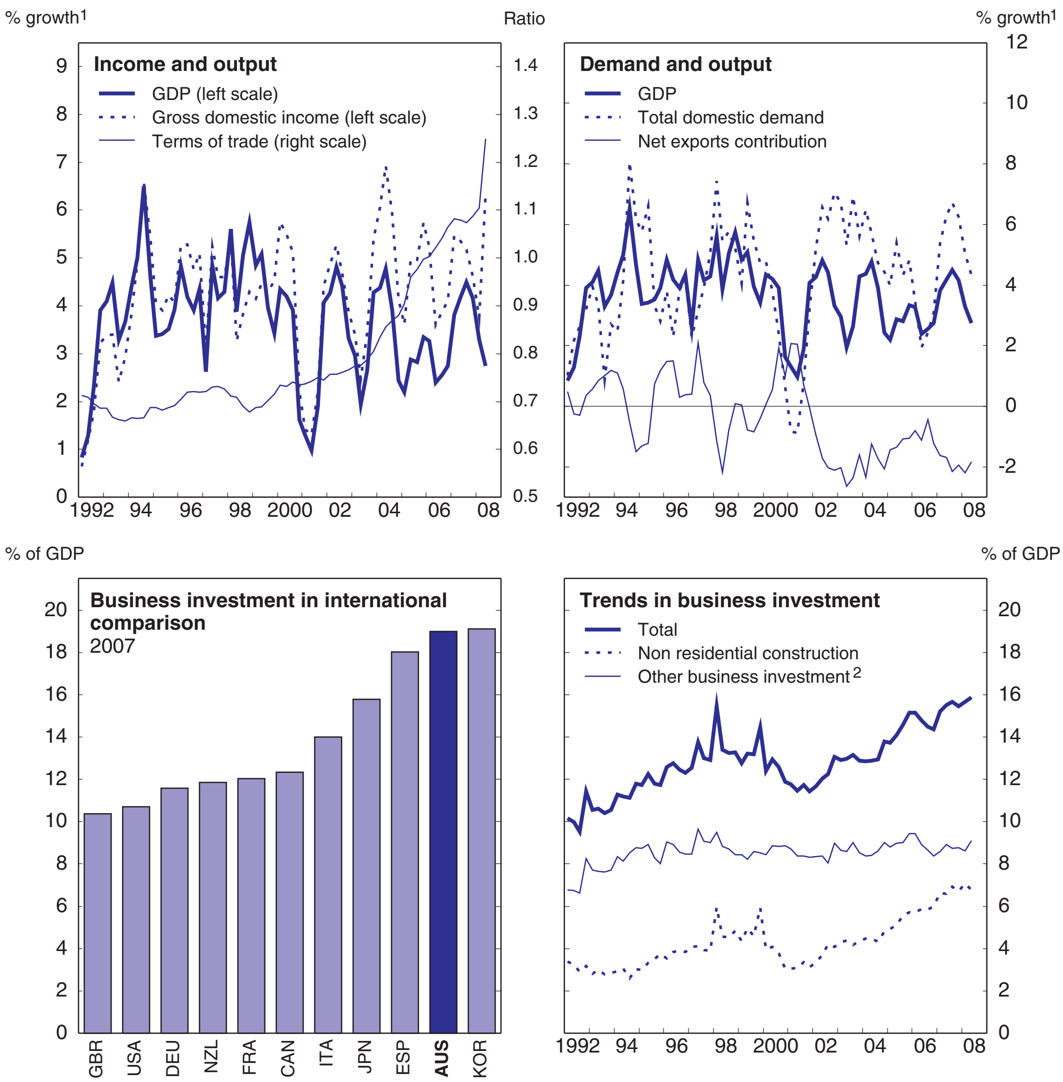
Source: OECD (2008), *OECD Economic Outlook: Statistics and Projections – Online database*, No. 83; and *National Accounts of OECD Countries – Online database*, September, OECD Publishing.

In the short term, the main challenge is to stem the rise in inflationary pressures

Domestic demand is moderating

In recent years, the economic situation in Australia has differed from that of the rest of the OECD area. In contrast to most of the other countries, Australia enjoyed rising income along with an increase in the terms of trade, which lie roughly 40% above their long-term value, and it was spared a pronounced weakening of the real estate sector which affected many other economies. Growth in domestic demand was thus very brisk, at roughly 6% year-on-year to the last quarter of 2007 – far greater than the economy's growth potential, which on OECD estimates amounts to about 3¼ per cent (Figure 1.2). Buoyed by strong profitability, business investment soared, to reach a high level as a proportion of GDP in international comparison. This reflects very rapid growth in non-residential construction, especially in the mining sector and in infrastructure, in which government also invested heavily. Private consumption was also robust until the end of 2007. Households recorded solid income gains, reflecting a large increase in employment, swift

Figure 1.2. **Output growth is supported by sustained terms-of-trade gains**



StatLink http://dx.doi.org/10.1787/471236061205

1. Year-on-year percentage change, volume.
2. Machinery and equipment, livestock and intangible fixed assets.

Source: ABS (2008), *Australian National Accounts: National Income, Expenditure and Product* (cat. No. 5206.0), Australian Bureau of Statistics; and OECD (2008), *OECD Economic Outlook: Statistics and Projections – online database*, No. 83, OECD Publishing.

real wage growth and further income tax cuts. However, production growth, which was 4½ per cent in 2007, was held back by capacity shortages. Imports were up sharply, while real export growth remained modest. This reflects the effective appreciation of the exchange rate, which is at a 23-year high, but also supply constraints stemming from the drought, persistent bottlenecks in certain infrastructures which precluded taking full advantage of expanding markets, and a lack of skilled labour.

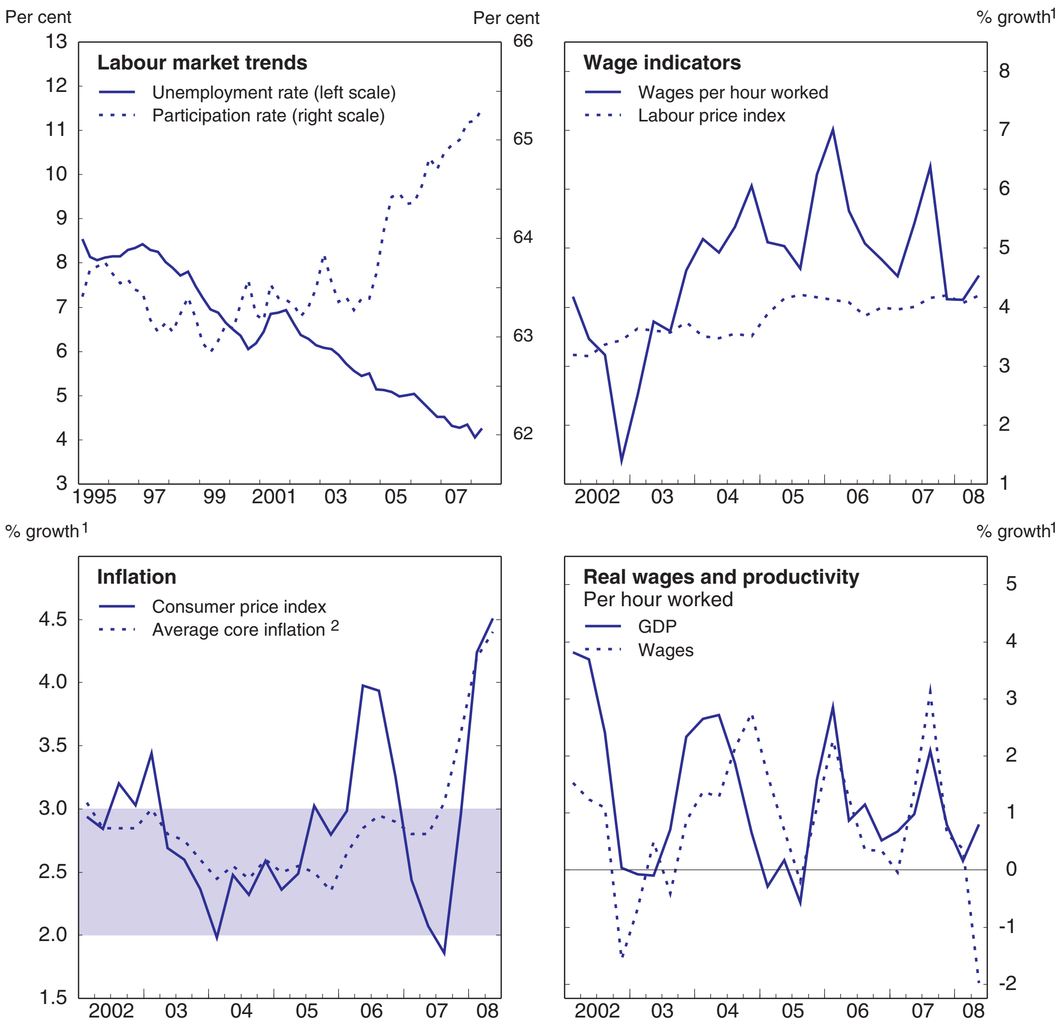
Since the beginning of 2008 demand has moderated. Turbulence in international financial markets, which has weighed on the stock market since end 2007, soaring oil prices and uncertainty over foreign demand have clouded the economic environment, especially since interest rates have climbed sharply since August 2007. In the second quarter of 2008, GDP growth weakened to an annualised pace of 1.1% and, on a year-on-year basis, it slowed by about ¾ percentage point to 2¾ per cent between the first and second quarter. This resulted mainly from the pronounced deceleration of household consumption, which was partly offset by still vigorous business investment and buoyant government expenditure. Exports also picked up strongly in the second quarter, after a prolonged period of sluggish growth. Recent indicators do not point to an imminent rebound of household demand in the second half of 2008, although income growth was spurred by a further tax cut of ¾ per cent of GDP since July 2008. Car sales have continued to weaken in August. After falling sharply since the mid-2007, consumer confidence improved in August and September, but it remains 8% below its long-term average. House prices fell slightly in the June quarter and a decline in housing construction activity is likely. Indicators of business conditions have also weakened in the second quarter to below long-run average levels for the first time since 2001 and credit expansion to both businesses and households has significantly slowed up to July. However, although declining, capacity utilisation is still high and profit margins, which are comfortable, should be boosted further by the terms of trade gain that is expected to reach some 20% over 2008. Business investment plans remain very strong for the 2008/09 fiscal year. Improved harvests should also raise agricultural exports, whereas the robustness of infrastructure investment should lessen supply constraints that have been limiting growth of other commodity exports. In all, there is still uncertainty about the magnitude of the current economic slowdown.

Inflationary pressures have increased

The impact of weaker activity on the labour market has been limited so far, and the labour-market situation has remained tight. The unemployment rate has recorded a trend decline over the last years despite a higher participation rate, buoyed since July 2007 by the implementation of the Welfare to Work programme which boosts the supply of labour among welfare recipients (Figure 1.3). Fostered by the strong job creation in the resource-rich states, employment growth has remained robust and the unemployment rate has stabilised at around 4% in August 2008. Such a jobless rate is close to a historic low and below the estimate of structural unemployment of around 5%.[1] Leading indicators (job vacancies and advertisement series) suggest, however, a softening in labour market conditions. Wage growth has so far been contained. Growth in the cost-of-labour index, which measures pay trends without adjusting for qualitative or quantitative variations in the tasks performed, has remained stable since 2005 and amounted to 4.2% in the second quarter of 2008. Increases in compensation as measured by the national accounts have been faster, which probably reflects, in part, a desire on the part of businesses to hold on to their employees in a tight labour market. Notwithstanding, real wage growth has remained in line with productivity gains (Figure 1.3). Moreover, the sharper gains recorded in the mineral-rich states of Queensland and Western Australia, where the drop in unemployment was most pronounced, have not triggered contagion effects in the rest of the economy.

Even so, headline inflation has risen, reaching 4½ per cent in the year to the second quarter of 2008. This figure was boosted by an upward adjustment to the financial and insurance services component to correct for earlier errors.[2] However, even abstracting from this, inflation has remained high, with underlying inflation around 4%. Inflation is thus well above the central bank's target range of 2-3% and is the highest one recorded since the

Figure 1.3. **The labour market is tight and inflation pressures have intensified**



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1. Year-on-year percentage change.
2. Average of the weighted median and trimmed mean measures.

Source: ABS (2008), *Australian National Accounts: National Income, Expenditure and Product* (cat. No. 5206.0), *Labour Force Australia* (cat. No. 6202.0), *Labour Price Index Australia* (cat. No. 6345.0), *Consumer Price Index Australia* (cat. No. 6401.0), Australian Bureau of Statistics; and RBA (2008), *Bulletin – Statistical Tables*, Reserve Bank of Australia, September.

early 1990s. It reflects a combination of factors including strains on capacity, conducive to swelling corporate profit margins, even in sectors not directly benefiting from soaring raw material prices. Rent increases have also gathered pace, spurred by rising demand, due in part to greater immigration. Moreover, inflation is being fuelled by higher energy and commodity prices, as in the rest of the OECD.

Monetary and financial conditions have become tighter

Monetary conditions have been tightened

In response to rising inflationary pressures, the gradual tightening of monetary policy undertaken since 2002 stepped up in late 2007 and early 2008. The Reserve Bank of Australia (RBA) mandate is to keep inflation to around 2-3%. This objective is set on average over the medium term.[3] It thus provides leeway as it does not entail keeping price rises strictly within the stated range. But the Bank deemed the situation serious enough to raise its policy rate in four ¼ point steps between August 2007 and March 2008, taking the rate to 7.25%. The aim of the authorities was to bring domestic demand to a sustainable level. Steering monetary policy is tricky, however, in the current context. The moderating effect of monetary tightening on domestic demand has been somewhat offset by the rising terms of trade. The tax cuts in recent budgets have caused the tax revenue windfalls derived from the terms of trade gains to be spread throughout the entire economy. The RBA must also cope with the consequences of the financial crisis and the weakening of the world economy, the extent of which is uncertain. One source of uncertainty, for example, is the impact of the OECD area-wide slowdown on emerging Asian countries, and especially China, which exerts a growing influence on the Australian economy.

Australia has also been affected by the ongoing financial market crisis. So far, the Australian financial sector has held up well, thanks to prudent risk-management and to high levels of profitability and capitalisation stemming from a long period of high growth (RBA, 2008). These disruptions, however, have dried up the business sector's access to capital markets. This has induced a process of bank re-intermediation along with a rise in the banks' refinancing costs which has been passed on to businesses and households.[4] This has accentuated the monetary policy tightening. The rise in three-month interest rates on the interbank market has been 1½ percentage points since August 2007 – ½ a percentage point more than that of the central bank's base rate (Figure 1.4). The average increase in these refinancing costs has been less than in the United States or the euro area since August 2007. It cannot be ruled out, however, that a further deterioration in the financial environment might induce, along with higher prices, quantitative credit rationing, which has so far been limited.

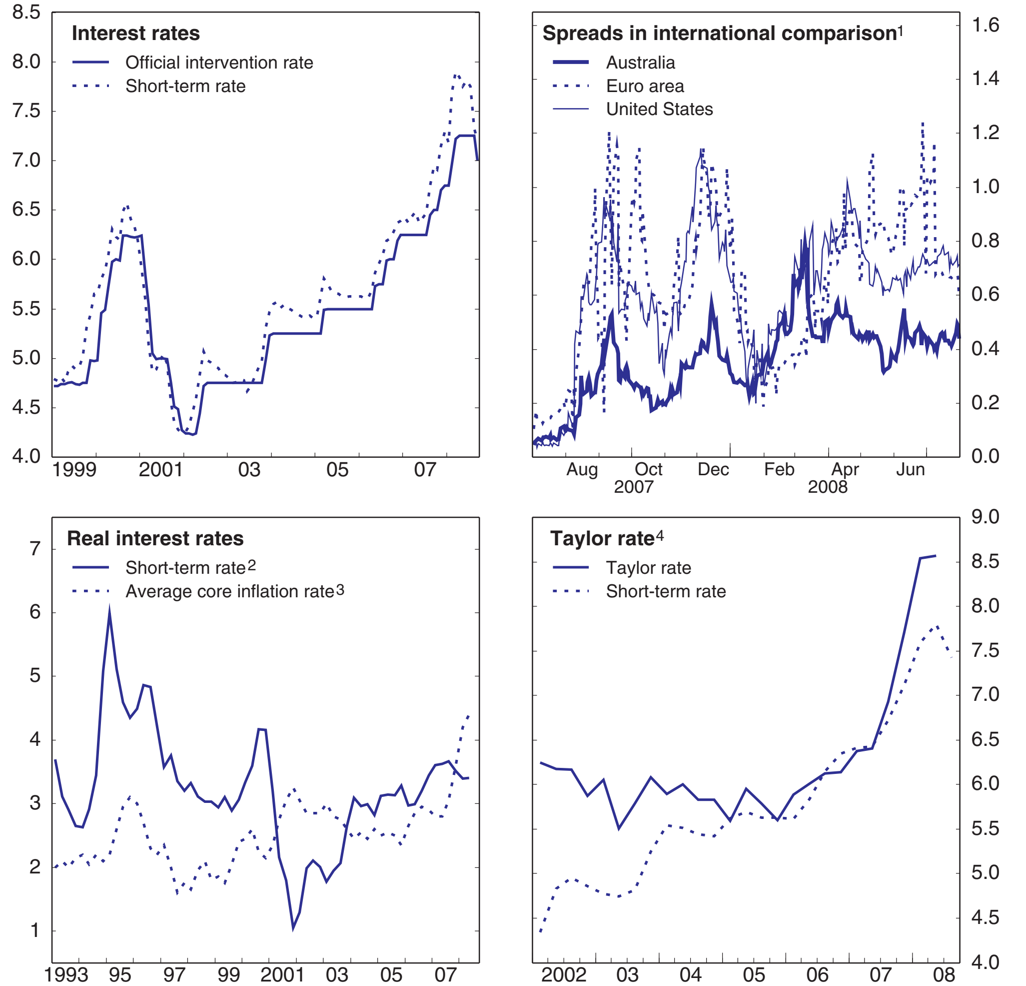
A restrictive policy stance must be maintained to contain inflationary pressures

Uncertainties affecting the international environment, combined with those involving the time needed for monetary policy to moderate demand, militate for prudent management to avoid two pitfalls. The first, which is more important, involves the persistence of high inflation. This risk is heightened by rising commodity and energy prices, which escape direct control by the RBA and reflect a probably long-lasting change in relative prices linked to the rising impact of China and other emerging countries in the world economy. Continued pressures on prices raise the probability of accelerating wage growth. Inflation expectations have already gone up in recent quarters (Figure 1.5). Upcoming wage agreements will be renegotiated in a tight labour market, and the government has undertaken an industrial relations reform that strengthens the negotiating power of workers and trade unions.

The second challenge will be to avoid keeping financial conditions tight for too long. Interest rates have risen significantly, and the sharp rise in household debt, which doubled over the past ten years as a proportion of disposable income to 160% at the end of 2007, has augmented the effect of interest rate increases on demand (Debelle, 2004). In addition, broader financial conditions have tightened, with the Australian stock market declining significantly (Figure 1.5). Although real short-term interest rates are not especially high in a long-term perspective (Figure 1.4), and in nominal terms are slightly below some Taylor rule estimates, the tightening in financial conditions is clearly acting to slow the economy. In the context of a decelerating global economy, this has been reflected in a slowing in credit growth, household spending and economic activity, which was confirmed by the

Figure 1.4. **Short-term interest rate developments**

Per cent



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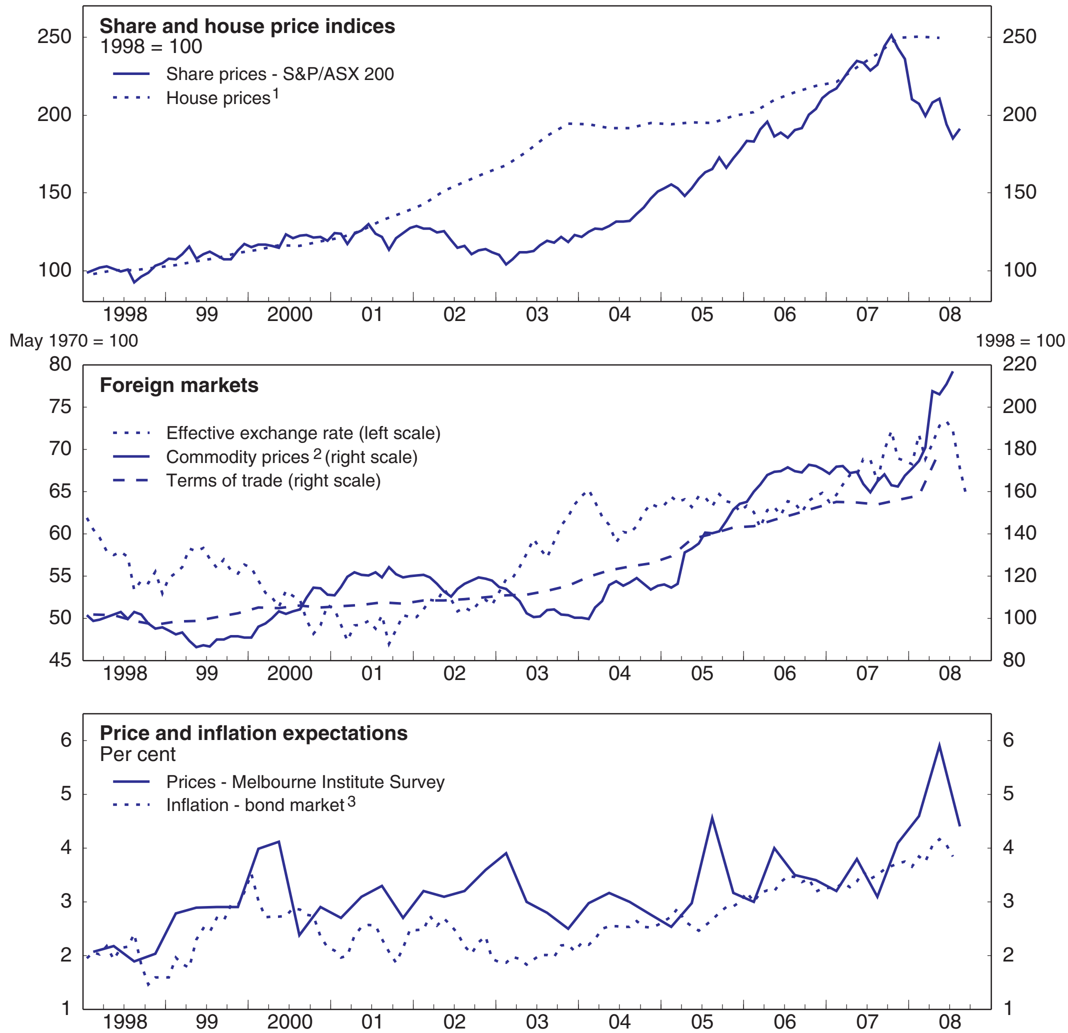
1. Spread between the 3-month interbank borrowing rate and expected official cash rate.
2. Difference between the 3-month market interest rate and average core inflation.
3. Average of the weighted median and trimmed mean measures.
4. The weights attached to inflation and the output gap are 1.5 and 0.5 respectively. The price stability target is inflation of 2.5% and the assumed equilibrium interest rate is 3.2%.

Source: RBA (2008), *Bulletin – Statistical Tables*, Reserve Bank of Australia, September; Datastream; Bloomberg; and OECD (2008), *OECD Economic Outlook: Statistics and Projections – Online database*, No. 83, OECD Publishing.

national accounts for the second quarter 2008. The RBA has indicated it expects a period of continuing subdued household demand, which will be only partly offset by strong growth in business spending, so that it has become more confident that the required slowing in demand is occurring and that inflation will gradually fall back to the 2-3% target. Accordingly, and not wishing to keep rates at high levels for longer than was needed, it cut the cash rate by 25 basis points to 7.0% in September 2008. The Bank noted that one factor behind this reduction was the desire to offset the tightening in financial conditions coming from increases in bank lending margins that had occurred in July.

In the current circumstances the monetary policy framework should not be changed. Recent criticisms notwithstanding, the framework is not too rigid as the inflation target is

Figure 1.5. **Financial conditions and inflation expectations**



StatLink http://dx.doi.org/10.1787/471301700023

1. Break in series in the first quarter of 2002.
2. In Australian dollars.
3. Difference between the yields for ten year and indexed Australian government bonds.

Source: RBA (2008), *Bulletin – Statistical Tables*, Reserve Bank of Australia, September; ABS (2008), *House Price Indexes: Eight Capital Cities* (cat. No. 6416.0), Australian Bureau of Statistics; and OECD (2008), *OECD Economic Outlook: Statistics and Projections – Online database*, No. 83, OECD Publishing.

defined over the medium term, thus avoiding a situation in which the economy is cooled excessively to ensure that inflation comes down rapidly. Moreover, in Australia's case rising commodity prices constitute not only a supply shock, but a positive demand shock as well, on which monetary policy can act directly (Henry, 2008; Stevens, 2008a). The monetary tightening that occurred was therefore appropriate. It contributed not only to restraining the vigour of domestic demand, but also to limiting the impact of rising commodity prices by contributing to exchange-rate appreciation.[5] This tightening, some of which took place just prior to the federal elections, testifies to the RBA's independence and bolsters its credibility, which stems from keeping inflation in check for more than a decade. More recently, the slight easing of monetary policy combined with market expectations of further interest rate cuts contributed to a substantial fall of the Australian dollar, which reached almost 13% in effective terms between the end of June and mid-September. This development needs to be monitored, as an excessive softening of financial conditions would be inappropriate in the current context. Until demand has cooled sufficiently and price pressures have moderated, policy will have to remain on the restrictive side, to ensure that high inflation expectations do not feed through into wages growth.

Both the central bank and the federal authorities have an important pedagogical role to play to limit the risks that inflation will spread. Notable efforts to do so have been made recently, with the improvement of the RBA's communication strategy. Since December 2007, press releases have been issued after each meeting of the Board to explain its decision, even if base rates are left unchanged, which had previously not been the case. In addition, and like some other central banks, the RBA now issues a summary of the minutes, highlighting the main considerations raised during the Board's deliberations, two weeks after each meeting. This information, which complements the presentations that the Bank's executive members make regularly at conferences or before Parliament, has a useful role to play in stabilising inflationary expectations (Stevens, 2007).

An important aspect of the communication strategy involves the presentation of the Bank's forecasts. As in some other OECD countries, the forecasts are based on the technical assumption that interest rates will remain unchanged at their current level, and they cover a period of 2½ years – a sufficiently long time frame for the thrust of monetary policy to affect the economy. The scenarios enable the Bank to explain why it considers its actions sufficient to bring inflation back down to an acceptable level within a reasonable amount of time or, on the contrary, whether new monetary adjustments should be expected. This approach has worked well so far, although provision of further information about the kinds of models that the Bank uses in its forecasting should be considered. An improvement in statistical information, with monthly rather than quarterly publication of inflation indicators, as in virtually every other OECD country, would also be welcome.

In the short term, fiscal policy will moderate demand pressures

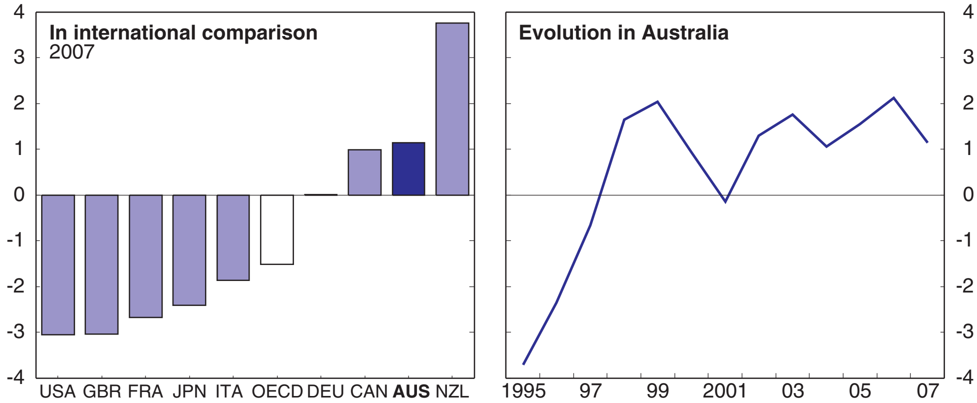
Fiscal policy has spread terms of trade gains to the rest of the economy

Between 1996 and 2008, the central government's fiscal strategy drew on a number of principles that sought to ensure the long-term viability of public finances while at the same time affording flexibility. These principles demanded that a balanced budget be maintained on average over the cycle, and that surpluses be generated as long as the outlook for growth was healthy. They also called for not increasing the tax burden beyond its 1996/97 level and for improving the net position of the central government. Moreover, great transparency has been required by the Charter of Budget Honesty, which calls for periodic publication of a number of documents, including an Intergenerational Report every five years to assess long-term developments. The medium-term focus of fiscal policy has been continued by the new federal government, though with pledges to maintain budget surpluses and to keep the tax burden on average below its 2007/08 level.

This strategy has put Australia in a favourable fiscal position, both in a historical and international perspective. The general government surplus has hovered around 1¼ per cent of GDP for the past ten fiscal years (Figure 1.6), and the general government held net assets valued at 6% of GDP at the end of 2007 – their highest level in over three decades. In recent years, however, public finances have also been buoyed considerably by the rising terms of trade. Government revenues have been boosted not only by the direct effect of the higher

Figure 1.6. **Fiscal balance**

General government net lending in per cent of GDP



StatLink http://dx.doi.org/10.1787/471303356644

Source: OECD (2008), *OECD Economic Outlook: Statistics and Projections – Online database*, No. 83, OECD Publishing; and ABS (2008), *Australian National Accounts: Financial Accounts* (cat. No. 5323.0), Australian Bureau of Statistics.

profits and taxes paid by mining companies, but also by the indirect effects of this positive shock on national income and the country's wealth. The central government has been the main beneficiary of the rising terms of trade. *Inter alia*, this has triggered faster growth of corporate tax levied at the federal level than of state taxes on payrolls and royalties, even in Western Australia and in Queensland, where the main mining resources are concentrated.

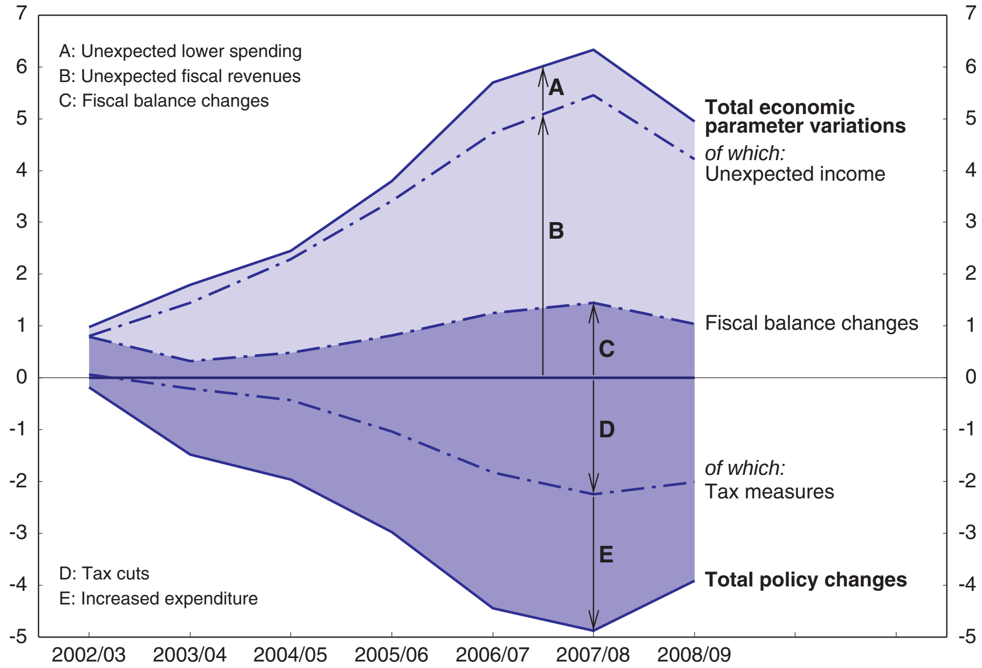
An analysis of the revisions to the federal budgets, which are established annually over a four-year period, provides useful additional information about the impact of the terms of trade on public accounts. All revenue projections since 2001/02 have subsequently been revised upwards, with the bulk of these revisions being a consequence of higher terms of trade. The adjustments amounted to between 3½ and 5½ per cent of GDP for the fiscal years 2005/06 to 2007/08, as compared with the projections made four years earlier (Figure 1.7).[6] These budgets were also characterised by lower spending (A), so that the combined effects of changes in the economic parameters over a four-year period increased the authorities' fiscal margins by 3¾ to 6½ per cent of GDP (A + B). Part of these unexpected resources was used to improve the fiscal balance (C). On average, this balance was raised by some 1¼ per cent of GDP from the initial target. The remaining resources were used to cut taxes (D), especially on household income, but also, and more importantly, to expand government spending (E). For the three fiscal years from 2005/06 to 2007/08, roughly half of the unexpected fiscal gains was used to increase spending, whereas about a third of the resources was used to cut taxes and just over 20% to improve the general government balance. The bulk of the gain on the terms of trade seems thus to have been considered fiscally sustainable, giving rise to higher spending and tax cuts.

This policy has been conducive to higher government spending and has spurred activity

Distributing the positive effects of terms of trade gains to the rest of the economy through fiscal policy has probably helped alleviate growth disparities between the states, all of which have enjoyed improved economic circumstances, even if the improvement has been most pronounced in states that are rich in mineral resources (Figure 1.8). Nevertheless, this policy has also given rise to a lessening of control over spending, not only at the federal level (Laurie and McDonald, 2008), but also by the states, even though

Figure 1.7. **Cumulative effects of federal budget revisions since 2001/02**[1]

Per cent of GDP



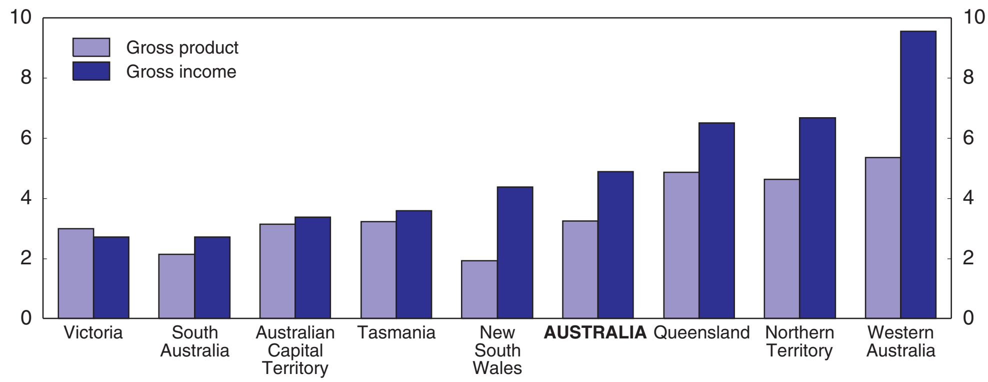
StatLink http://dx.doi.org/10.1787/471347105618

1. Federal budgets are established over a rolling four-year period which includes forward estimates for total revenues, spending and balances for three years beyond the next budget. Each budget reconciles the current and the previous year's forward estimates. This graph reports the impact of the successive revisions implied by this procedure on the 2002/03 to 2008/09 budgets. Estimates have been made to adjust for the goods and services tax prior to 2007/08.

Source: Australian Government, *Budget Papers* from various years.

Figure 1.8. **Regional disparities in growth**

Annual average percentage growth, 2003-07[1]



StatLink http://dx.doi.org/10.1787/471414151286

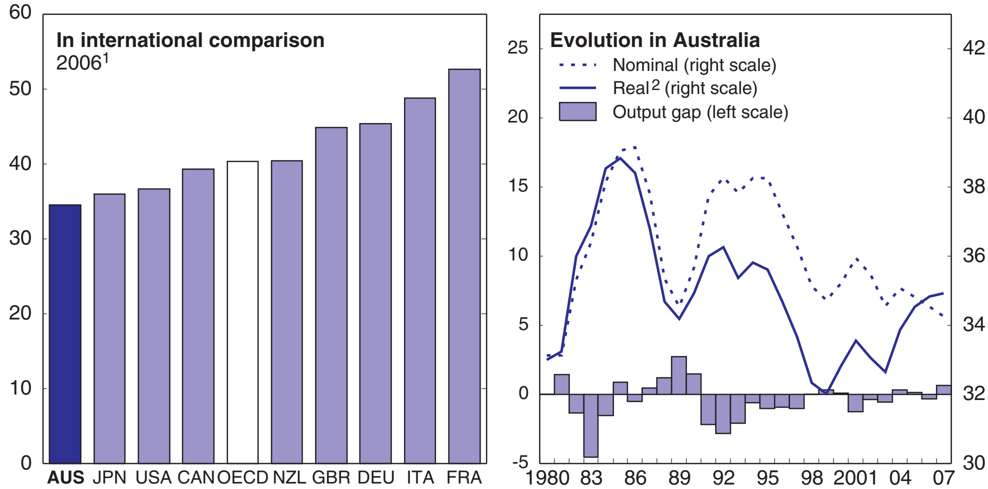
1. Growth in real gross state income and real gross state product; data in June.

Source: ABS (2007), *Australian National Accounts: State Accounts* (cat. No. 5220.0), Australian Bureau of Statistics.

total expenditure has remained stable as a proportion of GDP, at a relatively low level in international terms (Figure 1.9). But this ratio is affected by the terms of trade gains, which have increased the GDP deflator sharply, so that in real terms government spending has risen far more rapidly than production. This rise is the fastest since the early 1980s, and it

Figure 1.9. **Total general government expenditure**

In per cent of GDP



StatLink http://dx.doi.org/10.1787/471432072125

1. 2005 for New Zealand.
2. Calculated using the deflator for private consumption.

Source: OECD (2008), *OECD Economic Outlook: Statistics and Projections – Online database*, No. 83, OECD Publishing; and ABS (2008), *Australian National Accounts: National Income, Expenditure and Product* (cat. No. 5206.0), Australian Bureau of Statistics.

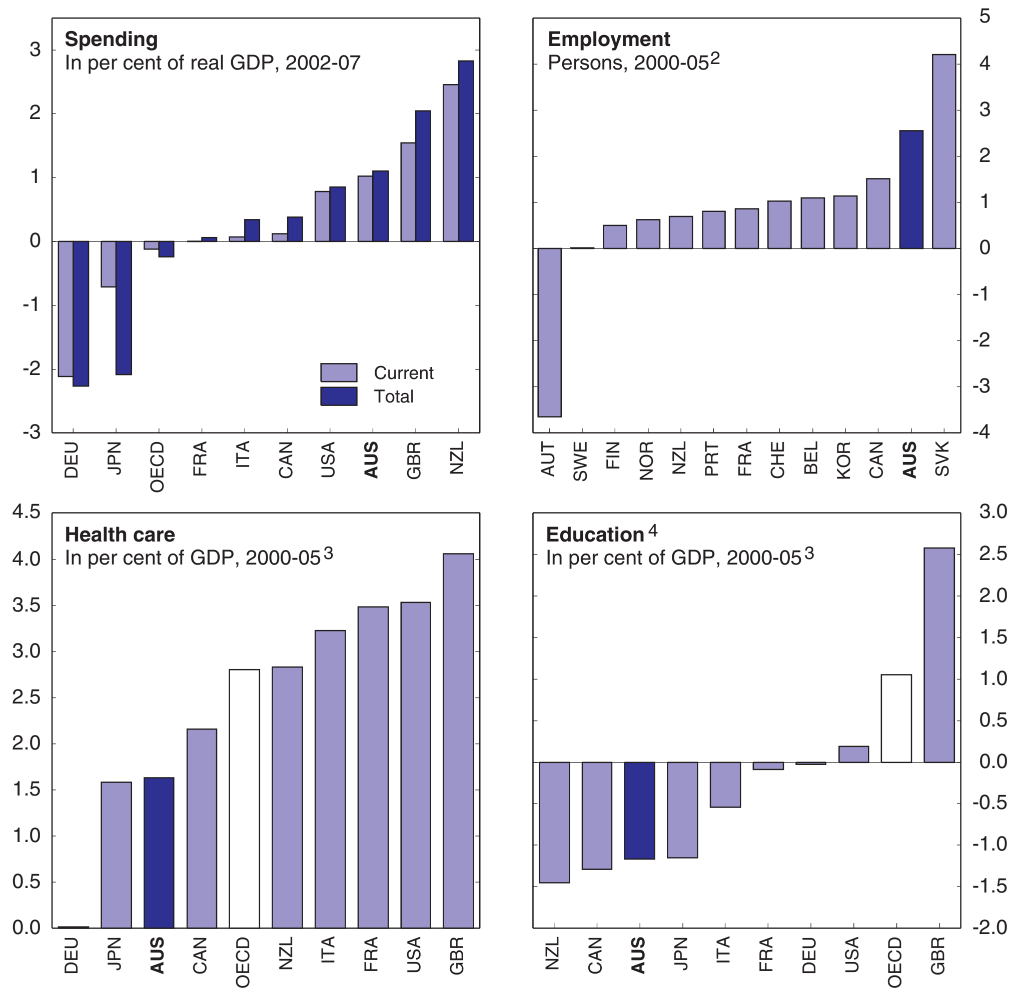
came in a favourable economic environment, in contrast to previous episodes, which were characterised by recessions.

Such a rapid rise is not necessarily problematic if the quality of spending is sufficient to offset the costs related to its financing, *e.g.* by bolstering the economy's productivity or improving social outcomes. In a period of full employment, however, such a trend is hardly conducive to allocating resources to the most productive sectors. Moreover, spending has centred on current outlays and government employment (Figure 1.10). On the other hand, growth in government investment has been modest and spending on education or health care, which are likely to have beneficial effects on human capital, has been lacklustre.

Fiscal policy has also aggravated strains on capacity. For example, rapid growth in the number of civil servants, especially in the states,[7] has outpaced private-sector job growth since the turn of the century. This has not eased tensions in the labour market, especially with respect to skilled workers, as the proportion of graduates in new hires for government agencies is roughly twice that for the private sector (Laurie and McDonald, 2008). Successive cuts in household income taxation have propped up short-term demand, even if some of the measures adopted will bolster the labour supply in the longer term. The expansionary thrust of fiscal policy can be estimated by an indicator of the general government balance that adjusts for cyclical variations as well as for variations stemming from the terms of trade (Turner, 2006). The decline of this balance, which incorporates the impact of the rising terms of trade as compared with their long-term average, would suggest that the combined fiscal policy stimulus has amounted to around 2½ per cent of GDP since 2002/03, or roughly two percentage points more than under a scenario in which the terms-of-trade gains had not been recorded or passed along to the rest of the economy (Figure 1.11).[8] This policy has added to demand pressures even if it did not stem from "fiscal activism" in a conventional sense, but from a strategy of redistributing the windfalls reaped from the terms of trade gains to the economy as a whole.

Figure 1.10. **Public spending developments**

Percentage change annual rate[1]



StatLink http://dx.doi.org/10.1787/471451345076

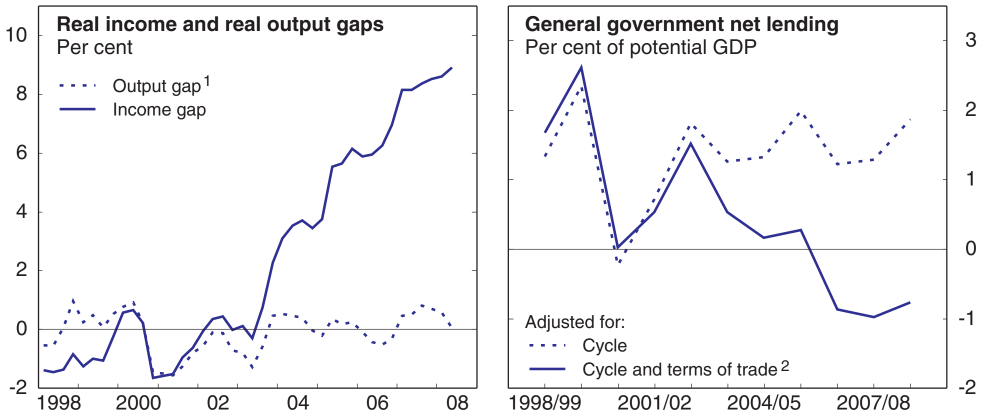
1. The OECD aggregate is an unweighted average.
2. Data based on a specific analysis aimed at developing internationally comparable data for public employment in a selected number of countries. For more details see bibliography reference cited below.
3. For health expenditure the period covered is 2000-04 for Australia and Japan.
4. Direct government expenditure on educational institutions.

Source: OECD (2008), *Education at a Glance*, *Health at a Glance* and *OECD Economic Outlook: Statistics and Projections – online database*, No. 83, OECD Publishing; OECD (2008), "Employment in Government in the Perspective of the Production Costs of Goods and Services in the Public Domain", Public Governance and Territorial Development Directorate, Document GOV/PGC/PEM(2008)1; and ABS (2008), *Australian National Accounts: National Income, Expenditure and Product* (cat. No. 5206.0), Australian Bureau of Statistics.

The tightening of fiscal policy is welcome

Aware of the risk posed by mounting inflationary pressures, the new federal government has set out to alter this trend. Accordingly, the 2008/09 Budget assumes a surplus close to 2% of GDP, somewhat higher than in 2007/08 and ¾ percentage point more than previously projected. In addition, the authorities have pledged to let the automatic stabilisers operate and to use any unexpected revenue gains to increase the surplus. The upward revision of tax revenue that has been recorded since the election has gone entirely to improve the fiscal balance. This budget includes the first phase of a further household

Figure 1.11. **Impulse of fiscal policy**



StatLink http://dx.doi.org/10.1787/471465648812

1. The real income gap is calculated as ([real domestic income/potential output] – 1 – α), where potential output is the OECD measure of potential output and α is a constant calculated to ensure that the average real income gap is equal to the average real output gap over history.
2. This indicator captures the gap in real income rather than the gap in real output by including the impact of the increase in the terms of trade relative to their long-term level (see Turner, 2006).

Source: ABS (2008), *Australian National Accounts: National Income, Expenditure and Product* (cat. No. 5206.0), Australian Bureau of Statistics; OECD (2008), *OECD Economic Outlook: Statistics and Projections – Online database*, No. 83, OECD Publishing; and Turner, D. (2006), "Should Measures of Fiscal Stance be Adjusted for Terms of Trade Effects", *OECD Economics Department Working Papers*, No. 519.

income tax cut that was promised during the campaign, amounting to AUD 7 billion (¾ per cent of GDP) (Box 1.1). To offset the revenue shortfall, spending is scaled back by an equivalent amount, so that federal government expenditure should rise by only just over 1% in 2008/09 – the slowest pace in nine years. A re-orientation of outlays, giving higher priority to infrastructure, climate change, education and health care, was also undertaken. To that end, the government has created three new funds earmarked for infrastructure, education and health care. They will receive approximately AUD 40 billion, corresponding

Box 1.1. **Main features of the 2008/09 Budget**

Policy changes introduced between the 2007/08 and 2008/09 budgets have a cost of 0.8% of GDP for the 2008/09 Budget and 1.1% for the years thereafter. The largest measure is the cut in household income tax that was promised prior to the election and incorporated into the pre-election Economic and Fiscal Outlook (PEFO) presented in October 2007. The additional measures that have been adopted subsequently and incorporated into the 2008/09 Budget have, however, slightly reduced the cost of the earlier decisions, whereas revenue windfalls have been used to boost the federal surplus (Table 1.1).

Main tax measures

The personal income tax cut, amounting to AUD 7 billion in 2008/09 (¾ per cent of GDP) and AUD 46.7 billion over four years (or roughly 1% of GDP per year), should boost household income, especially for those with modest incomes, and spur participation in the labour market. For example, a taxpayer with annual income of AUD 50 000 will enjoy a tax cut of AUD 1 000 in 2008/09. More specifically:

- As from 1 July 2008, the reform will increase the threshold for the 30% tax bracket from AUD 30 000 to 34 000. The thresholds for the 40% and 45% brackets will also be raised

Box 1.1. **Main features of the 2008/09 Budget** *(cont.)*

respectively from AUD 75 000 to 80 000 and from AUD 150 000 to 180 000. Additionally, the low income tax offset (LITO) will be raised from AUD 750 to 1 200.

- In 2009 and 2010, the LITO will be raised gradually to AUD 1 500, along with the threshold for the 30% tax bracket, which will be increased to AUD 37 000, while the 40% tax bracket will be lowered to 37%.
- Tax breaks are being introduced to encourage individual saving and for first-time homebuyers. These incentives cost roughly 0.1% of GDP over four years and are officially estimated to raise private saving by 0.4% of GDP over the same period.
- Means-testing, set at AUD 150 000 per year, is being introduced for payments of the Baby Bonus and Family Tax Benefit Part B. In addition, compensation in kind will be taxed more extensively.
- The tax on luxury cars is being increased from 25% to 33%. Excise tax is being raised on light oil involved in the exploitation of natural gas, and on certain alcoholic beverages catering to young people.
- Lastly, the government has pledged to conduct a sweeping review of taxation, and a committee has been assigned to formulate proposals for reform.

Main spending measures

Measures that would save a total of AUD 33 billion over four years (¾ per cent of GDP per year) were identified. Their partial implementation in 2007/08 made it possible to shift spending to the high-priority areas of education, health care and climate change. These savings will be bolstered in the following budget. Alongside these savings, which encompass efficiency gains, new spending initiatives call for:

- Equipping schools with computer hardware and increasing vocational training places by 630 000 within five years to tackle the shortage of skilled labour.
- Increasing appropriations for hospitals and assistance by social workers, focusing in particular on those caring for handicapped children and the dependent elderly.
- Financing an action programme against climate change and reform of water management.
- Creation of three funds to collect present and future budget surpluses in order to invest in three high-priority sectors: the Building Australia Fund, to finance transport and telecommunications infrastructure, with an initial endowment of AUD 20 billion (2% of GDP); the Education Investment Fund, to finance investment in higher education and vocational training, with an initial endowment of AUD 11 billion (1% of GDP); and the Health and Hospitals Fund, to renovate hospitals and health services and to finance medical research projects, thanks to an endowment of AUD 10 billion (1% of GDP).

to the combined surpluses of 2007/08 and 2008/09. In the years ahead, these funds will be used to finance investment projects in these sectors.

According to the OECD projections the current economic slowdown should continue in the coming quarters. The persistence of tight financial conditions, a softer international environment and the slightly restrictive fiscal policy stance in 2008/09 should moderate demand pressures. The fiscal stance indicator (adjusted for cyclical and terms-of-trade variations) could tighten by ¼ per cent of GDP in 2008/09 (Figure 1.11). This slightly restrictive stance is welcome as the economy is running at full capacity. The slowdown of

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Table 1.1. **Fiscal implications of policy changes between the 2007/08 and 2008/09 budgets**

Per cent of GDP

	2008/09	2009/10	2010/11
2007/08 Budget target	**1.0**	**1.1**	**1.0**
Policy changes total impact	**–0.8**	**–1.1**	**–1.1**
Parameter variations total impact	**1.6**	**1.6**	**1.7**
Policy changes before the elections	**–0.9**	**–1.0**	**–1.3**
Revenue	–0.5	–0.8	–1.0
Personal income tax cut	–0.6	–0.8	–1.1
Other	0.0	0.1	0.1
Expenses	0.3	0.3	0.2
Parameter variations before the elections	**1.0**	**1.4**	**1.5**
Revenue	0.8	1.1	1.0
Expenses	–0.2	–0.3	–0.5
Pre-election budget target	**1.1**	**1.4**	**1.2**
Policy changes since the elections	**0.1**	**0.0**	**0.1**
Revenue	0.2	0.3	0.5
Excise on alcohol and oil	0.1	0.1	0.1
Personal income tax[1]	0.0	0.1	0.2
Other	0.1	0.1	0.2
Expenses	0.1	0.3	0.3
Parameter variations since the elections	**0.6**	**0.2**	**0.2**
Revenue	0.5	0.4	0.4
Expenses	–0.1	0.2	0.2
2008/09 Budget target (excluding goods and services tax)	**1.8**	**1.6**	**1.6**

1. Including adjustment in fringe benefits.

Source: Australian Government, 2008/09 Budget, various *Budget Papers*, *www.budget.gov.au*.

domestic demand should however be mitigated by still robust business investment. Activity should progressively recover in the course of 2009 thanks to easing monetary conditions and the real depreciation of the Australian dollar. Sales abroad should also benefit from the positive impact of capital investment on export capacity. On average however, growth should moderate to 2½ per cent in 2008 and 2¼ per cent in 2009 (Table 1.2). As the economy cools down, the unemployment rate should edge up slightly to above 5% by the end of 2009. With a negative output gap and a lower oil price, inflation should moderate to around 3% by the end of 2009.

Both positive and negative risks attach to this soft-landing scenario. Income growth, propped up by the further rise in the terms of trade, will remain brisk in 2008 and 2009, which should sustain demand and heighten inflationary pressures, especially if growth in Asian economies, notably China, remains vigorous. Conversely, the combination of a more unfavourable external environment and a decline in the terms of trade represents a serious downside risk. This could be reinforced by a deepening of the crisis in international financial markets against a backdrop of declining returns on international securities and real estate markets. In view of these risks, the authorities' pledge to let automatic stabilisers operate is appropriate, but it requires close control of spending growth.

Table 1.2. **Short-term outlook**

	Percentage changes			Year-on-year percentage changes[1]			
	Outcome	Projections[2]		Outcome		Projections[2]	
	2007	2008	2009	2008Q1	2008Q2	2008Q4	2009Q4
Private consumption	4.5	2.4	1.5	3.7	2.9	0.9	2.2
Government consumption	2.4	3.6	2.2	3.7	4.6	2.6	2.2
Gross fixed capital formation	9.4	7.8	5.3	8.5	7.1	7.5	5.2
Housing investment	3.1	1.3	1.2	0.1	2.5	1.1	2.0
Public investment	10.6	16.0	6.3	20.5	6.6	14.2	6.0
Business investment	11.4	8.7	6.4	9.7	8.5	8.5	6.0
Final domestic demand	5.4	4.1	2.7	5.0	4.4	3.0	3.1
Stockbuilding[3]	0.7	–0.2	–0.1	0.1	0.0	–0.3	0.0
Total domestic demand	6.2	3.9	2.6	5.0	4.3	2.7	3.1
Exports of goods and services	3.1	5.8	7.1	3.5	6.1	7.9	7.1
Imports of goods and services	11.2	12.0	7.5	12.5	13.0	10.4	7.6
Net exports[3]	–1.9	–1.7	–0.5	–2.1	–1.8	–0.9	–0.5
Gross domestic product (GDP)	**4.4**	**2.5**	**2.3**	**3.5**	**2.8**	**1.8**	**2.7**
GDP deflator	3.5	6.0	4.4	3.6	6.6	6.8	3.3
Memorandum items							
Consumer price index	2.3	4.6	3.5	4.2	4.5	4.8	3.0
Unemployment rate (% of labour force)	4.4	4.3	5.0	4.0	4.3	4.6	5.2
Employment	2.9	2.0	0.9	2.7	2.2	1.3	0.9
Output gap (% of potential GDP)	0.7	0.0	–1.0	..	..	..	..
Short-term interest rate (%)	6.7	7.5	7.0	7.6	7.8	7.3	7.0
Current account balance (% of GDP)	–6.2	–4.9	–4.3	..	..	..	..

1. Seasonally adjusted data.
2. The projections presented are partial updates of those published in the *Economic Outlook* (No. 83) incorporating the national accounts data published for the first two quarters of 2008 and historical revisions for previous periods. These modified projections are based on the following assumptions: oil prices will remain at USD 110 per barrel until the end of 2009 and the exchange rate has been fixed at its level of 1 September 2008 (AUD 1 = USD 0.854).
3. Contribution to GDP growth.

Source: ABS (2008), *Australian National Accounts: National Income, Expenditure and Product* (cat. No. 5206.0), Australian Bureau of Statistics; and OECD (2008), *OECD Economic Outlook: Statistics and Projections – online database*, No. 83, OECD Publishing.

Medium-term fiscal management needs to be improved

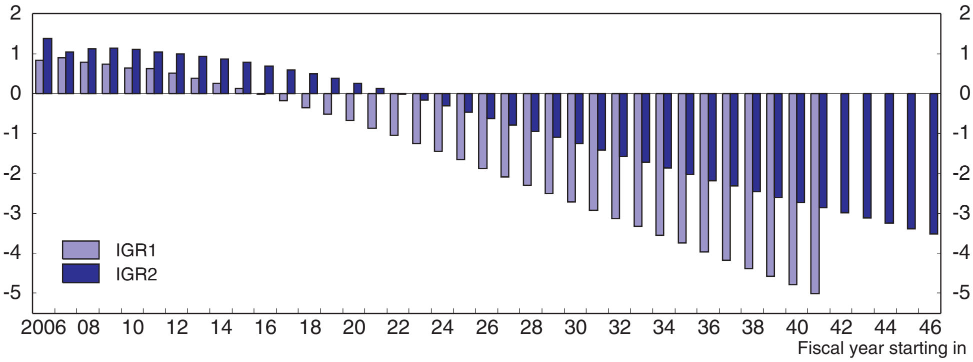
The long-term viability of public finances has been strengthened

The accumulation of surpluses in recent years has enhanced the long-term viability of the public finances. The second Intergenerational Report (IGR2), published in 2007, shows that if policy were kept unchanged a primary budget deficit of some 3½ per cent of GDP would be recorded by 2046/47, whereas the previous report had projected it at 5% of GDP by 2042 (Figure 1.12). This improved outlook stems *inter alia* from faster growth of nominal GDP[9] due to greater immigration, a higher participation rate and stronger gains in the terms of trade. According to this report, the federal administration's net debt position could swell to roughly 30% of GDP by 2046/47, which is not much, but it would be on an upward slope. Moreover, the Future Fund, created in 2006, will cover public sector pension benefits as from 2020. It amounted to AUD 64 billion in July 2008 and, according to the authorities, the appreciation of these assets is expected to cover the future pension liability without requiring the injection of more funds.

In all, public finances are in a far less worrisome position in Australia than in many other OECD countries. This stems in part from a less unfavourable demographic structure,

Figure 1.12. **Comparison of the projected primary balances of the Intergenerational Reports**[1]

Per cent of GDP



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1. The projections are of the primary balance (which excludes net interest payments and Future Fund earnings). The first four years of the IGR2 projections are primary balances based on the 2006/07 *Mid-Year Economic and Fiscal Outlook* adjusted for major government decisions announced since that time. Since IGR1, there have been some changes in projection methodologies incorporating new data and modelling approaches.

Source: Australian Government (2007), *Intergenerational Report* 2007, available at *www.treasury.gov.au/igr*.

but above all from the introduction in 1992 of the Superannuation Guarantee – a compulsory, funded occupational pension scheme. Only the first pension pillar (the Age Pension), which pays out a means-tested standard benefit to avoid the risk of poverty, operates on a pay-as-you-go basis, so that the direct budgetary impact of population ageing will be limited. According to the IGR2, government pension outlays will increase from 2½ to only 4½ per cent between 2006/07 and 2046/47 (Table 1.3). Over this period, the main upward pressures will be on health care spending, especially in the pharmaceutical sector, for essentially non-demographic reasons. Under the circumstances, Australia's main long-term fiscal challenge involves keeping a lid on medical outlays, an area in which the authorities have recently taken initiatives (Box 1.2).

Table 1.3. **Long-term projections of government spending by category**

Per cent of GDP

	2006/07	2046/47	Difference
Health	3.8	7.3	3.5
Pharmaceutical expenditures	0.7	2.5	1.8
Hospitals	1.2	2.3	1.1
Other	1.9	2.5	0.6
Care for the elderly	0.8	2.0	1.2
Old-age pensions	2.5	4.4	1.9
Other income support	4.2	2.7	–1.5
Family tax benefits	1.6	0.8	–0.8
Other	2.6	1.9	–0.7
Education	1.8	1.8	0.0
Total	**13.1**	**18.2**	**5.1**

Source: Australian Government (2007), *Intergenerational Report 2007*, available at *www.treasury.gov.au/igr*.

Box 1.2. Improving the management of health care spending

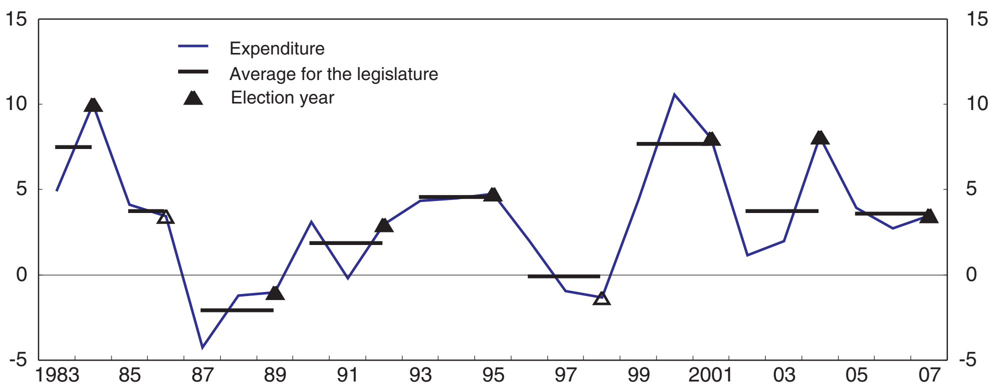
The foreseeable increase in the public sector's long-term financing requirements stems primarily from the expected rise in health care spending, especially in the pharmaceutical sector. Spending pressures, which are close to the OECD average (Oliveira Martins and de la Maisonneuve, 2006), could be alleviated if the sector's resources were used more efficiently, even though the Australian health care system does well in international comparison (Joumard *et al.*, 2008). Improving the health care system is one of the authorities' priorities, and the possibility of shifting control over hospital administration from the states to the Commonwealth if progress is not made in this area was raised during the election campaign. An agreement was reached between the federal government and the states to increase the transparency of health-related outcomes, and discussions are underway on hospital financing. A commission (the Bennett Commission) was also set up to improve preventive medicine and co-ordinate action among the various levels of government. Progress also needs to be made in stemming the growth of pharmaceutical expenses (OECD, 2006).

The quality of spending needs to improve

Though sound in many respects, the fiscal strategy of the past decade has shown a number of shortcomings by encouraging a pro-cyclical policy and a certain laxness in the management of spending, which is a longstanding phenomenon (Antioch, 1998). The immediate redistribution of budget revenue derived from the rising terms of trade has been encouraged, for example, by the rule that an increase in the tax burden was to be avoided. Moreover, the spending and electoral cycles are quite closely correlated (Figure 1.13).

Figure 1.13. **Federal government expenditure and the electoral cycle**[1]

Real percentage growth



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1. The budget covers the period from July of a year through to June of the following year. If the election was held after July then the expenditure growth of the election year was used for the calculations; if the election was held prior to July then the expenditure growth of the previous year was used.

Source: ABS (2008), *Australian National Accounts: National Income, Expenditure and Product* (cat. No. 5206.0), Australian Bureau of Statistics.

A first avenue of reform involves improving the quality of federal spending. From this standpoint, the 2008/09 Budget's creation of three funds to collect budget surpluses and channel their use to infrastructure, education and health care projects could play a useful role. Although the details regarding the governance of these funds have not yet been specified, the authorities have indicated that these projects will be subject to rigorous cost/benefit analysis. An independent advisory body, Infrastructure Australia, was established to draw up a list of infrastructure projects to be given priority. The governance arrangements of the other two funds are currently being developed. Where the investments are to be undertaken by the states, and the Australian Government has agreed to fund them, the funding will be provided as a National Partnership payment through a newly established COAG Reform Fund (see below). This process should be conducive to more efficient utilisation of public funds. The authorities should nonetheless see to it that the new funds are managed transparently, along with technical and financial evaluations of planned projects. Project evaluation could also benefit from the expertise of the Productivity Commission, which has frequently stressed the need to improve the functioning of certain sectors, such as transport, energy and water. Efficient use of additional public resources should be underpinned by further reforms in many areas, as acknowledged in the 2008/09 Budget and envisaged in the reform of the funding of the states by the federal government (see below).

The detailed assessment of the quality of spending should also examine recent proposals concerning assistance for the car industry. These proposals link the planned reduction of the existing tariff barriers on cars from 10% to 5% with additional subsidies to the automotive industry, which already benefits from relatively high protection compared with other sectors of the economy (Bracks, 2008). The transitional assistance scheme proposes to reform, extend and increase the existing support mechanism, which was scheduled to end by 2015. While its stated purpose is to promote competitiveness in the automotive industry, these subsidies also risk hindering structural adjustments and the necessary reallocation of resources to adjust to relative price changes. The careful assessment of this program is thus desirable, to ensure quality public spending in this area. More broadly, the government should continue its program of strategic reviews of priority spending areas.

Given the fluctuations in the terms of trade, a second important aspect of medium-term fiscal management involves improving its role as a stabiliser for the economy. It would seem important that the rule limiting any increase in the tax burden should not be allowed to prevent the automatic stabilisers from operating. Applying the rule too mechanically also runs the risk of encouraging the spread of tax expenditures that obscure fiscal management. To ensure that management of accumulated budget surpluses in the three funds takes the economic situation into account, the 2008/09 Budget directed an advisory committee, the Australian Loan Council, to assess the macroeconomic impact of proposed expenditure from the funds to avoid fuelling inflationary pressures, factoring in fiscal trends for general government. This initiative is welcome. However, it is also important to prevent cyclical fine-tuning of public investment from impairing the effectiveness of microeconomic management of government-funded projects and lowering their economic and social returns. The lack of flexibility and the limits of fiscal policy as a tool of cyclical regulation must be acknowledged as well.

Given this dilemma, one option would be to resort to a multi-year federal spending plan to smooth spending growth and ensure regular and gradual implementation of capital investment programmes irrespective of fluctuations in the terms of trade. Such an approach would help bolster fiscal policy's stabilising effect on the economy by letting revenue fluctuations be reflected in the fiscal balance, as the current tax rule, defined on average, allows. Indeed, it cannot be ruled out that sharp swings in raw material prices will occur in the future. Australia is unlikely to avoid these shocks despite the diversity of its natural resources. Insofar as it addresses a commitment of the central government, such a spending plan might also play a useful role in limiting pressures from the states, which are concerned about obtaining rapid funding for their infrastructure projects. Gradual implementation of the spending programmes underwritten by the new funds, which will lead to a decline in the fiscal balance,[10] would also help to smooth their impact on the federal accounts.

Such a change in the fiscal strategy is not intended to call the redistribution of gains from the terms of trade into question, insofar as these gains would appear to be permanent. The 2008/09 Budget in fact calls for all assets of the three newly created funds (capital as well as income) to be used to finance capital investment projects. In contrast to the approach formulated by some other countries, such as Norway, the funds' intended purpose is not to build up assets for reasons of intergenerational equity. This strategy would help to smooth the impact of terms-of-trade shocks. Given the extent of Australia's natural resources, it should be possible to exploit them over very long periods and the benefits to be reaped from them spread over several generations.[11] In addition, the pension system poses no major financing problem and pre-financing of future health care spending would not appear justified from an equity standpoint. The largest active generation today (born between the early 1960s and the early 1980s) is already affected by negative transfers to past and future generations. This generation is the first one to pay for its own retirement, whereas it must also finance that of the previous generation *via* taxes. It has also pre-financed future public-sector pensions through the creation of the Future Fund, and it is helping to pre-finance the development of infrastructure that coming generations will enjoy. Accumulating assets on a permanent basis for investment in financial markets should not be a government objective. Substantial structural budget surpluses signal an excessive level of taxation and the opportunity to carry out a far-reaching tax reform.

A comprehensive review of the tax system is under way

The government has announced a broad review of the tax system, to be concluded by end-2009, which should bring clear benefits compared to the piecemeal approach of the past years. The review will encompass both federal and state taxes, also focusing on the complexity of the tax system and its interaction with the welfare system. Particular areas to be examined include the taxation of savings, assets and investment, including company taxes, as well environmental taxes and the state property taxes. On the other hand the government restricted the review by committing not to raise the rate or broaden the base of the goods and services tax and to preserve tax free superannuation payments for those over 60 (Chapter 2). Moreover, the government has set the goal of reforming personal income taxation, by reducing by 2013/14 the number of marginal tax rates from four to three. In this context, the current top 45% rate will be reduced to 40% and the 40% rate to 30%. This goal is dependent on national and international economic conditions and maintaining, as a general principle, sound budget surpluses.

Previous *OECD Economic Surveys* and recent reviews in Australia have recommended directing reforms towards:

- Raising taxation on commodity production. A new two-tiered coal royalty system was introduced in Queensland in 2008/09 to capture a greater share of the resources boom. This is a welcome step towards capturing more of the rent due to rising commodity prices, but room for further improvement remains with more of the rent being taken by the federal government to the benefit of all Australians (Box 1.3).

Box 1.3. **Taxing natural resources**

The commodity price boom has been a major driving force for growth since the beginning of the decade. Exports of mineral resources accounted for almost half of total exports in 2007. Nevertheless, taxation of natural resources, which are mainly levied at the state level on the basis of royalties,* did not increase much and remained low in international comparison. Overall, royalty revenues increased by only 0.1 percentage point of GDP between 2000/01 and 2006/07 to 0.4%. Even in resource-rich states, the royalty revenue-to-production ratio recorded at most an increase of around 0.3 percentage point to 1.6% in Western Australia. The commodity price boom has generated somewhat more receipts at the federal level through the corporate tax. Corporate taxation increased by 1.1 percentage points of GDP between 2001 and 2006/07, but only part of this increase is due to the resource sector. Low taxation may have been justified at a time when commodity prices were depressed in order to foster the development of the mining industry, but it contrasts with the approach adopted in several other OECD countries where the natural resource sectors are also significant. In Norway, oil-related government revenues have amounted to about 15% of GDP in 2007. In Mexico, oil-related revenues are estimated to be about 40% of government receipts.

Higher taxes on natural resources are justified on efficiency and equity grounds. Taxing economic rents is not distorting and receipts can be used to lower distorting taxes. Besides, it can be argued that economic rents (super-normal profits) generated through the extraction of an exhaustible resource belong to the community as the owner of natural resources. Currently only part of this rent accrues to Australian people as foreign ownership of natural resources is relatively high, probably more than 50%. The government should thus consider raising the taxation on mineral resources.

Increasing taxation on natural resources raises a number of issues. If royalties are levied at too high a rate, they can discourage investment (Baunsgaard, 2001). This highlights the need for a balanced tax regime that attracts investors while providing a fair sharing of the economic rents. It would also be important to harmonise the disparate tax regimes across states. Disparities can lead to an over-exploitation in low-tax jurisdictions or under-exploitation where the royalty rate is too high (Rodgers and Webster, 2007). Inter-jurisdictional inconsistencies may also distort mineral exploration and development decisions. A recent study by the Australian Bureau of Agricultural and Resource Economics advocates the implementation of a profit-based royalty scheme (Hogan, 2007). The Norwegian tax scheme is also profit-based. Taxing the rent, though a preferable tax base, may not be easy, because it will be difficult to agree on what the rent component is.

Apart from the distribution of revenues between companies and the state governments, there is also the question of whether the federal government should benefit from the resource boom. Moving towards a federal taxation scheme could yield benefits in terms of using public wealth more equitably across the states – though horizontal fiscal equalisation arrangements take into account differences in the taxation of mineral resources across the states that are not due to policy.

* There are several instruments for taxing natural resources in Australia. For most mining projects output-based royalties are levied – either in the form of specific royalties (flat rate per unit of production) or on an *ad valorem* basis (levied as a percentage of the value of production). The Commonwealth's petroleum resource rent tax, a profit-based royalty applied to petroleum produced in offshore areas, is the main exception (Hogan, 2007).

- Reducing high effective marginal tax rates faced by many households in the lower income deciles, with a particular focus on addressing "low wage traps" (Chapter 2).
- Improving the efficiency of the state tax system, by implementing the agreed schedule for the abolition of most business stamp duties. As positive steps, New South Wales brought forward the abolition of non-residential conveyance duty, while Queensland advanced the abolition of mortgage duty.
- Broadening the land tax levied by the states to include, for example, owner-occupied residential land, and abolishing the conveyances duties on the transfer of real property. The states' payroll tax basis should also be broadened, mainly by abolishing the small firm exception (that halves the potential tax base).
- Reducing the complexity of the tax law by addressing the duplication and overlap of business taxes, while streamlining compliance procedures. The harmonised payroll tax administration across states decided in July 2008 goes in the right direction.
- Indexing income tax scales to overcome bracket creep, following a wide-ranging reform of the tax/benefit system should be considered, while the personal income tax base could be broadened by trimming tax expenditures.
- Though not included in the government's agenda, consideration should be given to broaden the goods and services tax base or/and increase its rate. Both are low in international comparison. Revenues should be used to reduce the tax burden on labour.
- The tax-free status for superannuation benefits from age 60 needs to be assessed against the incentives for "double dipping", and the fiscal costs this measure involves in light of an ageing population.

Raising productive capacity and enhancing market flexibility

In the longer term, the main policy challenge is to strengthen potential output and benefit more from globalisation and the emergence of China and India as major markets. These markets are already more important for exports for Australia than they are in most other OECD countries, Japan being the other major beneficiary (Table 1.4). However, capacity limits have hampered export growth. It has remained well below market growth although the sizeable appreciation of the exchange rate has also played a role (Andrews and Arculus, 2008) (Figure 1.14). It is important to raise labour supply and its utilisation and to stimulate productivity growth, which has decelerated since the beginning of the decade as a consequence of weaker multifactor productivity gains (Figure 1.16). Even accounting for the temporary factors which have affected the agricultural and mining sectors, productivity is now growing at a slightly slower pace than its long-term average (Banks, 2008).[12] While the causes of this deceleration are still unclear and it is too early to know whether it will be long-lasting, the possibility that structural reforms of the 1980s and 1990s have exhausted their effects cannot be ruled out (Dolman, Lu and Rahman, 2006).

In any case, margins exist to catch up with the best performing countries both for labour utilisation and productivity (Figure 1.15), even if it might be difficult to close the efficiency gap completely because of geographic handicaps such as the remoteness of Australia from large markets and its relatively small population (OECD, 2008; Dolman, Parham and Zheng, 2007). Reaping efficiency gains will be important to ease the adjustment required to achieve better environmental outcomes in the domains of water and greenhouse gas emissions and to maintain healthy progress in the standard of living despite an ageing population. Under unchanged policy, the average growth rate of GDP per capita could decline by ½ percentage

Table 1.4. **Geographical destination of merchandise exports**

In per cent of total

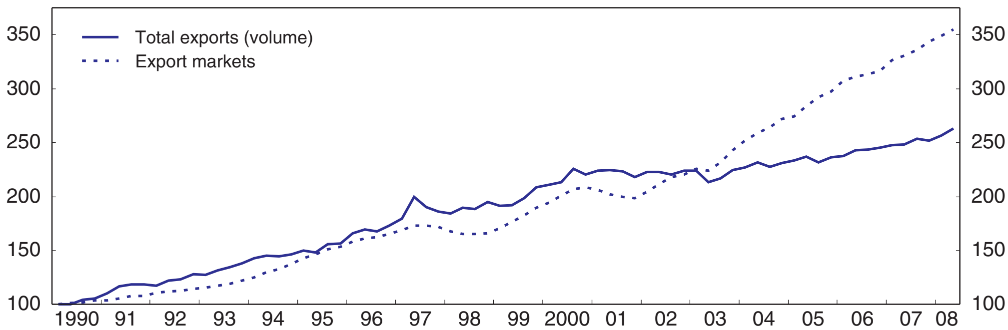
	Australia		2007				
	1990	2007	Canada	Japan	New Zealand	United States	Other G7[1]
World	100.0	100.0	100.0	100.0	100.0	100.0	100.0
OECD	66.8	52.7	92.2	48.4	63.8	66.8	78.8
Japan	26.4	18.9	2.0	. .	9.2	5.4	1.4
Korea	5.9	8.0	0.7	7.0	3.6	3.0	0.8
New Zealand	5.0	5.6	0.1	0.3	. .	0.2	0.1
United States	11.5	6.0	78.9	18.8	11.5	. .	7.3
Other OECD	18.0	14.1	10.5	22.2	39.5	58.2	69.3
Non-OECD	32.0	46.0	7.8	51.6	34.7	33.2	21.0
Non-OECD Asia	22.0	36.2	4.4	37.6	21.6	16.8	6.6
China	**2.5**	**14.2**	**2.1**	**14.1**	**5.3**	**5.6**	**2.6**
India	**1.3**	**5.5**	**0.4**	**0.8**	**1.0**	**1.5**	**0.8**
Other non-OECD Asia	18.2	16.6	1.9	22.7	15.2	9.7	3.2
Other non-OECD	10.0	9.7	3.5	14.0	13.2	16.4	14.4
Unspecified	1.2	1.4	0.0	0.0	1.5	0.0	0.2

1. Unweighted average of data for France, Germany, Italy and the United Kingdom.

Source: OECD (2008), *Monthly Statistics of International Trade – Online database*, July, OECD Publishing.

Figure 1.14. **Export markets and export growth**

Exports of goods and services, index 1990 Q1 = 100



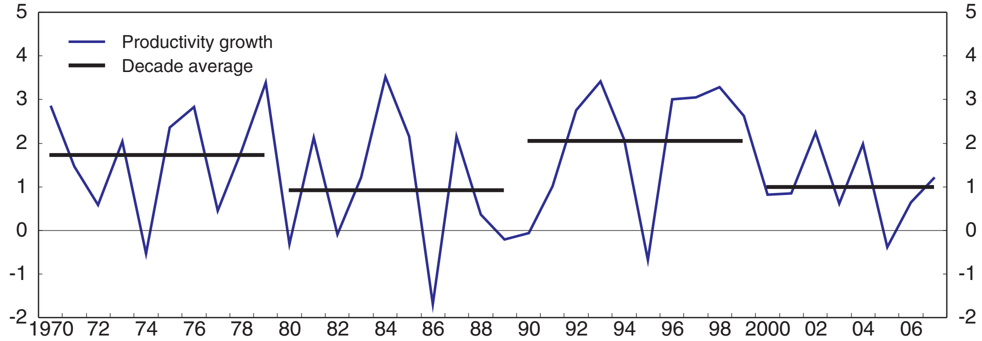
StatLink http://dx.doi.org/10.1787/471527868077

Source: OECD (2008), *OECD Economic Outlook: Statistics and Projections – Online database*, No. 83, OECD Publishing; and ABS (2008), *Australian National Accounts: National Income, Expenditure and Product* (cat. No. 5206.0), Australian Bureau of Statistics.

point to 1½ per cent a year over the next 40 years because of the negative impact of population ageing on labour utilisation (Australian Treasury, 2007). Aware of these challenges, the authorities have launched the National Reform Agenda (NRA), and the more recent COAG reform agenda, which extend and widen past efforts to stimulate product market competition and reduce the regulatory burden, while also pursuing a new set of reforms to improve the education and health systems to increase human capital. This orientation of reforms is consistent with the main challenges identified in *Going for Growth* (OECD, 2008). Effective implementation, which is promoted by the COAG *via* seven working groups,[13] could yield important gains. According to the Productivity Commission, the competition and regulatory streams of the NRA could boost GDP by 2% in the long term and the human capital stream could boost GDP by 9%, two-thirds of which would come from a higher labour force participation and the rest from efficiency gains.

Figure 1.15. **Productivity growth**

Real GDP divided by total employment, per cent

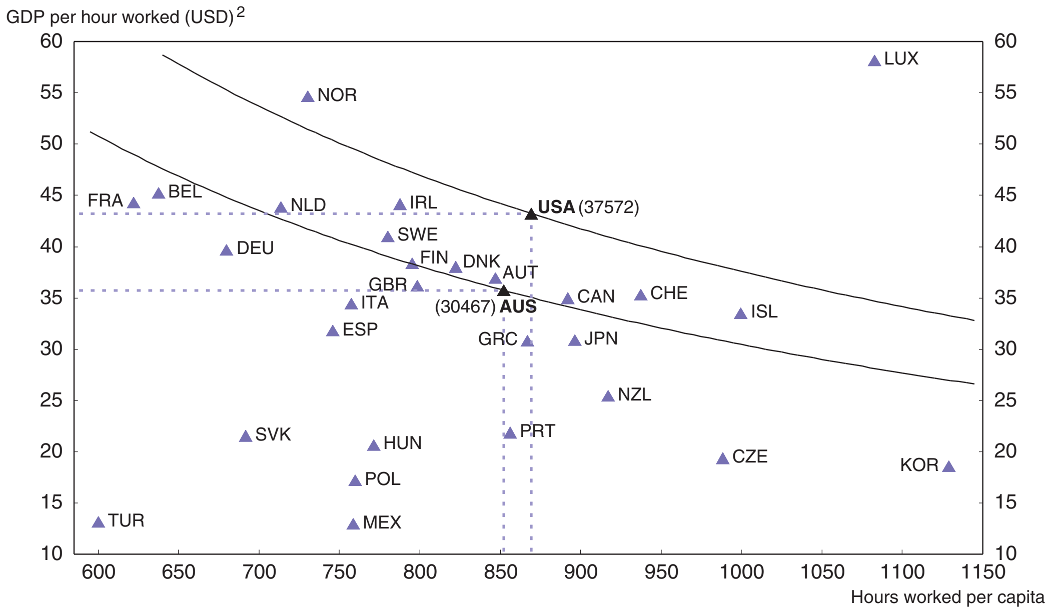


StatLink http://dx.doi.org/10.1787/471544032241

Source: (2008), *OECD Economic Outlook: Statistics and Projections – online database*, No. 83, OECD Publishing; and ABS (2008), *Australian National Accounts: National Income, Expenditure and Product* (cat. No. 5206.0), Australian Bureau of Statistics.

Figure 1.16. **Labour utilisation and productivity**[1]

2006



StatLink http://dx.doi.org/10.1787/471535680855

1. The curved lines running through Australia and the United States represent contributions of labour utilisation and productivity that correspond with the same level of GDP per capita (shown in parentheses). For instance, Finland has the same GDP per capita level as Australia but achieves this with lower labour utilisation and higher productivity.
2. GDP in constant prices in US dollars using 2000 purchasing power parities.

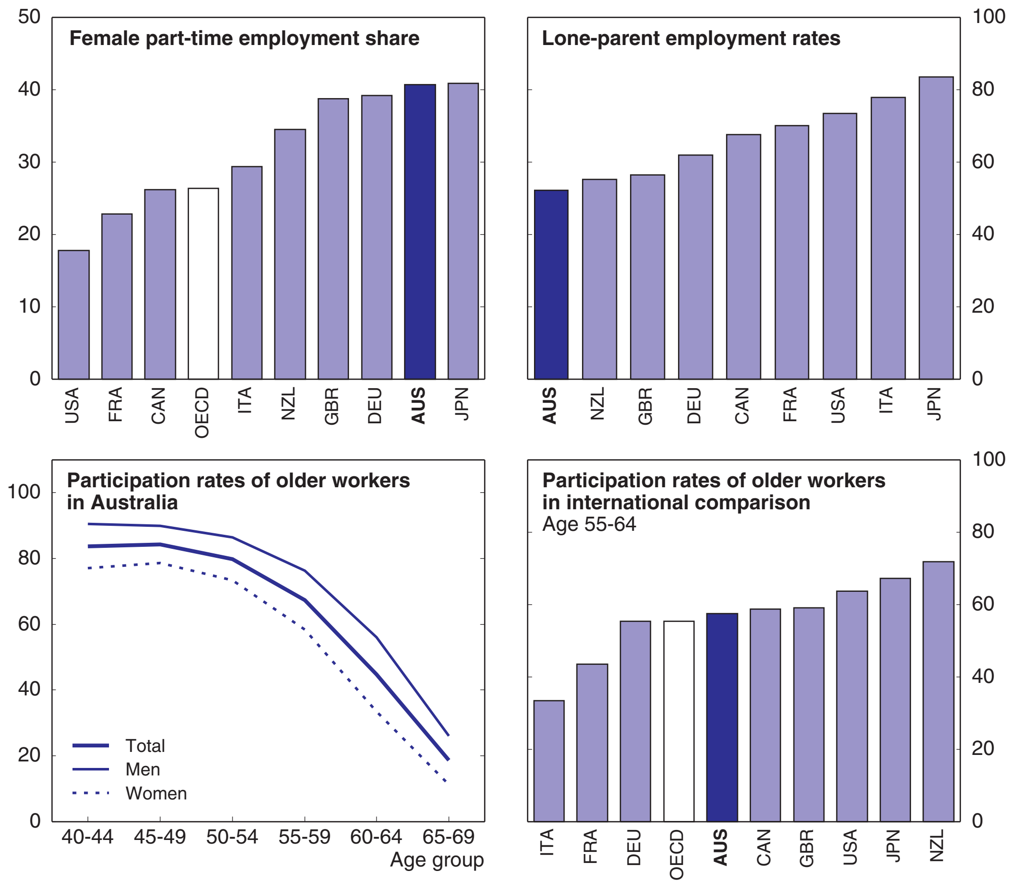
Source: OECD (2007), *Productivity database*, December.

Raising labour supply

Australia's overall participation rate is at a record high, and above the OECD average. Labour supply can be raised further, however, to levels achieved by the best performing countries. Estimates by the Australian Bureau of Statistics suggest that around one million individuals (approximately 9% of the labour force) were classified as unemployed or underemployed (employed persons who would like to work longer hours than they currently do) in September 2007.[14] The scope for increasing labour supply is greatest among women with families, lone parents and older workers (aged over 55 years), especially those on disability benefits. While female participation has increased markedly over the past two decades, female employment remains below the highest ranking countries. Part-time work accounts for over 40% of total female employment, so effective labour supply is even lower (Figure 1.17, upper panel). "Activating" lone parents and other parents in families with children receiving income support is an issue of major concern. Encouraging early retirees to stay at work longer would also add greatly to the workforce. Despite a much faster rise since the beginning of the decade, the participation rate of older workers remains below the OECD's best performers due to a pronounced exit from the workforce from age 55 – well before the pension eligibility age (Figure 1.17, lower panel). Eligibility requirements for pension payments, as well as welfare benefits, especially Disability Support Pension, are important influences on early retirement decisions. More than half of all disability benefit recipients in 2007 were aged 50 to 64. As with lone parents, the employment rate of people

Figure 1.17. **Labour market indicators**

Per cent, 2006[1]



StatLink http://dx.doi.org/10.1787/471570382477

1. Or latest year available for the lone parent employment rates: 2001 for Canada, Germany, Italy and Japan; 2005 for France and the United States. See Chart 3.7 in the *Babies and Bosses* synthesis for detailed notes.

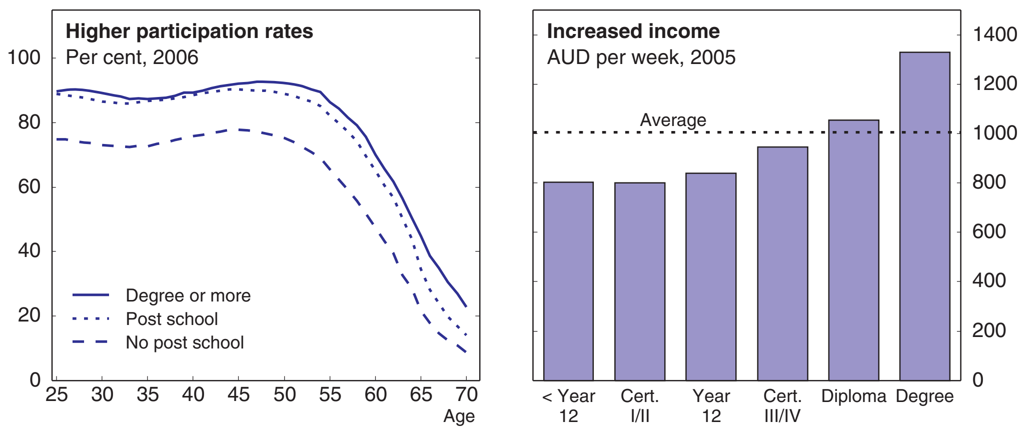
Source: OECD (2007), *Babies and Bosses: Reconciling Work and Family Life, A Synthesis of Findings for OECD Countries*, OECD Publishing; and OECD (2007), *Labour Force Statistics database*.

with a disability ranks low in international comparison, despite strong growth over the last two decades, at half the level of those without disability (Chapter 2). The chapter also considers the case for higher immigration of skilled workers. Immigration remains an important contributor to labour supply, alleviating skill shortages.

Improving the performance of the education system

High educational standards are of major importance for raising productivity and living standards in the face of increasing international competition and an ageing population. Differences in labour force participation rates and earned income in relation to educational attainment provide evidence in this regard (Figure 1.18). The promotion of a high-quality education system that responds swiftly to changing skill needs is a top priority of the new government (Chapter 3). The "Education Revolution" pursues reforms across the whole education system, an important objective being the closing of the gap for the indigenous population. The Australian education system fares well in international comparison with regards to the Programme for International Student Assessment (PISA) test scores of 15 year-olds and the number of foreign university students. Important challenges remain however in all education sectors, especially in the critical sector of early childhood education and care, where complexity and fragmentation raise concerns about variation in service quality and access. Participation in pre-primary programmes remains well below the best performing countries, with disadvantaged children – those with the highest payoff from early childhood education – being more likely to miss out. Australia also spends little on pre-primary education. Scope for quantitative and qualitative improvements also exists in the school sector. Completion rates at upper secondary schools should be increased further and the achievement gaps of the lowest performing students should be reduced. Strong productivity growth is closely related to the capacity of the Vocational Education and Training system to address current skill shortages and strengthen the skills base for the future. Finally, a less rigid policy framework for higher education would promote flexibility and diversity, making the system more responsive to globalisation challenges. The ongoing review of higher education (Bradley Review) should be a useful vehicle for monitoring the performance of the system, helping to identify potential reform areas (Australian Government, 2008a).

Figure 1.18. **The benefits from higher education attainment**



StatLink http://dx.doi.org/10.1787/471573231424

Source: Australian Government, 2008-09 Budget, *Budget Overview*, *www.budget.gov.au*.

Enhancing the functioning of product and labour markets and improving water management

Flexible markets, which allow for a smooth re-allocation of resources, are necessary to maintain good economic performance. In the labour market, the need for flexibility has also to take into account equity issues. The amendments to the WorkChoices law, which promoted the individualisation of industrial relations, provide evidence of the difficulty to find the appropriate balance in this domain. Chapter 4 assesses the renewed reforms, which aim to shift this balance in the direction of equity. In the current circumstances however, the authorities need both to avoid the risks of contagion from wage hikes in booming industries or regions on the rest of the economy, and to facilitate the reallocation of labour to the most profitable sectors. Chapter 4 also reviews the room for enhancing the functioning of product markets, which is an important aim of the NRA. The successful reforms introduced in this domain since the beginning of the 1990s should continue to improve existing regulations, cut red tape and to reap the benefits of technological changes in the freight and broadband Internet sectors, for instance. It is also important to reduce the geographical segmentation of markets resulting from disparate regulations of the states. This fragmentation affects not only some specific sectors such as energy, freight and water, but also a wide set of regulations in areas such as workplace health and safety, the environment and consumer protection (Chapter 4).

The need to improve, co-ordinate and harmonise regulations across states is particularly acute in the water sector. Water management issues have come to the fore, because of the exceptional drought that has lasted since the early 2000s. It is necessary to put an end to the over-exploitation of this resource and its harmful environmental effects and to use it more efficiently both in rural and urban areas. The likely reduction of water resources due to climate change and the foreseeable increase of demand pressures for demographic reasons reinforce the need for reforms in this sector. Strengthening market mechanisms appears especially desirable, even if they are already more widely used than in most OECD countries. A plan, *Water for the Future*, has recently been launched by the government in response to these challenges (Chapter 5).

Recent reforms in federal-state relations are commendable

Given the vast set of domains where the federal government and the states have shared responsibility, progress in the authorities' ambitious reform agenda depends crucially on a close co-operation between the different levels of government. A new framework for federal-state financial relations was agreed by COAG in March 2008 that fosters co-operation, rationalises the funding system and enhances accountability. The new framework reduces the complexity of the specific-purpose payments, through the reduction in the number of such payments, without a decline in total funding. The new funding arrangements will be focused on outcomes and outputs,[15] instead of being centred on input controls, yielding benefits in terms of improved use of state resources and incentives to service providers to raise efficiency, as well as reducing administration and compliance overheads. Accountability will be raised by public performance reporting. These reforms are commendable, and in line with the recommendations of the 2006 *Survey*. A more simplified pattern of joint government involvement, through a clarification of government roles and responsibilities, and a less complex and inflexible funding framework was warranted as a means to reduce incentives for cost and blame-shifting between government levels and to improve efficiency and co-operation. An additional important driver of reforms under the new system is the provision of National Partnership payments. They are in addition to existing funding, to support specific projects or to reward those states that deliver on reforms of national importance (Australian Government, 2008b).

Notes

1. According to recent estimates by the Australian Treasury, the structural unemployment rate was 4¾ per cent in 2007 (Kennedy, 2007). According to the OECD, the figure is approximately 5%.
2. The weight of financial and insurance costs in the consumer price index (CPI) is 9½ per cent, three times as high as in the major OECD countries on average. Prices for this expenditure group were estimated to have grown by 9.9% over the year to the June quarter of 2008, but this was boosted by an upward level adjustment that was made in the June quarter, to correct for earlier errors.
3. The RBA's inflation target is set on average over the cycle for the total CPI. The term "on average" is stipulated because it is important to allow for temporary price swings. Indeed, monetary policy does not seek to limit short-term fluctuations, insofar as that might destabilise the economy, but rather to keep future developments in check. To this end, the Bank uses statistical indicators, such as measures of core inflation, to assess the trend. These measures themselves are not the target variables. In the medium term, however, they move in parallel with total inflation. It is more useful for anticipating the reactions of the monetary authorities to analyse core inflation indicators than to analyse total inflation (Stevens, 2008b).
4. Reacting to the financial market crisis, the government strengthened consumer protection against the risk of default by financial institutions, announcing the creation of a federal plan to guarantee deposits – the Financial Claims Scheme. This will allow depositors to recover up to AUD 20 000 of their funds immediately. According to the government, 80% to 90% of deposit account balances would be refunded, if an institution went bankrupt. Until now, Australia was one of the only countries, along with New Zealand, that lacked a deposit guarantee scheme.
5. Although Australia is a major exporter of commodities, it also imports a significant part of its needs for these types of products, in particular mineral fuels. Commodity imports represent around 15% of total goods and service imports.
6. Also worth noting is that the revenue forecasting methodology was improved in the 2005/06 Budget to better reflect that the growth in tax revenue is significantly more responsive to growth in nominal incomes than thought earlier.
7. Since 2000, job creation has been greater at the state and local level (up by 14.3%) than at the federal government level (up by 7.4%). In 2005, central government jobs accounted for 11.4% of total government employment, whereas those of the states and local governments accounted for respectively 77.0% and 11.6% (OECD, 2007).
8. These estimates of the change in this "structural" budget balance are independent of the reference period used for the long-term value of the terms of trade.
9. Projected increases in government expenditure were also tempered following refinements to the model for long-term forecasting of health care costs (Gruen and Thomson, 2007).
10. Whether or not they are financed by resources accumulated in the three funds, future outlays will reduce the federal budget balance on a national accounts basis. The expected use of these funds should therefore induce lower government surpluses in the years ahead that are not reflected in the budget projections.
11. At the current rate of exploitation, iron ore reserves can be expected to last 100 years, those of bauxite and black coal 150 and 200 years respectively and those of lignite 450 years.
12. The severe drought of the past years has penalised the agricultural sector while the strong price increase in the mining industry has made the extraction of minerals that are more difficult and costly to produce profitable. The depletion of oil and gas reserves in some areas has further exacerbated the productivity decline.
13. These seven working groups, which are chaired by federal ministers and include representatives of all states are the following: *i)* health and ageing; *ii)* the productivity agenda (education, skills, and training and early childhood); *iii)* climate change and water; *iv)* infrastructure; *v)* business regulation and competition; *vi)* housing; and *vii)* indigenous reform.

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14. The extent of underutilisation is reduced to 5.2% when the quantity of extra hours potentially on offer is used rather than a simple head count (ABS, 2008).
15. For each service being delivered, governments have a number of objectives that relate to desired outcomes for the community. To achieve objectives, resources (inputs) are transformed into services (outputs). An outcome is the impact of the service on the status of the community (all individuals or a target group), and a measure of the success of the government in achieving its objectives.

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ANNEX 1.A1

Progress in structural reform

This annex reviews action taken on recommendations from previous *Surveys*. Recommendations that are new in this *Survey* are listed in the relevant chapter.

Recommendations	Action taken since the previous Survey (July 2006)
Product market competition	
Enhance competition	
• Address the unfinished business of the National Competition Policy (NCP) agenda and extend competition and efficiency enhancing reforms to new areas. • Avoid slipping of reform timetables. Where delays continue to be excessive, further intervention by the Commonwealth would be appropriate.	In 2006, the National Reform Agenda was adopted to complete the unfinished business of the NCP. It was broadened in March 2008 and its implementation speeded up in July 2008. The plan to harmonise regulations between jurisdictions has been expanded from 10 to 27 hot spots. Decisions have been taken in 14 areas to implement this plan.
• Explore ways of ensuring cost-effective and timely investment decisions in regulated network sectors that operate across several jurisdictions. Evaluate infrastructure projects on the basis of rigorous cost-benefit analyses.	An Infrastructure Fund was created in the 2008 budget. A federal department of infrastructure was set up, along with an advisory committee, Infrastructure Australia. By early 2009, this committee will draw up a list of infrastructure development priorities to guide public and private investment. Investment projects financed by this fund will be subject to rigorous cost/benefit analysis.
• Reduce uncertainty about the abuses of a dominant position and avoid overly legalistic analysis of the significance of market power.	The government has clarified the definition of market-power abuse. In the event of predatory pricing practices, it will no longer be necessary for small and medium-sized enterprises (SMEs) to prove that a guilty firm has recouped its losses. The cost of taking legal action by SMEs has been reduced.
Increase competition in specific sectors	
Establish an integrated reform agenda within a co-operative framework covering all elements of land and shipping transport: • Implement national land transport reforms planned under the AusLink framework to ensure long-term investment and better integration of the network. • The current road pricing methodology should be refined to reduce any undercharging of heavy vehicles. A mass-distance road pricing regime should be introduced. • Competitive neutrality of the freight transport industry should be improved to ensure an optimal allocation of freight transport tasks to the most cost-effective transport mode.	Following the adoption of the Auslink plan in mid-2007, an agreement was reached between the federal government and the states on the planning and funding of the investment projects. A second phase of the plan, extending the investment effort until 2013 with funding of 0.3% of GDP per year, has been announced. In 2006, COAG signed the Competition and Infrastructure Reform Agreement to simplify the regulation of nationally important infrastructure, and to harmonise state road and rail regulations within five years. In 2007, a timetable was established for adjusting state access regimes for rail and port infrastructure by end 2008. In 2007, COAG agreed on a gradual reform of road haulage pricing. In an initial stage, the reform will end the implicit subsidisation of the heaviest vehicles. In March 2008, COAG decided to speed up the harmonisation of rail safety regulations.
Competition in postal services should be promoted	No action.
Stronger efforts should be devoted to the implementation of a fully competitive national electricity market, including full retail contestability. In particular: • Abolish existing retail price regulation. • Improve grid interconnection and intensify competition in electricity generation by setting better incentives for investment in transmission and generation. • Resolve outstanding regulatory inconsistencies arising from the earlier co-existence of state and national regulators in the electricity and gas sectors. Once efficient market structures have been established, privatise public generation firms.	COAG established a national regulator (the Australian Energy Regulator) in 2005 and an agency (the Australian Energy Market Commission to develop and harmonise regulations across the country. The powers of these regulators have been enlarged. Beginning in 2009 a new single operator, the National Energy Market Operator, will formulate a national plan for developing the network over a ten-year time frame. The New South Wales government announced at the end of 2007 its intention to privatise its marketing and generation enterprise. The COAG has decided to lift the ceilings on retail electricity rates for low-volume consumers in states where there is effective competition in the retail market. Because this condition is met in Victoria, it was recommended to eliminate the ceiling in early 2009.

Recommendations	Action taken since the previous Survey (July 2006)
Improve the greenhouse gas (GHG) abatement framework	The new federal government has ratified the Kyoto Protocol and committed to reduce GHG emissions by 60% from the 2000 level by 2050. An Emission Trading System will be introduced in 2010. The amount of electricity generated from renewable energy sources will be raised up to 20% by 2020. Other major aspects of this strategy will be settled by late 2008.
The water reform agenda should be completed • The security of water access entitlements should be improved and water trading encouraged, in particular between rural and urban areas. • Cross-subsidisation of water use between urban and rural users and between different types of agricultural users should be phased out. Price setting should reflect the scarcity of water and environmental externalities. • Accelerate rural water reform through better specification, enforcement and trading of water property rights, as well as the determination of appropriate environmental allocations.	With an AUD 12.9 billion budget to run for ten years, the *Water for the Future* plan aims to establish the foundations for sustainable water use in the farm sector. It focuses on the management of the Murray-Darling Basin (MDB), where water use for agriculture is the most intensive, but also includes urban water management and supply. The main points of this reform are: *i)* develop a national information system of water resources; *ii)* modernise irrigation infrastructure; *iii)* solve the problem of over-allocation of utilisation entitlements in the MDB; *iv)* improve governance of the MDB; *v)* improve urban water supply and management.
Labour markets	
Raise the employment of second earners, older workers, the disabled and lone parents:	
• Reduce further high effective marginal tax rates for low income families, with a particular focus on addressing "low wage traps". Monitor closely the enforcement of the eligibility and participation requirements.	The personal income tax was reduced in the 2007 and 2008 budgets. A wide-ranging review of taxation has been launched.
• Introduce tighter eligibility criteria for existing recipients of Disability Support Pension and Parenting Payments, in line with those introduced for new applicants in July 2006.	No action taken.
• Maintain efforts to provide employment services to people on welfare benefits to help them find a job.	A national strategy is being developed to address barriers faced by the disabled in finding work. This is accompanied by public consultations on a new approach to employment services, with a strong emphasis on "work readiness" and tailored case-management for job seekers.
• Continue efforts to facilitate access to affordable child-care facilities. Change the structure of Child Care Benefit (CCB) to reflect the age-related cost profile of child-care provision. Make CCB more conditional on employment.	The CCB was raised in 2007. The 2008 budget provided for an increase in the Child Care Tax Rebate and the Baby Bonus. The budget also introduced stricter eligibility criteria for the CCB and the Baby Bonus. Consultations on a national parental leave scheme are under way.
• Encourage older workers to continue working after retirement age by excluding earned income from the Age-Pension income test or by easing the income-test taper further. Reduce incentives to retire early under the Superannuation Guarantee scheme by aligning the eligibility age with the Age Pension.	The 2007 "Simplified Superannuation" reforms, introduced significant changes to the superannuation system, including the abolition of the taxation of superannuation benefit. The asset test taper rate for the Age Pension was halved in September 2007.
Assess the effects of the *WorkChoices Act*, and explore options for further reforms: • Simplify the system further. Review the rationale for maintaining the award system. Awards should be either phased out or rationalised further in terms of their number and content. • Harmonise state and federal industrial relations arrangements. More states could also refer their industrial relations powers to the federal government. • Opt-outs from awards and collective agreements should be supported, if the employees and employer agree.	The new government has phased out some aspects of the WorkChoices Act and made additional changes to industrial relation law. The main features of the proposed changes include: • Enlarging the safety net laying down minimum terms of employment and wages. • Strengthening collective bargaining and banning Australian workplace agreements (AWAs). Seeking to implement a uniform nationwide system of industrial relations in the private sector, reducing the number of awards and creating a single regulator, Fair Work Australia.

Recommendations	Action taken since the previous Survey (July 2006)
Education and training	
Broaden the secondary school curriculum to reduce the risk of early school leaving and integrate the vocational education and training sector better. Strengthen vocational education and training to raise the skill levels of the low paid.	The Trade Training Centres in Schools programme is expected to improve Year 12 attainment rates.
Improve educational outcomes and opportunities to facilitate the school to work transition.	The "Education Revolution", backed by COAG, pursues reforms across all education sectors, an important objective being the closing of the gap for the indigenous population.
Train and up-skill persons already in work, particularly older workers.	The Skilling Australia for the Future reform features measures to increase the skills of the workforce.
To keep the sector internationally competitive, improve the responsiveness and quality of higher education, particularly the quality of teaching and learning and governance and workplace relations in universities. Increase the responsiveness of the sector to labour market needs.	The 2008 budget raised the funding for the upgrading of teaching and research. The Education Investment Fund will provide financing for capital investment in higher and vocational education and training. The government has removed the workplace relations and governance conditions attached to federal funding.
Aggregate fiscal policy	
The government should aim for small surpluses when the economy is operating at or close to potential. In the short term, save any revenue windfalls from a further rise in commodity prices rather than using them for tax cuts or spending initiatives. Let the automatic stabilisers work by allowing temporary modest fiscal deficits in the event of a pronounced fall in the terms of trade and a downturn in activity.	The Australian government has run budget surpluses of around 1% of GDP since 2002/03, which is projected to continue over the next four years. The authorities have pledged to let the automatic stabilisers operate and to use any unexpected revenue gains to increase the budget surplus. Since its election, the new government has used revenue windfalls to improve the fiscal balance.
Taxation	
Tax reform should aim at: • Lowering high marginal tax rates and raising the threshold at which the maximum marginal income tax rate cuts in. • Abolishing distortionary state taxes and reforming the payroll tax. • Reducing the complexity of the tax law • Raising the Goods and Services Tax take. The tax-free status for superannuation benefits from age 60 should be assessed if "double dipping" becomes important.	The 2008 budget cut the 40% marginal tax rate to 37% in 2010, and raised the 30%, 40% and 45% thresholds. The states have proceeded with the abolition of most business-related state taxes. Harmonised payroll tax administration has been introduced in July 2008. The government has announced a broad review of the tax system, to be concluded by end 2009.
Federalism	
Reforms in federal-state relations should aim at: • Simplifying the pattern of joint government involvement through clarification of government roles and responsibilities. • Reducing the complexity and enhancing the flexibility of the specific-purpose payments.	A new framework for federal-state financial relations was agreed by COAG in March 2008. It fosters co-operation, rationalises the funding system, enhances accountability and aims to clarify roles and responsibilities. The new framework reduces the complexity of the specific-purpose payments, without reducing funding. The new funding arrangements will be outcomes and outputs, rather than input, based.

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Chapter 2

Raising labour supply

Australia faces the challenge of increasing labour supply to sustain growth in view of rising skill shortages and population ageing. Priority should be given to improving incentives to work for groups with the greatest scope to raise supply, such as women with families and lone parents, disability benefit recipients and older workers over 55. Immigration remains an important contributor to labour supply, helping to alleviate skill shortages. Given the high skill level of Australia's immigration intake, the adequate use made of immigrants' human capital is a matter of key importance. A significant challenge lying ahead is to remove potential barriers to increased immigration.

Meeting the supply potential

Australia is in a situation of historically low unemployment, with labour force participation at a record high and above the OECD average. Yet, Australian Bureau of Statistics (ABS) estimates suggest sizeable underutilisation of labour resources (Chapter 1). This chapter takes stock of policy initiatives since the 2006 *Survey* to improve incentives to work in the areas of the tax/benefit system, child-care services and retirement income arrangements, examining in each case the need for further policy change.

The interaction of the tax and welfare systems could be improved further

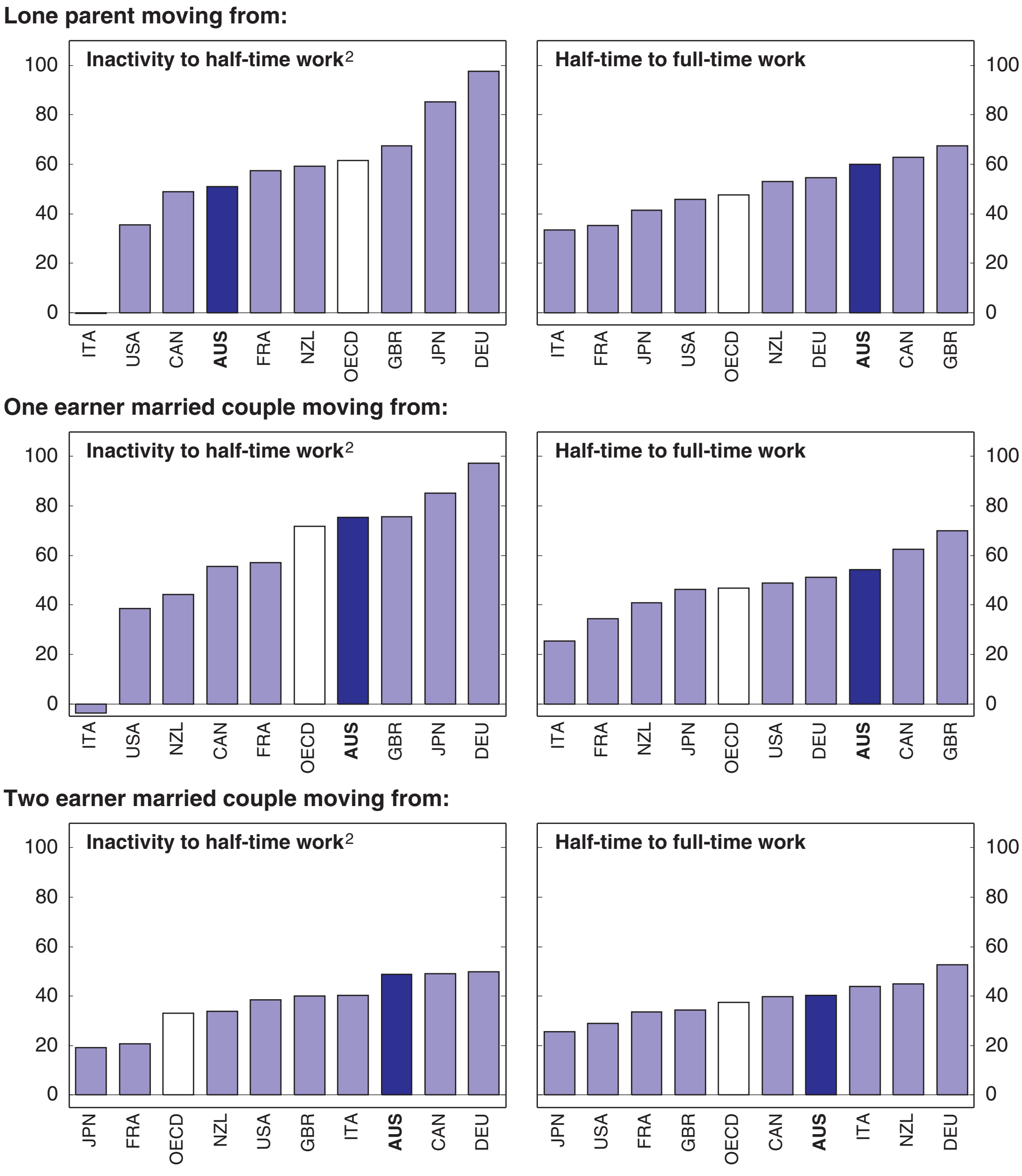
The comprehensive targeting of the social security system yields gains in terms of cost effectiveness and redistribution.[1] It can also create significant employment disincentives, however, by resulting in high marginal effective tax rates (METRs). Empirical evidence suggests a higher degree of labour supply responsiveness to financial disincentives at low income levels, for single parents and for second earners (Creedy and Kalb, 2005).

METRs have declined in recent years. They can still be a problem, however, particularly for families with children, largely due to the impact of the withdrawal of family assistance.[2] Based on international comparisons, the 2006 *Survey* (OECD, 2006) attached priority to a reduction of "low wage traps" through, for example, a reduction in the lowest income tax rate or an increase in the threshold at which income tax is first paid (Buddelmeyer, Freebairn and Kalb, 2006). Attention was also drawn to "inactivity traps", the situation where employment, especially part-time employment, does not "pay"¸ particularly in view of the high prevalence of jobless households with children.[3] For lone parents and second earners, part-time jobs may provide a "stepping stone" to full-time labour market engagement. While METRs relevant to the transition from inactivity to part-time work are well below the OECD average for lone parents, they are above average in the case of one-earner, and especially two-earner, couples (Figure 2.1). Secondary earners are taxed more heavily in Australia compared to other countries, despite a system of separate personal income taxation. This is due to the withdrawal of family-related benefits. In most other countries means-testing is less common. That said, the *Survey* highlighted the unavoidable trade-off between "inactivity traps" and "low-wage traps" and the importance of clearly identifying the disincentive problems arising from different policy options.

The personal income tax cuts introduced since the 2006 *Survey* are expected to have strengthened work incentives. In particular, tax measures enacted in the May 2007 budget are officially expected to lead to a net increase in hours worked by existing workers and approximately 45 000 additional workers. Further tax cuts (AUD 46.7 billion over four years) provided by the 2008 budget under the *Working Families Support Package*, are estimated to encourage around 65 000 workers to enter the labour force (25 000 of whom will be married women and 10 000 single parents). Including additional supply of existing workers, this could imply around 2.5 million additional hours of work per week. The budget also introduced stricter means-testing for some family benefits. The net impact of

Figure 2.1. **Inactivity and low-wage traps: an international comparison**[1]

Marginal effective tax rates for families following a change in work status, per cent, 2006



StatLink http://dx.doi.org/10.1787/471616584202

1. This figure shows how much of the wage earned (or wage rise) following a change in work status is taken away in the form of higher taxes and lower welfare benefits. The results shown cover families with two children aged four and six. Hourly earnings correspond to the average wage level so a half-time employee would have earnings equal to 50% of an average wage. For married couples the percentage of average wage relates to one spouse only; the second spouse is assumed to be "inactive" with no earnings in a one-earner couple and to have full-time earnings equal to 67% of the average wage in a two-earner couple. Social assistance and any other means-tested benefits are assumed to be available subject to the relevant income conditions. No child-care benefits or costs are considered. The OECD aggregate is an unweighted average.
2. Results relate to the situation of a person who is inactive and receives no unemployment benefits. In-work benefits that depend on a transition from unemployment into work are available.

Source: OECD (2007), *Benefits and Wages* and OECD Tax-Benefit Models.

the budget measures on participation, however, is expected to be positive as the new welfare tests affect only a small proportion of families.

The activity rates of lone parents and women should be boosted further by the recent tightening of eligibility criteria for Parenting Payments introduced by the 2005 "Welfare to Work" reform package (OECD, 2006). The new requirements, in effect since July 2006, appear to be reducing the number of people commencing Parenting Payment. Moreover, people who face compulsory activity test requirements under the welfare reform package appear to be exiting income support earlier than their counterparts in previous years, who did not face such requirements. An increased number of those remaining on benefit are earning some income from work. These trends are encouraging, even though it will take time for the recent initiatives to significantly affect the broader population of income support recipients because the stricter conditions for benefits receipt are predominantly applicable to new entrants.[4]

Enhancing access to affordable quality child-care facilities

Progress made since the 2006 *Survey* in reducing the cost and increasing the number of child-care places is welcome, as the use of formal child care is still limited (Chapter 3). For children who are using approved care, the Australian government funds the Child Care Benefit (CCB), which provides fee relief for both working and non-working parents. The CCB rate varies depending on family income, the number of children in care and the type of the care used. A Child Care Tax Rebate (CCTR) for "out-of-pocket" expenses, in effect since July 2004, complements CCB (OECD, 2007a).

Following a rise by more than 13% in the CCB rates in 2007, the latest budget further improves the affordability of child-care facilities through an increase in the rate of the CCTR from 30% to 50% for out-of-pocket expenses for approved child-care costs, and by an increase in the cap on the rebate. On the other hand, the budget removed the minimum rate for higher-income families, effectively cutting their access to the benefit, though previous recipients maintain eligibility for the enhanced CCTR. Measures to reduce the burden of child-care costs for parents are complemented by initiatives to boost the supply of facilities through the establishment of 38 (out of 260 planned) child-care centres. There have also been some recent positive changes in the area of family friendly working arrangements. The inclusion in the National Employment Standards (to be implemented from January 2010 onwards) of a right for parents to request flexible working arrangements, if providing care for under school-age children, is commendable in this regard.[5]

Efforts to move disability pension recipients into work have progressed slowly

Disability Support Pension (DSP) recipients have increased considerably since the mid-1990s. Although the number of beneficiaries has levelled off, DSP recipients are currently accounting for around 6½ per cent of the workforce (Figure 2.2). Past reforms (including the gradual increase in the female retirement age), demographic changes and structural adjustment, which resulted in the displacement of workers (especially older males), have all influenced the number of DSP beneficiaries. The previous *Survey* argued that the DSP programme may be increasingly used as a substitute for the unemployment scheme, given the greater generosity of the benefit and the absence of requirements for job search or participation in rehabilitation or re-training programmes (OECD, 2006). The "Welfare to Work" reform package, in effect since July 2006, was designed to address this issue through stricter eligibility requirements for new beneficiaries.[6] Recent budget

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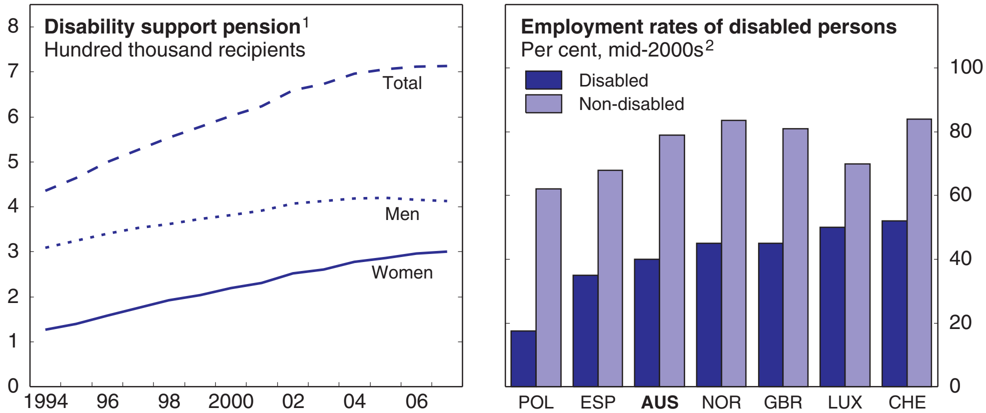
Figure 2.2. **Disability indicators**



StatLink http://dx.doi.org/10.1787/471624335745

1. Current and suspended customers in June of each year from Centrelink administrative data.
2. In per cent of the working-age population. Data for Australia are for 2003; 2004 for Luxembourg and Spain; 2005 for Norway, Poland and Switzerland; 2006 for the United Kingdom.

Source: OECD (2006 and 2007), *Sickness, Disability and Work: Breaking the Barriers*, OECD Publishing and Australian Treasury.

estimates for DSP spending have, nevertheless, exceeded expectations, indicating a slower than anticipated exit of recipients from the DSP programme. This may reflect the fear of DSP recipients of losing their entitlement to a pension if, after finding work temporarily, they lose it again. This highlights the need for an effective employment transition framework to help people with disabilities find a job (AFR, 2008), particularly in view of the low international ranking of Australia with regards to employment rates of people with a disability (Figure 2.2).

The new retirement income arrangements may have positive participation incentives for some

The "Simplified Superannuation" reforms, in effect since July 2007, introduced significant changes to the superannuation system.[7] They included the abolition of the taxation of superannuation benefit paid from a taxed source (where tax has been paid on contributions and earnings) for those over 60, and the non-inclusion of superannuation benefits in assessable income from that age. These initiatives, by reducing the tax paid on their work and other income, are expected to encourage older workers to remain in the labour force longer or undertake work, while also drawing down their superannuation (Australian Government, 2007). However, some may retire earlier because of the increase in retirement income. The halving of the assets test taper rate for the Age Pension (the tax-funded public pension) from September 2007 is also providing greater incentives for older workers to work and save.

What more needs to be done?

Despite strong growth, approximately 16.5% of the workforce receives welfare benefits, with the DSP and Parenting Payment recipients accounting for the largest share. The introduction of stricter eligibility criteria for the existing recipients of parenting pensions, in line with those applicable to new claimants (since July 2006), would be a step in the right direction. The government should further consider extending the tighter eligibility and participation requirements that apply to new recipients (since July 2006) of

DSP, to the stock of all recipients. The efforts of DSP recipients to find a job should not be impeded by the fear of losing their entitlement to a pension if, after finding work temporarily, they lose it again. The development of a national strategy is currently under way which will address the barriers faced by people with disabilities in gaining and keeping employment. According to a recent OECD study, mobilising the labour potential of all those on disability pensions wishing to work would have sizeable effects on long-term labour supply, resulting in a projected increase of some 5 percentage points (OECD, 2007b). Further investment in placement services will be required to this end. Public consultations on a new approach to employment services, with a strong emphasis on "work readiness" and tailored case-management for job seekers, are a commendable initiative. Enhanced financial incentives, through a further reduction in METRs, are of major importance for the labour market integration of welfare beneficiaries.

Increasing the supply of second earners also depends on improved access to affordable quality child care. Changes in the structure of Child Care Benefit to reflect the age-related cost profile of child-care provision are crucial for achieving better outcomes. The benefit should also be made more conditional on employment or job search, in contrast to the present situation where it is available for up to 24 hours for households where no family member works. Consideration by the government of the introduction of a paid parental leave scheme would bring Australia in line with international practice. A recent study by the Australian Human Resources Institute, contributing to the public consultation on the issue, concludes that a relatively large proportion of mothers return to work from organisations offering paid parental leave compared with their counterparts on unpaid leave. Moreover, most of the respondents believed that paid parental leave policy plays a role in attracting good candidates to the organisation (AHRI, 2008). The duration of leave is an issue of major importance. Very long parental leave could result in human capital depreciation, offsetting the potential benefits of the scheme in terms of a reduced length of breaks after child-birth and increased chances for women to return to their pre-birth job (OECD, 2007c). Finally, regarding older workers, incentives for early retirement would be reduced by aligning the eligibility age for superannuation (currently 55, but to be increased to 60 by 2025) with that of Age Pension (age 65) over time. Measures to reduce the penalties associated with combining Age Pension benefits with earned income, such as by excluding earned income from the Age Pension income test, or alternatively by further easing the income-testing, would clearly enhance work incentives at older ages (OECD, 2005).

Immigration: an additional potential source of skilled labour

Migration policy has put great emphasis on migration of skilled workers

Over the past decade Australia has sharpened its policy focus on skilled immigration by increasing the size of the Skill Stream within the annual permanent Migration Programme (Box 2.1). The change was accompanied by a refinement of the selection process. To ensure that primary applicants are job-ready upon arrival in the country, the threshold of the English language criterion was raised and the waiting period for access to the majority of Australian Government benefits and services increased from six months to two years. Two additional policy changes for skilled migrants include: an increase in points for applicants with skills in short supply, and the requirement that all applicants have their qualifications assessed before they are granted a visa. Australia has also pursued a deliberate policy of providing pathways for temporary skilled entrants to apply for

Box 2.1. **Migration arrangements: the main features**

The current set of migration arrangements, in place with little change since the early 1980s, distinguishes three basic types of visas: *i)* between permanent settlement and temporary stay; *ii)* between short-term and long-term temporary stays; and *iii)* whether holders of (short or long-term) temporary visas have the right to take up employment (see the special chapter on migration in OECD, 2003). The main visa classes that allow temporary immigrants to work include the Working Holiday Makers visa, the Business Visitors visa and the Business Long Stay visa. Only the permanent migrant flow is subject to an overall ceiling on inflows.

Permanent visas are awarded under the Humanitarian and Migration Programmes. The Migration Programme, accounting for the majority of permanent arrivals (around 80% in 2006/07), consists of two main streams: the Skill Stream and the Family Stream, with the former comprising a number of categories for prospective immigrants that relate to demand for particular occupational skills, outstanding talents or business skills. A key mechanism for administrating skill-based migration policy is the points test for migrant selection. This assigns points according to a number of characteristics, including the level of education and occupational work experience, age and English language ability. Bonus points are also awarded for meeting one or more of three attributes: skilled work experience obtained in Australia, capital investment in Australia, or fluency in one of Australia's major non-English community languages. An applicant succeeds when the total points reach a "pass mark" (Productivity Commission, 2006).

permanent visas onshore, including the opportunity for overseas students graduating from Australian institutions.

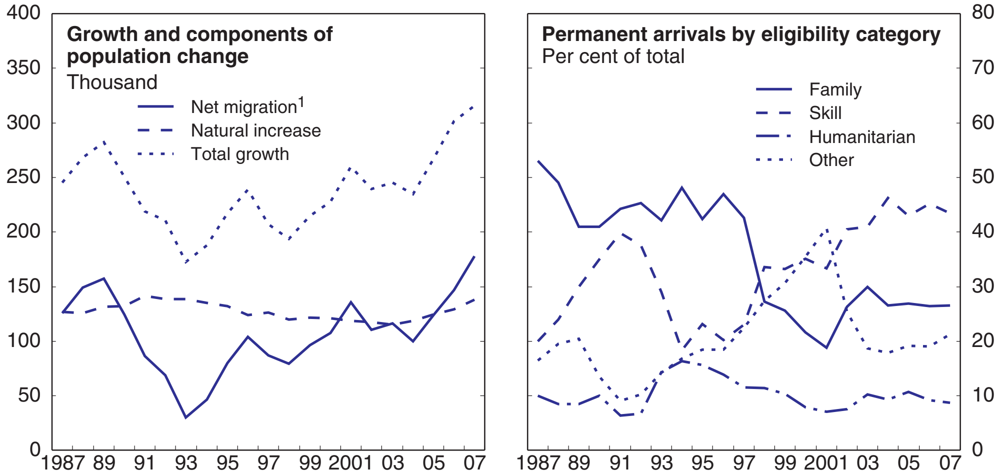
Net overseas migration has risen steadily since the mid-1990s, reaching its highest level thus far in 2006/07,[8] and continues to be the main contributor to Australia's population growth (Figure 2.3). Skilled immigrants accounted for just under half of all permanent arrivals (ABS, 2008). Notably, employer-sponsored categories have provided the greatest proportionate increase in the Skill Stream in recent years. In addition, the number of skilled immigrants with temporary visas has been on the rise, thus complementing the permanent immigration programme, in particular by alleviating skill shortages in specific areas (Australian Government, 2008). The number of primary temporary Business Long Stay visas (allowing employers to sponsor skilled workers on a temporary basis) increased by 24% between 2006/07 and 2007/08.

Enhancing the effectiveness of the migration programme to meet the demand for skills

Empirical research has concluded that Australia's selection programme has been successful in improving the general skill level of immigrants and enhancing their labour market outcomes (Productivity Commission, 2006). This assessment is reinforced by a comparison of the labour market experience of successive cohorts of immigrants since the early 1990s, based on the three Longitudinal Surveys of Immigrants to Australia. The increased emphasis on skills in the migration selection process over the past decade led to a marked improvement in the human capital endowment of new arrivals (Figure 2.4), which has translated into higher labour market integration rates, though changes in labour market conditions and income support policy also appear to have been instrumental

Figure 2.3. **Trends in migration**

Year ended 30 June



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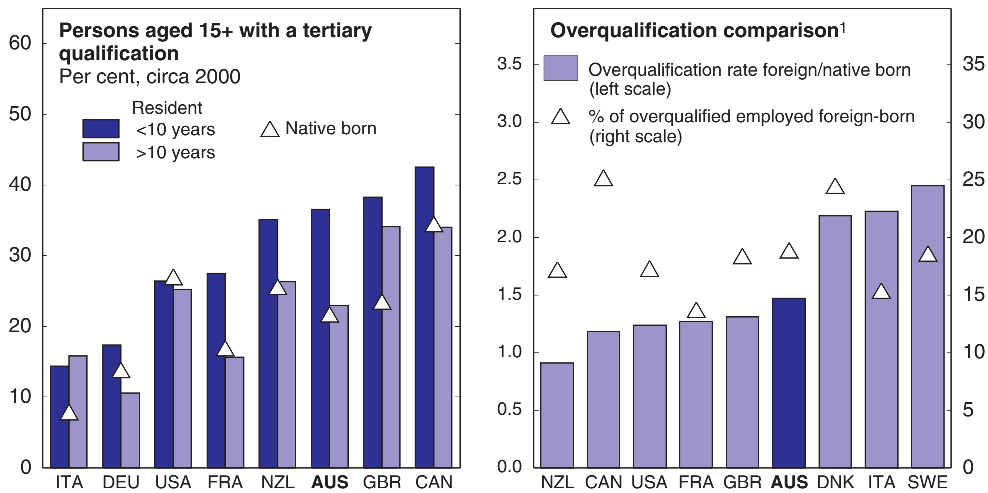
1. Break in series in 2007.

Source: DIAC (various years), *Settler Arrivals*, Department of Immigration and Citizenship; and ABS (2008), *Migration, Australia* (cat. No. 3412.0), Australian Bureau of Statistics.

Figure 2.4. **Education characteristics and overqualification of immigrants**



StatLink http://dx.doi.org/10.1787/471660870085

1. An overqualified individual is one who holds a job that requires lesser qualifications than one that would theoretically be available at his/her education level. Overqualification rates are calculated for individuals with intermediate or higher education.

Source: OECD (2008), *A Profile of Immigrant Populations in the 21st Century*, OECD Publishing.

(Cobb-Clark, 2004). ABS statistics confirm the importance of good English language skills and recognised qualifications (bachelor degree or higher) to the labour market success of recent immigrants (Table 2.1). On many criteria, notably unemployment, immigrants fare similarly to the Australian-born after ten years and much earlier for those in skilled categories (OECD, 2003).

Overall, Australia compares favourably in international comparison with regards to employment outcomes for immigrants, even after adjusting for the better qualification

Table 2.1. **Labour market outcomes for recent migrants**[1]

Per cent

	Unemployment rate	Participation rate	Employment rate
Australian born	4.1	68.7	65.9
Recent migrants (arrived after 1997)	5.0	71.9	68.4
All overseas born (regardless of period of residence)	4.1	60.0	57.6
Country of birth: recent migrants			
Main English speaking countries	2.5	81.3	79.4
Other	6.0	69.1	64.9
Pre-arrival qualification level			
Bachelor degree or higher	3.9	79.6	76.5
No post-school qualification[2]	7.2	59.9	55.6
Migration programme[3]			
Skill stream	4.7	82.6	79.0
Family stream	7.5	62.4	68.0

1. The term "recent migrant" relates to the migrant cohort which was born overseas, arrived in Australia after 1997, was aged 15 years or over on arrival and had obtained permanent Australian or temporary residence (if intending to stay for 12 months) status (excluding New Zealand citizens).
2. Estimate has a relative standard error of 25% to 50% and should be treated with caution.
3. Data for the Humanitarian steam are not available.

Source: ABS (2007), *Labour Force Status and Other Characteristics of Migrants* (cat. No. 6250.0), Australian Bureau of Statistics.

structure of immigrants compared to the native-born (OECD, 2007d). Immigration makes an important contribution to labour supply, with newly arrived immigrants accounting for about 30% of employment growth between 2001 and 2006 (RBA, 2007). However challenges remain:

- Labour market outcomes among recent immigrants from the main English-speaking countries and those from non-English-speaking countries remain distinct. The latter, accounting for three-quarters of immigrants, is less likely to have had a job after arriving in Australia.
- Overqualification (*i.e.* working in jobs/occupations for which the skills are too high) tends to be greater for immigrants. Australia is close to the OECD average on this score, and surveys confirm that job satisfaction is good among immigrants. However, highly qualified immigrants from non-English-speaking countries are particularly affected by the overqualification problem. Around half of them with degree qualifications achieved a professional or managerial outcome, according to the 2006 Census data. The 20-29 age group underperforms in relation to that of 30-64 year-olds, despite the fact that most in the younger group have obtained the degree in Australia, with the shares in professional or managerial jobs standing at 22% and 36%, respectively (Birrell and Healy, 2008).
- Employers have argued that the temporary business long stay visas (particularly, the 457 visa scheme), which are a significant tool to overcome short-term skill shortages, involve unnecessary processing delays and high compliance costs, an issue about which the Productivity Commission has also expressed concerns (Productivity Commission, 2007). Moreover, problems have arisen, related mainly to lower skilled workers in the regional visa streams, because employers breached procedures (McDonald and Withers, 2008).

Recent reforms of the migration programme

Given the high skill component of the immigration intake, the adequate use made of immigrants' human capital is a matter of key importance, especially in light of chronic skill shortages. Recent reforms of the migration programme (in effect since September 2007) include a higher minimum standard of proficiency in English for professional occupations and the need for work experience in the case of former overseas students. These reforms go in the right direction. Efforts to increase employer-sponsored migration are also welcome. Evidence from the third Longitudinal Survey of Immigrants to Australia confirms the better occupational outcomes for highly qualified immigrants (principal applicants), where employers play a role in providing a predetermined job for the incoming immigrants (Birrell and Healy, 2008). Moreover, the skills assessment process for prospective immigrants from five main source countries was streamlined.

Regarding temporary immigration, current reforms aim to improve the responsiveness of the temporary business (subclass 457) arrangement. The reform will reduce the visa processing time through the establishment of an accreditation system and the fast-tracking of applications for "low-risk" employers (with a good record of compliance with immigration and industrial relation laws) and the elimination of elements of duplication that exist in the visa processing system (ERG, 2008). The 2008 budget allocated AUD 20 million over the next four years to improve the integrity and responsiveness of temporary working visas, including developing a framework for longer-term reform to help meet future labour market needs.

What more needs to be done?

Further reforms of the assessment and recognition system seem necessary. A better over assessment and recognition of foreign qualifications and experience would limit exposure to overqualification. Australia has an elaborate assessment and recognition system that generally meets its objectives. But there is scope for improvement, especially with regard to the complexity of the current regime, which may lead to inconsistencies in the assessment criteria and processes underlying the regime. The need for a more uniform approach to occupational/professional licensing and registration across the states was highlighted by the Productivity Commission. Addressing, where feasible, the gap between migration and employment assessments, implying that immigrants are faced with additional assessment and accreditation obligations for practicing their occupation in Australia, is also on the reform agenda, as is the greater dissemination of information to prospective immigrants on the skill recognition process (Productivity Commission, 2006). The Australian Skills Recognition Information website, launched in 2006, is a welcome initiative, helping immigrants to understand the assessment process and integrate more swiftly in the Australian workforce. Options are also being developed to streamline skills recognition procedures that require assessment and licensing before immigrants can work in their occupation in a particular state (Jones, 2007). To this end, the Council of Australian Governments (COAG) agreed in July 2008 to develop a national trade licensing system that will remove inconsistencies across state borders, allowing for a much more mobile workforce. The new national system is expected to be signed off by COAG in December 2008.

A further study is warranted to assess the longer-term impact of the two-year waiting period before immigrants become eligible for income support on immigrants' occupational patterns. Research suggests that this policy change had a positive impact on the probability of immigrants to find a job, but a negative effect on their probability to hold a job that matches their qualification (Junankar and Mahuteau, 2005). The key question in this context is whether the initial occupational downgrading of immigrants has any long-lasting negative impact on their career prospects.[9] If there were strong long-lasting adverse consequences, it would make a case to reconsider the length of the waiting period.

Long-term challenges facing migration policy

Migration will remain an important tool to address skill shortages, although it is only one component of a broader skills strategy (Chapter 3). Against the backdrop of Australia's demographic trends, future labour requirements will increase demands for growing migration (ERG, 2008). Current government policy supports higher immigration levels. The 2008 budget increased the Skill Stream of the Migration Programme by 30% in 2008/09 to 133 500 places (compared to 34 600 places in 1997/98). This increase is expected to deliver fiscal benefits, in addition to addressing skill needs in the short run. A recent study by McDonald and Withers (2008) estimates that net migration would have to climb to 316 000 in 2051, from 160 000 in 2006, to keep labour force growth constant at 1% per annum.

Given the effectiveness of the current migration policy in terms of labour market integration and contribution to labour supply, and in view of empirical findings that most immigrants create net fiscal benefits (OECD, 2003), the government's approach is justifiable. Evidence further suggests that, to date, overseas migration has responded more quickly to job opportunities than interstate migration flows, implying that there is a merit in targeting skilled migration to particular geographical areas with acute skill shortages (Henry, 2008). However, further increases in migration need to be considered in the context of infrastructure and service delivery constraints, which tend to be more apparent in regions where there is rising demand for skilled labour linked to major infrastructure and mining projects. Housing availability and affordability, and education and health services are important examples in this regard. Moreover, given an increasingly internationally mobile labour force, Australia competes with other countries for skilled immigrants. At the same time higher immigration must not come at a cost of delaying the upskilling of the domestic population. Overall, further increasing the country's skilled migrant intake would require that migration policy should be pursued as part of a broad strategy for population growth, including issues such as the tax/benefit system, education, water, infrastructure and the environment (McDonald and Withers, 2008). An additional challenge is to attract immigrants to non-urban areas where they are most needed.

Summing up

Australia is in an enviable position. Unemployment is at historically low levels, and labour force participation is at a record high. Yet, labour market outcomes still lag behind the leading OECD countries. There is much scope for improving incentives to work for women with families and lone parents, disability benefit recipients and older workers over 55 through further policy changes to the tax/benefit system, child-care services and retirement income arrangements. Immigration will remain an important contributor to labour supply, assisting to alleviate skill shortages. Further rises in migrant intake, however, should be considered in the context of infrastructure and service delivery constraints, and increasing international competition for immigrants. Importantly, migration policy is only one component of a broader skills strategy, with investment in education and training being the primary means. Given the high skill component of Australia's immigration intake, using immigrants' human capital better is a matter of key importance. Box 2.2 summarises the recommendations of the chapter.

Box 2.2. **Recommendations to raise labour supply**

Improving incentives to work

- As there is fiscal room, cut marginal effective tax rates further to reduce the number of people caught in a "low wage trap" by reducing, for example, the lower rates of income tax and/or raising the tax free threshold. Reduce "inactivity traps" for one-earner, and especially, two-earner couples.
- Consider extending the tighter eligibility criteria that apply to new recipients (since July 2006) of Parenting Payments to all recipients, monitoring closely the enforcement of eligibility and participation criteria.
- Extend the tighter eligibility criteria applying to new recipients (since July 2006) of the Disability Support Pension (DSP) to all recipients, monitoring closely the enforcement of eligibility and participation criteria. Efforts of DSP recipients to find a job should not be impeded by the fear of losing their entitlement to a pension if, after finding work temporarily, they lose it again. The development of a national strategy to address the barriers faced by people with disability and/ or mental illness in gaining and keeping employment is a welcome step. Further investment in placement services will be required to this end.
- Proceed with plans to reform the employment services, taking into account the outcomes from public consultations.
- Continue efforts towards facilitating access to affordable child care. Consider changing the structure of the Child Care Benefit (CCB) to reflect the age-related cost profile of child-care provision. CCB could be made more conditional on employment and the use of child-care services by restricting its payment to the families where both parents (or a single parent) work (or search for work) and use such facilities. The introduction of a paid parental leave scheme would bring Australia in line with international practice.
- Reduce incentives for early retirement by aligning the eligibility age for superannuation (currently 55, but to be increased to 60 by 2025) with that of Age Pension (age 65) over time. Measures to reduce the penalties associated with combining Age Pension benefits with earned income, such as by excluding earned income from the Age Pension income test, or alternatively by a further easing in the income-testing, would clearly enhance work incentives at older ages, though the attendant fiscal costs should be closely monitored.

Migration

- Pursue the current policy of favouring a high level of migrant intake as part of a broad strategy to meet skill shortages. Implement swiftly the announced reforms aiming at improving the integrity and responsiveness of the temporary business (subclass 457) arrangement.
- Ensure that adequate use is made of immigrants' human capital. Reduce the complexity of the current assessment and recognition of overseas qualifications, by moving toward a more uniform approach to occupational/professional licensing and registration across the states, and address, where feasible, the gap between migration and employment assessments.

Notes

1. For a discussion, see Whiteford (2006).
2. A study by Kalb (2007) has found that sole parents and couples with dependent children account for around 60% of those people that face METRs in excess of 50%.
3. Jobless families accounted for 13.5% of families with children under 14 years old in mid-2007, raising major welfare concerns about the half million children living in such households.
4. For people who were in receipt of Parenting Payment prior to 1 July 2006, activity test requirements commenced from 1 July 2007 or when their youngest child turns seven (whichever is the later). This group of beneficiaries, however, can continue to receive the Parenting Payment until their youngest child turns 16, unlike new applicants (after July 2006) who will move to unemployment benefit when the last child turns eight (lone parents) or six (for couples).
5. Other initiatives comprise the inclusion in the Australian Fair Pay and Condition Standard of a right to take up to 10 days of paid sick leave each year as carer's leave (*i.e.* to care for a family member who is sick) and changes to unpaid parental leave provisions.
6. New applicants for DSP, in particular, who are assessed as being capable of working 15 hours or more per week at wages at or above the relevant minimum are no longer eligible for support after 1 July 2006, but they receive the Newstart Allowance instead, which implies increased (at least 15 hours per week) job search requirements.
7. Australia has a three-pillar pension system. The tax-funded public pension (Age Pension) is the first pillar and is means tested. The pension is payable at age 65 for men and 62½ for women, gradually increasing to 65 by 2014. The second pillar involves the Superannuation Guarantee, introduced in 1992, requiring employers to make a superannuation contribution on behalf of their employees. The earliest age for access to superannuation benefits is 55 years. The third pillar mainly comprises private savings, voluntary superannuation contributions for the most part, which are tax deductible.
8. Although net migration data for 2007/08 are not available, the planning levels for the 2008/09 Migration Program (which represent the highest level ever administered by an Australian government) confirm that migration arrangements will continue to contribute to Australian population growth.
9. Using data from the first two Longitudinal Surveys of Immigrants to Australia (LSIA) Mahuteau and Junankar (2007) conclude that immigrants arriving in Australia in the late 1990s outperform the earlier cohort (arriving between 1993 and 1995) by a year and a half after the settlement. After this period, more recent immigrants who have not found a good job see the prospect of improving their situation decrease sharply below that of the past cohort.

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Chapter 3

Enhancing educational performance

The Australian education system fares well in international comparison with regards to PISA test scores and the higher education system attracts an increasing number of foreign students. Vocational education and training (VET) is an important part of the post-secondary education system, equipping individuals with the skills to enter or re-enter the labour force and offering a pathway to further education. However, a number of challenges need to be addressed. Reducing complexity and fragmentation and tackling issues of under-supply and under-representation of children from disadvantaged groups in the early childhood education and care system is of major importance, given the beneficial impact of early education on outcomes later in life. A key challenge for the school sector is to reduce the achievement gaps of the lowest performing students, while improving overall literacy and numeracy outcomes. Greater autonomy at the school level and improvements in teaching quality would help in this regard. Enhancing the capacity of the VET system to address skill shortages is another key priority. The low rate of completion of training courses is an additional policy issue facing the sector. Finally, moving towards a less rigid policy framework for higher education would enhance flexibility and diversity, making the system more responsive to labour market needs and globalisation challenges. The promotion of a high-quality education system that responds swiftly to changing skill needs is a top priority of the new government. The "Education Revolution", backed by the Council of Australian Governments (COAG), pursues reforms across all sectors of the education system, an important objective being the closing of the gap for the indigenous population.

High educational standards and achievement is arguably of major importance for raising living standards in the face of increasing international competition and an ageing population. Recent Productivity Commission estimates suggest that nationally agreed human capital reforms (health, education and training initiatives), if fully implemented, have the potential to increase GDP by nearly 9% (made up of 6% in participation and 3% in productivity) over the next 25 years. The Commission indicated though that estimates should be interpreted as "exploratory" and "broadly indicative" rather than as forecasts (Productivity Commission, 2006).

This chapter identifies areas of the education system that warrant further reform and lays out policy options for improvement. Before discussing the main challenges, the next section highlights the main structural features of the education system.

The provision of education services

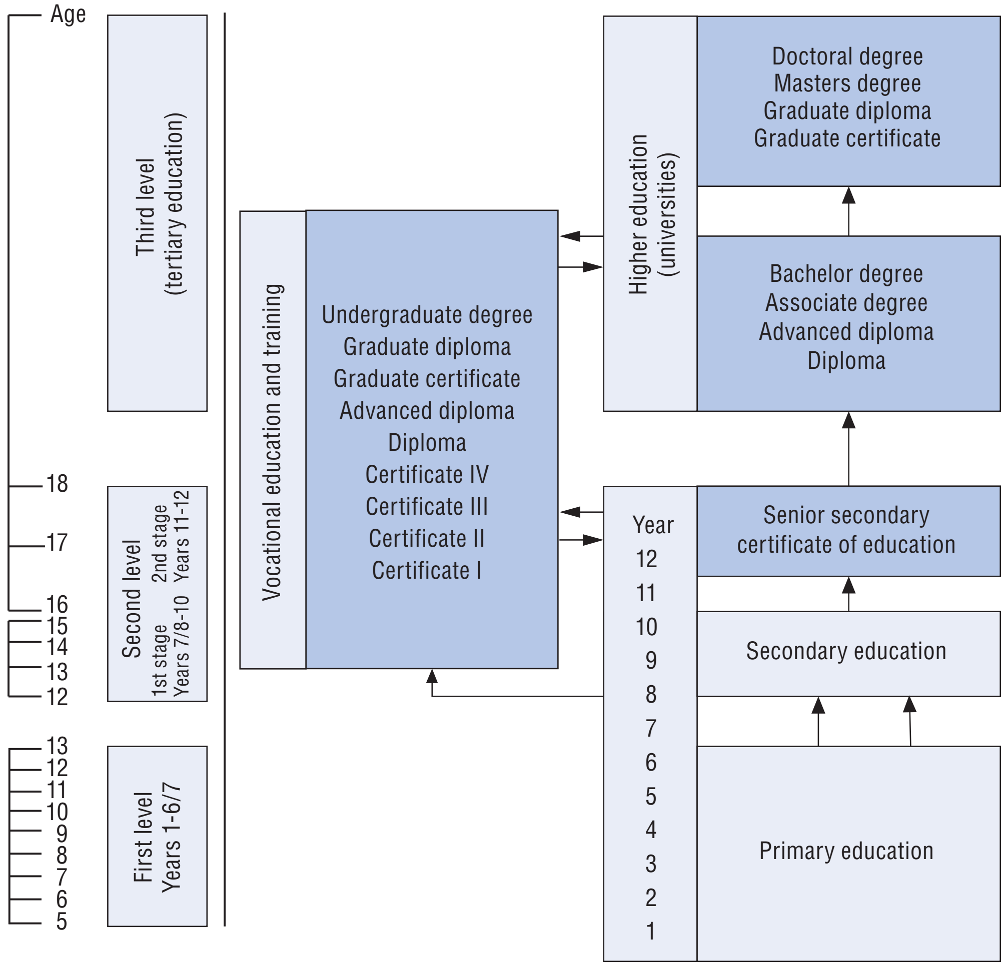
Education is provided in a variety of settings including early education and care (child care, pre-schools) and the three sectors comprising Australia's education and training system: school education, higher education, and vocational education and training (VET) (Figure 3.1) (SCRGSP, 2008).[1] VET programmes can be undertaken through multiple pathways connecting schools, post-secondary institutions and the workplace (AEI, 2006).

The basic structure of schooling (including pre-school years) differs across jurisdictions in many areas, including grade structures, commencement and minimum leaving ages, qualification certification, curricula and the autonomy of decision-making at the school level (Banks, 2005) (Table 3.1). Attendance was compulsory between the ages of 6 and 15 in 2005, extending to 16 years in South Australia and 5 to 16 in Tasmania. The two final years of the secondary school are generally not compulsory. In most cases students start primary school at around five years of age, usually enrolling in a preparatory year (ABS, 2007). Pre-school refers to programmes before the preparatory year and it is not necessarily connected to a particular school, depending upon jurisdiction and location. There are significant cross-state variations with respect to the age range of children attending pre-school, hours of education, location and management of programmes (Press and Hayes, 2000).

The Australian Qualifications Framework (AQF) provides a comprehensive, nationally consistent framework for all qualifications in post-compulsory education and training. AQF facilitates flexible learning pathways, while also improving the visibility and comparability of qualifications in the labour market (SCRGSP, 2008). Although AQF distinguishes between qualifications accredited in the VET and higher-education sectors, the boundaries between these two sectors are blurred by the existence of "articulation" agreements, allowing credit transfer from VET programmes to specific degree-level programmes offered by universities and *vice versa*. Moreover, several tertiary institutions are established as "dual sector" institutions (DEST, 2007).

Different levels of government share responsibility for the administration and financing of education services, which reflects Australia's federal system (Box 3.1). In broad

Figure 3.1. **The Australian education and training system: an overview**[1, 2]



1. In each state primary education includes an additional year prior to year 1 which is not included in this diagram.
2. Providers deliver qualifications in more than one sector. Schools, for example, are delivering certificates I-II, universities are delivering certificates II-IV, and vocational education and training (VET) providers are delivering undergraduate degrees, graduate certificates and graduate diplomas (higher education qualifications in some jurisdictions, but in others also VET), all subject to meeting the relevant quality assurance requirements.

Source: SCRGSP (2008), *Report on Government Services* 2008, Steering Committee for the Review of Government Service Provision, Productivity Commission.

Table 3.1. **Structure of schooling**

States and Territories	Pre-school	Preparatory year before year 1[1]	Primary schooling (years)	Secondary schooling (years)
Australian Capital Territory	Pre-school	Kindergarten	1-6	7-12
New South Wales	Pre-school	Kindergarten	1-6	7-12
Northern Territory	Pre-school	Transition	1-7	8-12
Queensland	. .	Pre-school (until 2006) Preparatory (from 2007)	1-7	8-12
Southern Australia	Pre-school	Reception	1-7	8-12
Tasmania	Kindergarten	Preparatory	1-6	7-12
Victoria	Pre-school	Preparatory	1-6	7-12
Western Australia	Kindergarten	Pre-primary	1-7	8-12

1. First year of school.

Source: AEI (2006), *Country Education Profiles: Australia*, Australian Education International, Department of Education, Science and Training, Canberra.

Box 3.1. The division of government responsibilities in the education and training system

The roles and responsibilities of the Commonwealth and state governments include:

Early childhood education and care sector (ECEC)

At the federal level, the responsibility for ECEC has been recently transferred to the Department of Education, Employment and Workplace Relations. In particular:

- The department has policy responsibility for formal child care (long day care, family day care, outside school hours care, and some occasional care). It administrates a fee subsidy (Child Care Benefit) and an out-of-pocket subsidy (Child Care Tax Rebate) for eligible families and provides some funding to Commonwealth approved services for specific purposes; it also oversees quality accreditation systems for long day care, family day care and outside school hours care. Under the previous arrangements, policy responsibility for child care belonged to the Department of Families, Community Services and Indigenous Affairs.
- In addition, the education department supports pre-school education for indigenous children.

At the state level, governments are responsible for:

- The policy and funding of pre-schools and some occasional care centres, with some governments also contributing financially to outside school hours care, long day care and other such services. Pre-school education is delivered in the majority of the states as part of the formal education system, and is the responsibility of the relevant departments of education. In New South Wales and Victoria such services come under the jurisdiction of Community Services departments and are offered in a more diverse range of settings. In Queensland pre-school is accessed through the community based and private sectors.
- Setting regulatory requirements for providers of children's services, monitoring performance and administrating licenses.

The Commonwealth and state governments have jointly developed national standards for centre-based long day care, family day care and outside school hours care services, with the extent of their implementation varying across jurisdictions. The assurance systems for these services (known as Quality Improvement and Accreditation System in the case of centre-based long day care) is administrated by the Commonwealth-funded Childcare National Accreditation Council and covers all states (OECD, 2001a).

Education and training sector

The states' responsibilities include:

- Providing schooling to all children of school age.
- Providing major funding for government school education and contributing funds to non-government schools.
- Regulating school activities and policies, and setting curricula, course accreditation, student assessment and awards for both government and non-government schools.
- Administering and providing major funding for vocational education and training.
- Regulating and accrediting higher-education courses.

Box 3.1. **The division of government responsibilities in the education and training system** *(cont.)*

The Commonwealth's responsibilities include:

- Providing the majority of funding for non-government schools and being principally responsible for the funding of higher education institutions.
- Providing supplementary funding for government schools and VET.
- Providing financial assistance for specific educational programmes and categories of students.
- Promoting national consistency and coherence in the provision of education and training.

Both government levels are responsible for planning and monitoring the performance of education services and evaluating outcomes.

terms, the states are responsible for the regulation and delivery of services, while the Commonwealth focuses on the development of national and international priorities, and policies and strategies for education.

Investment in education is at the OECD average, but pre-primary spending lags far behind

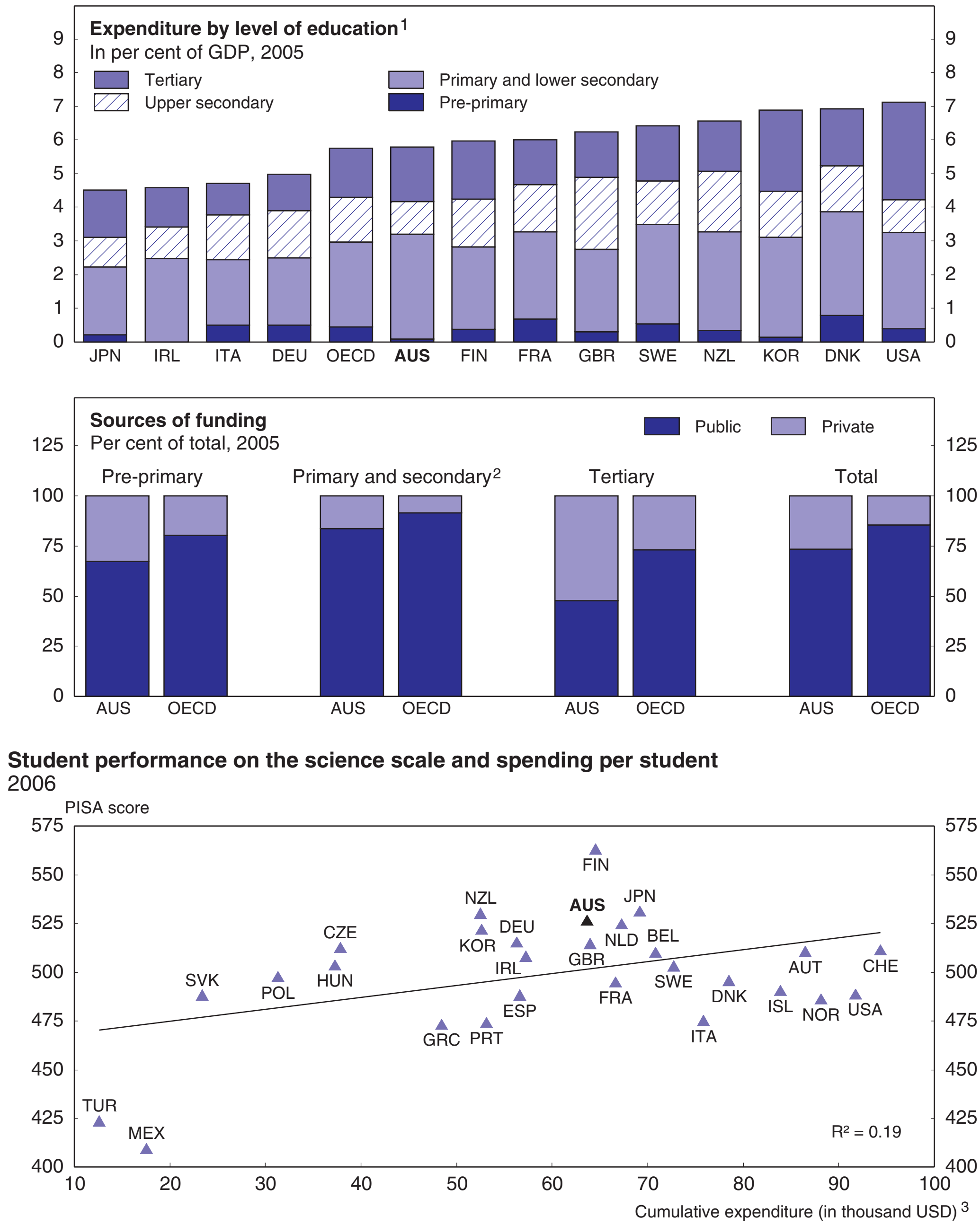
Total public and private education expenditure on education institutions increased by 46% between 1995 and 2005 in real terms, somewhat faster than the OECD average, and accounted for almost 6% of GDP. In 2005 it was at the area average (Figure 3.2, upper panel). While these figures do not take into account more recent spending initiatives, especially those included in the latest budgets, it is clear that Australia spends less than the countries that invest most in education. A distinguishing feature is the low level of expenditure on pre-primary education, which accounts for only 0.1% of GDP compared to the OECD average of around 0.5%.[2] Spending on primary and lower secondary education, on the other hand, is well above the OECD average, while tertiary spending is around the area average.

Another specificity of funding is the relatively low share of public spending. It accounts for 73.4% of the total, compared with an OECD average of 85.5% (Figure 3.2, middle panel). Private financing is especially important in tertiary education, accounting for more than half of total funding – around twice the OECD average. It needs to be noted, however, that public expenditure on tertiary institutions excludes federal outlays under the Higher Education Loan Programme. The OECD classifies such advances on behalf of students as subsidies or loans to households, and the corresponding payments to institutions as private funding. Public financing is more dominant at the lower levels of education, particularly in the school sector, where it accounts for almost 84% of total expenditure.

More resources are no guarantee for better outcomes

Higher spending on education does not automatically improve outcomes. Empirical analysis based on the OECD PISA data (Programme for International Student Assessment) suggests only a weak correlation between either spending or education input and average student performance. Australia, for example, performs significantly better than expected on the basis of spending levels alone (Figure 3.2, lower panel). Moreover, over the past 3-4 decades, real per-child education spending in Australia has increased substantially,

Figure 3.2. **Resources and outcomes**



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1. Pre-primary covers children aged three years and older. Upper secondary includes post secondary non-tertiary education. For the United Kingdom, primary and lower secondary only covers primary education, and upper secondary covers all secondary education.
2. Primary, secondary and post-secondary non-tertiary education.
3. Cumulative expenditure on educational institutions per student between the ages of 6 and 15 years, converted into US dollars using purchasing power parities. Public expenditure only for Greece, New Zealand and Norway; public institutions only for Hungary and Portugal; public expenditure and public institutions for Italy, Poland, Switzerland and Turkey.

Source: OECD (2008), *Education at a Glance* and OECD (2007), *PISA 2006: Science Competencies for Tomorrow's World*, OECD Publishing.

while test scores have failed to increase (Leigh and Ryan, 2007). These results do not imply, of course, that spending has no bearing on outcomes. As discussed below, there is significant evidence that high-quality teachers are critical for increasing student achievement. Rather, the findings highlight the importance of effective use of resources to bolster performance (Sutherland *et al.*, 2007; OECD, 2007a).

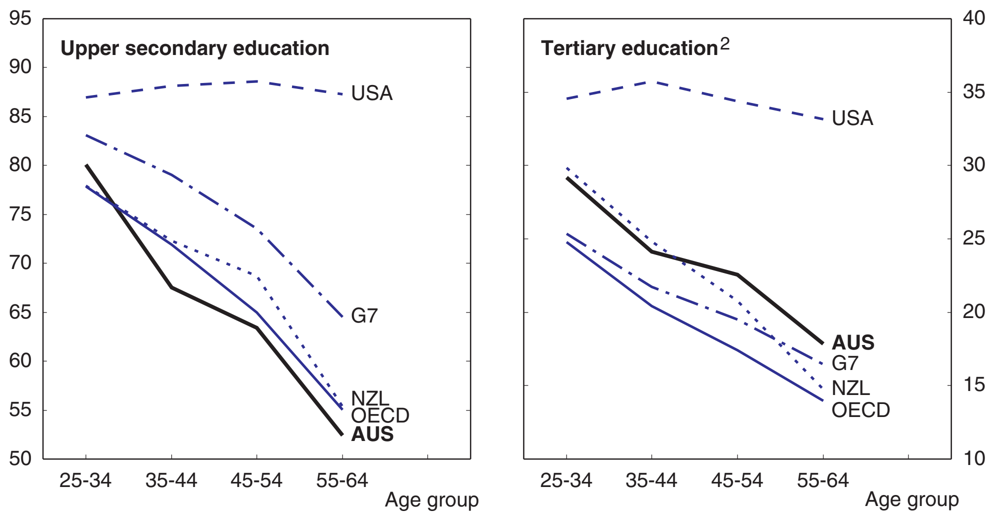
Certain educational outcomes are good, but there is scope for improvement

Australia has made considerable progress in up-skilling its workforce, as indicated by the difference in educational attainment between younger and older groups (Figure 3.3). The school system has also achieved commendable results with regards to reading, scientific and mathematical literacy, as shown by the country's strong performance in the PISA tests (Figure 3.4, upper panel). In terms of the dispersion of test score results, evidence from PISA 2006 further suggests that Australia does not have an unusually long tail of underachievers (indicated by the proportion of students falling below proficiency level 2 for each of the three domains) compared with other high-achieving countries (Figure 3.4, lower panel) (ACER, 2007). Moreover, the impact of socioeconomic background on student performance is significantly less than the OECD average, both for the science and mathematics domains. An additional indicator of good performance of the education system is that it contributes to high social intergenerational mobility, though not as high as in some Nordic countries (Leigh, 2007).

Developments in tertiary education are similarly encouraging. Graduation rates have risen steadily over time, reflecting relatively high private returns to education, the well-designed income-contingent loan scheme for students and certain features of the institutional set-up (especially a high degree of accountability of tertiary institutions) (Oliveira Martins *et al.*, 2007). The percentage of the population that has attained tertiary education exceeds the OECD average (Figure 3.3). Regarding vocational education and

Figure 3.3. **Educational attainment in international comparison**

Population that has completed at least the level of education indicated, percentage by age group, 2006[1]



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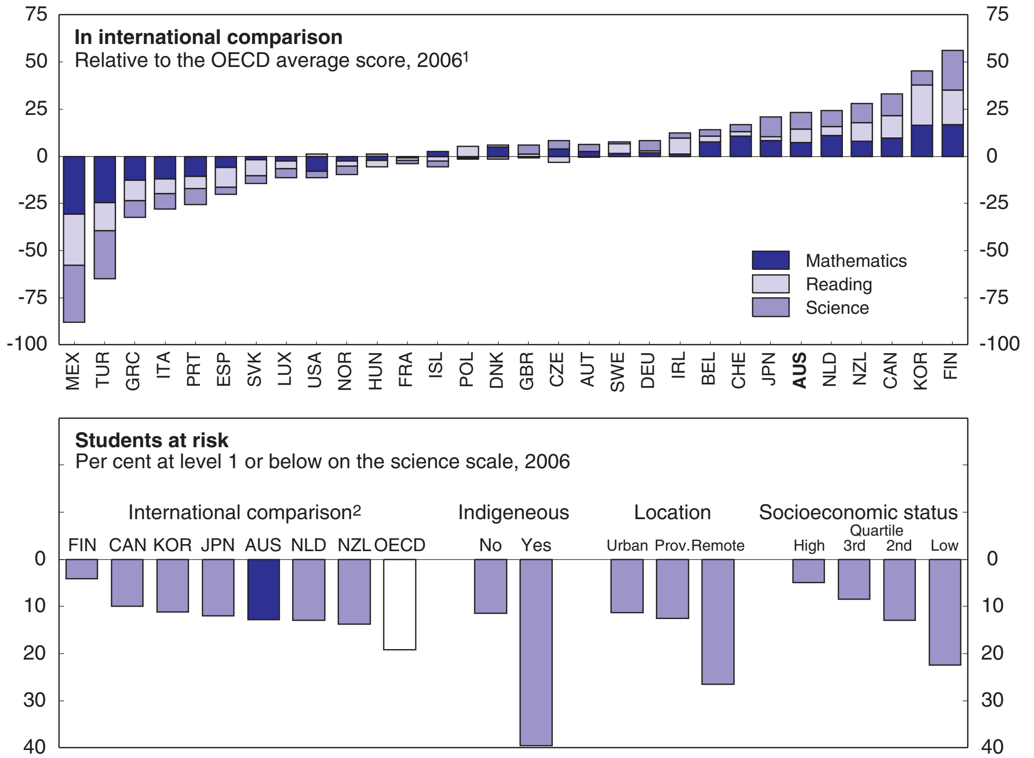
1. 2003 for upper secondary in Japan (used in calculation of the G7 average). The aggregates for the OECD and the G7 countries are unweighted averages.
2. Tertiary type A and advanced research programmes.

Source: OECD (2008), *Education at a Glance*, OECD Publishing.

Figure 3.4. **PISA performance**
Student performance at age 15



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1. The three skills are weighted equally in the total score. Data for the United States in reading proficiency is from PISA 2003.
2. Australia is compared to the six countries with the highest mean performance.

Source: OECD (2007), *PISA 2006: Science Competencies for Tomorrow's World*, OECD Publishing; and ACER (2007), "At Risk Students", *PISA 2006 National Report: Fact sheets*, Australian Council for Educational Research.

training, around 12% of the population aged 15-64 years-old was enrolled in publicly funded institutions in 2006, although somewhat below its peak of 13½ per cent in 2000. The VET sector equips individuals with the skills to enter or re-enter the labour force, provides retraining for a new job or upgrading existing skills, and offers a pathway to further education, including entrance to higher education (SCRGSP, 2008).

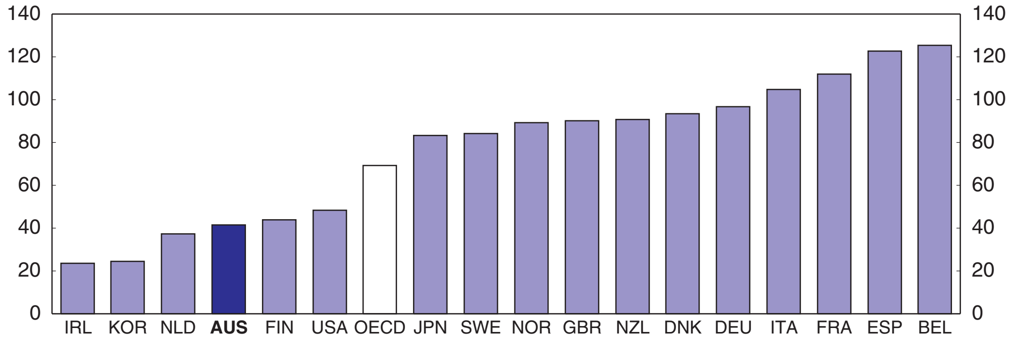
While the Australian education system compares favourably against certain international benchmarks, there is still scope for improvement in a number of areas, including reducing the considerable variation among the states with regards to key educational outcomes.

Participation in pre-primary programmes remains low, with concerns about disadvantaged groups

Only 42% of the children aged three to four were enrolled in pre-primary programmes in 2006, compared with approximately 70% in the OECD area on average and over 90% in certain countries including Belgium, France, Germany and New Zealand (Figure 3.5). While caution is required in interpreting these statistics,[3] it is clear that Australia lags behind the best performing countries in this critical area. Despite positive developments over the past decade or so, only a third of children aged 0-5 years old attended Commonwealth-approved child-care facilities (excluding pre-school) in 2006 (SCRGSP, 2008). Attendance rates for the 0-5 age bracket ranged between 43% in Queensland to less than 27% in Western Australia and the Northern Territory. Regarding pre-schools, around 13% of four year-olds miss out on early childhood education, although there is significant variation across the states.[4] Participation rates have improved only marginally since the beginning of the decade.

Figure 3.5. **Enrolment rates in early childhood education**[1]

Children aged 4 and under as a per cent of the population aged 3 to 4, 2006



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1. Full and part-time participation in public and private institutions. For Belgium, France, Italy and Spain the rates tend to be overestimated as a significant number of children are younger than three years old; the net rates between three and five are around 100%. The OECD aggregate is an unweighted average.

Source: OECD (2008), *Education at a Glance*, OECD Publishing.

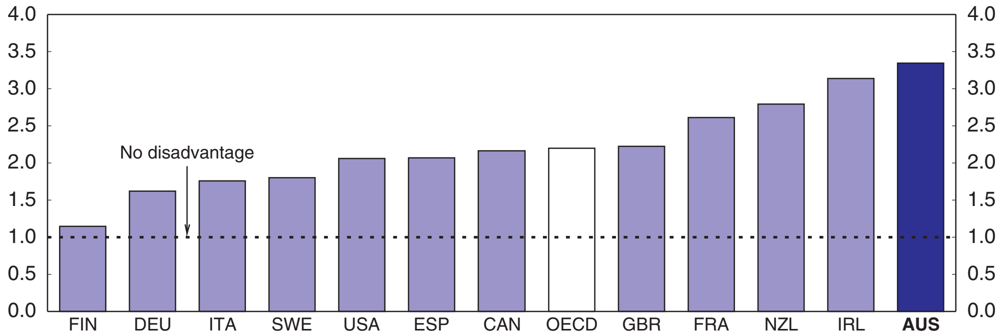
Important concerns arise with regards to the enrolment of children from disadvantaged backgrounds. Despite support by all government levels, children with a disability and those from non-English speaking backgrounds are significantly under-represented in both child care and pre-school services (SCRGSP, 2008).[5] This is also the case of children from an indigenous background and those in remote areas in the case of child-care facilities. Less than half of indigenous children currently receive an early childhood education. The attendance patterns vary significantly across jurisdictions. Promoting participation and equitable access to early childhood education and care (ECEC) is of major importance. For disadvantaged children, investment in education has the highest payoff when it is made at a young age. While for all children the optimal investment profile declines with age, empirical evidence suggests that more advantaged children receive massive early investment from their parents that children from disadvantaged families do not receive (Heckman and Masterov, 2007). Apart from the beneficial impact of early education on outcomes later in life, access to ECEC is widely recognised as an important determinant of labour market participation of women (OECD, 2001b).

Completion rates of upper secondary education should be increased

Upper secondary education attainment remains below the levels of the best performing countries, but the gap *vis-a-vis* the OECD average has been closed for the younger cohorts (Figure 3.3). The relatively low completion rates compared to the best performers raise concerns, because secondary education attainment (either through the general stream or VET programmes) is a powerful determinant of participation in the labour force (OECD, 2007a). The strong economic growth in Australia in recent years has contributed to the improved employment prospects of early school leavers. Nevertheless, the impact of educational attainment on transitions from school to work and further study should not be underestimated. Twenty to twenty-four year-olds who have not completed upper secondary education (Year 12 or its vocational equivalent) are around three and a half times more likely to be unemployed than their graduated counterparts, with the relative disadvantage being among the largest in the OECD (Figure 3.6). In addition to facilitating the transition from school to work or further study, improvements in educational attainment could also yield long-term economic benefits by increasing productivity and participation.[6]

Figure 3.6. **Relative labour market disadvantage of low-qualified young adults**

Persons aged 20-24 not in education and unemployed, 2006[1]



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1. Ratio of the share of persons with below an upper secondary education to the share of those having attained an upper secondary level of education. Upper secondary includes post-secondary non-tertiary education.

Source: OECD (2008), *Education at a Glance*, OECD Publishing.

Notwithstanding Australia's strong performance in standardised tests, the results from the PISA studies indicate that average reading scores fell significantly (in a statistical sense) between 2003 and 2006, reflecting mainly a decline in the scores of high achievers in 2006. Australia is the only country among the ones with above-average performance that experienced such a strong deterioration in students' reading performance (OECD, 2007b). The mathematical skills of Australian girls have also slipped, though the average level of performance in this domain remained statistically the same. Students "at risk" constitute another challenge to Australian schools. Evidence from the 2006 PISA study suggests that 13% of 15 year-olds perform below the OECD scientific "baseline" proficiency (Figure 3.4, lower panel), with similar percentages in the case of mathematical and reading skills. Although this proportion is below the OECD average (around 20%), under-achieving students are still a matter of concern. Over the longer term, data from the Longitudinal Surveys of Australian Youth indicate that literacy and numeracy scores of students aged 14 (in grade 9) have failed to rise over the period 1975-98, and international mathematics tests of 13 year-olds (in grade 8) indicate no improvement over the period 1964-2003 (Leigh and Ryan, 2007). This pattern is common to many developed countries, most of which have also seen no improvement in test scores over recent decades (Gundlach, Woessmann and Gmelin, 2001). Particular attention needs to be devoted to reducing the gap in performance among students from disadvantaged backgrounds and indigenous students.[7] An important goal of the National Reform Agenda is to increase both the proportion of young people who meet basic literacy standards and the levels of overall achievement. This requires a focus on both the quality and equity of student outcomes through initiatives discussed below, with measures to address learning difficulties in early childhood playing a prominent role (COAG, 2006). A particular challenge is to attract more young people to study mathematics and science, in light of the low level of interest in learning science expressed by the Australian students in the context of the 2006 PISA study.

Tackling skill shortages is a high priority

Tackling skill shortages is of great importance to sustaining strong growth. The ratio of job vacancies to unemployment increased from 15% at the end of the 1990s to 36% in early 2007, providing evidence in this regard. The "availability of suitably qualified employees" is cited by employers as being the strongest constraint on investment (St. George-ACCI, 2007). At present there are skill shortages in most trades, in health care and in a number of other professional and semi-professional occupations. Population ageing is likely to worsen the problem, given evidence that the age profile of workers in occupations currently experiencing skill shortages is skewed towards mature age workers (Wong, 2006). The low share (somewhat above 50% in 2006) of persons aged 18 to 20 years-old engaged in any form of education and the relatively small size of this cohort, are cited as important reasons behind the chronic skill shortages, besides the increased demand for skilled workers in recent years (Birrell and Edwards, 2007).

Projections for the qualification profile of the employed population in the middle of the next decade indicate that the proportion of employed people with qualifications will rise to 71% in 2016 compared with 58% in 2005 (with increasing numbers achieving qualifications at higher levels) (Shah and Burke, 2006). This implies that four million people will have to acquire qualifications over the coming ten years. More than 60% will need a VET qualification, with the rest requiring a higher education level. A comprehensive strategy to address skill shortages should encompass measures to enhance mobility across jurisdictions, to raise immigration of skilled persons and to provide better recognition of overseas qualifications (Chapter 2). Moreover, the capacity of the education and training system (especially VET and higher education) to meet industry needs will have to increase (Productivity Commission, 2007).

Reforms to enhance the performance of the education system

Increasing co-ordination and coherence in the early childhood education and care system

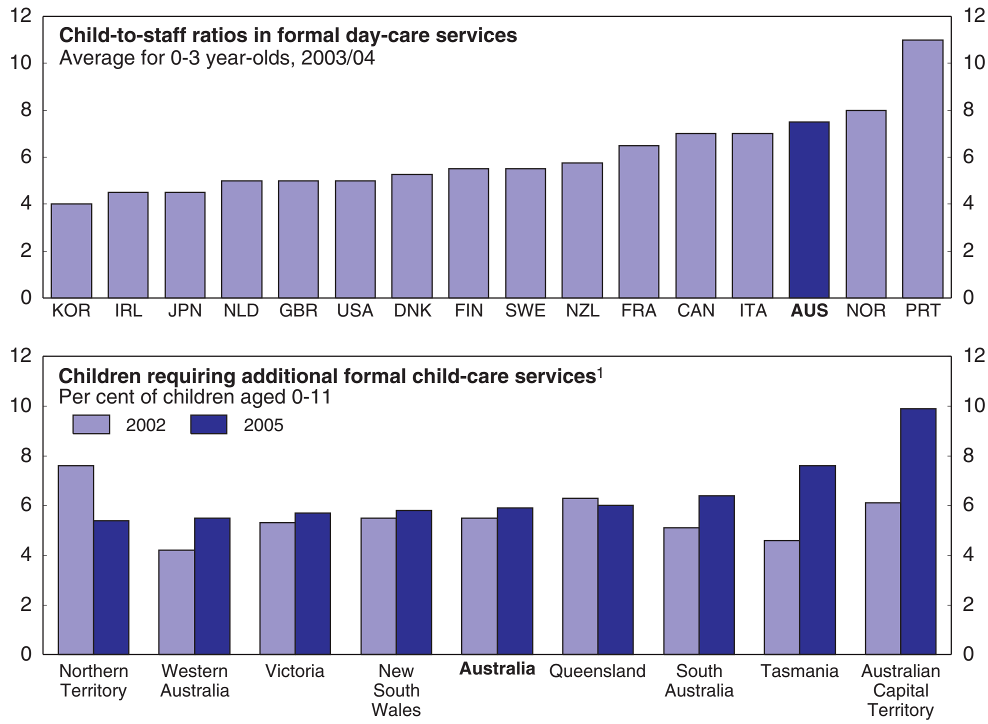
The early childhood education and care (ECEC) sector faces a number of challenges, arising mainly from the complex, fragmented nature of policy making and service provision.[8] Fragmentation arises because of the historical "child care, early education" divide. Traditionally, child care has been viewed as a tool to foster employment and support families, rather than being part of the education system. The split has been enshrined in the administrative structure of the sector (Box 3.1).

The government's objective to develop a high quality integrated system of ECEC is commendable. As highlighted by the thematic OECD reviews on early childhood, the complexities in a federal system and the multi-layered administration and regulation hamper co-ordination and coherence, raising concerns about variation in service quality and access (OECD, 2001b and 2006a). The complex delivery of ECEC further results in inefficiencies emerging from the duplication of funding provided by the Commonwealth and the states for the four year-olds who attend both pre-school and long day care centres, and the cost shifting to the Commonwealth government as pre-school services are being increasingly delivered in a child-care setting.

Quality considerations

Central to the move towards a more integrated approach is a reform of the current staffing regime. Around 60% of the employees in approved child-care services had a relevant formal qualification in 2006 (SCRGSP, 2008). Non-school services employ in general a mix of trained and untrained staff,[9] with the qualifications of the former provided mainly by the vocational sector. The pre-school sector, on the other hand, in keeping with its educational emphasis, typically employs fully trained teachers, although not necessarily with an early childhood degree. As a positive step, some child-care centres implement an integrated ECEC programme. There is no legal requirement for child-care centres to have targeted educational programmes with qualified early childhood teachers, even when they provide care for children before primary school (Elliott, 2006). Important issues also arise from the high child-to-staff ratios in child-care services. They are among the highest in the OECD (Figure 3.7, upper panel), reflecting the high turnover rates and recruitment difficulties for qualified staff because of poorer working conditions and lower remuneration compared with the employees in pre-school services.

Figure 3.7. **Child-care indicators**



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1. Estimates for the smaller jurisdictions are based on small sample sizes, and consequently are subject to high sampling error. Data for Tasmania, the Australian Capital Territory and the Northern Territory, in particular, need to be interpreted with caution.

Source: OECD (2007), *OECD Family database*, *www.oecd.org/els/social/family/database*; ABS (2002, 2005), *Child Care Survey* (unpublished) in *Report on Government Services* 2008, Steering Committee for the Review of Government Service Provision, Productivity Commission.

Additional concerns include the effectiveness of the quality assurance system. Australia is unique in having a national, government-supported accreditation system for centre-based long day care, family day care and out-of-school hours care services that are directly tied to the provision of funding. However, an integrated monitoring system has yet to be fully implemented. The current accreditation system has been criticised for its complexity and duplication with regards to state licensing regulations, and the regulatory burden it imposes on child-care services. The enforcement of quality assurance has also been questioned in light of the lack of random inspections, the requirement for services to meet only around 50% of the indicators of quality to be accredited, and the lenient attitude towards centres not meeting the requirements (Rush, 2006). Cross-state disparities in regulations and the implementation of national standards for the main types of child-care services, developed jointly by the Commonwealth and state governments, also undermine the effectiveness of the accreditation system. Long day care is regulated by the states, whereas family day care and outside school care are regulated only in some. Pre-schools are either registered or licensed under state requirements, according to whether the delivery is through the state education system or community-based and independent services. There are variations across jurisdictions in service types and functions, the age of attendance of pre-schools and the hours of operation (Press, 2007). The cost to parents of child care and early education also differ across the states and with the type of services, with the cost of pre-school programmes being closely related to the type of providers in each state. Overall, in states where pre-school education is provided as an integral part of public education, services are available at low cost.

Accessibility and affordability of ECEC provision

The accessibility of ECEC services, and particularly child care, remains the subject of some debate in Australia. Despite claims that there is a shortage of child-care places, the available data do not provide clear evidence on the issue. The Household, Income and Labour Dynamics in Australia (HILDA) Survey indicates that around 20% of households reported problems with child-care availability (such as finding good quality child care, accessing care for the hours needed) in one of the four years from 2001 to 2004, although generally such difficulties lasted only for one or two years, probably as a result of a reduction in the mother's working hours (Heady and Warren, 2007). Analysis based on the ABS 2005 Child Care Survey also highlights accessibility issues: approximately 6% of children aged under 12 required additional child-care services in 2005 (Figure 3.7, lower panel) – with the proportion rising to 8.5% in the case of children aged 0-4 years (broadly unchanged since 1996). "Place unavailability" (booked out or no places) is considered by the parents the most important barrier to the use of additional child-care services required during the reference weeks of the survey. By contrast, data from the Longitudinal Survey of Australian Children (LSAC) suggest that the level of unmet demand for child care due to a lack of places was very low. Moreover, utilisation rate data from the Census of Child Care Services do not suggest that there is a large shortage of child-care places – though this does not preclude the possibility of localised shortages.

Access to child care is closely related to affordability. The ABS and HILDA findings highlight ongoing concerns about the costs of child care as a barrier for some families to use such facilities. However, the LSAC Survey suggests that only 3.5% of those wanting child care (either using it or not using but wanting to) gave affordability problems as the reason. The introduction of the Child Care Benefit in 2000 has improved affordability, especially for low-income households. Some of the gains were eroded by 2004, as the rise in fees outpaced average weekly earnings and government assistance to families (OECD, 2006b, Figure 6.5). However, while child-care prices have risen consistently in recent years the combination of higher incomes and greater government support, has resulted in increased affordability for the majority of families (OECD 2007c, Figure 6.5). The recent increase in the Child Care Tax Rebate (CCTR) from 30% to 50% of out-of-pocket costs for approved child-care costs (announced in the 2008/09 Budget) has further increased the affordability of child care).

While the evidence on unmet demand is somewhat controversial due to measurement problems,[10] quality indicators, including high child-to-staff ratios and sometimes low qualification of the staff, may point to the need for more public funding.

Recent reform initiatives in the ECEC sector

There has been a recent shift by state governments towards the provision of early childhood education and care in co-located settings in an effort to facilitate transition between services.[11] Many states have also introduced early childhood curricula, but again with substantial variations in terms of age span and the services and staff to which they apply (Press, 2007). Alongside these efforts, steps were taken to develop a more streamlined accreditation system, with the reforms also entailing a tightening in the accreditation process. For instance, Child Care Quality Assurance Spot Checks were introduced in 2006 to help monitor and maintain the quality of child-care services across Australia.[12] Growing recognition of the important role of ECEC is evident in the COAG's recent meetings, which have emphasised the need for improving early childhood development.

Initiatives in the 2008 budget (around AUD 2.4 billion over a five-year period) support a more integrated and comprehensive high quality ECEC. These include: *i)* the provision, by 2013, of universal access to early childhood education for all four year-olds (including indigenous children in remote areas), with the programmes (delivered by both private and public providers) being funded for 15 hours per week, a minimum of 40 weeks a year; *ii)* the development of an Early Years Learning Framework,[13] aiming to provide for continuity of learning and transition across early childhood settings and the first years of school, and new quality national standards for child care and pre-schools; *iii)* more university places to train early childhood educators, along with the provision of financial incentives for graduates to work in areas of specific needs (such as rural areas and indigenous communities) and abolition of study fees for child-care trainees; and *iv)* measures to improve access to child-care facilities by helping parents meet the cost of formal care and an increase in the number of child-care places (Chapter 2). The responsibility of formal child care, including the provision of financial support to parents, has been recently transferred to the Commonwealth Department of Education, Employment and Workplace Relations. An Office of Early Childhood Education and Child Care has been established in the Department to implement the reforms.

Assessment and recommendations for further action

The government's initiatives go in the right direction. A comprehensive reform of the ECEC is of fundamental importance, given the critical role of the early years of childhood for the development of cognitive and non-cognitive abilities (Heckman and Masterov, 2007). Moving towards a more integrated approach would help close the care and education gap, while leading to considerable advantages in terms of policy organisation, resource allocation, and enhanced consistency in regulatory, funding and staffing regimes, with positive effects on access and quality. The issue of integration unavoidably raises questions about the appropriate administrative structure required to promote coherence for ECEC services. A single administrative structure facilitates coherence in a number of ways, including allowing for common policies, more effective investment in young children and increased continuity of children's early childhood experience (OECD, 2001b and 2006a).

But there are also benefits from the decentralisation of ECEC powers and responsibilities, as the state/local governments are best situated to respond to local needs, although devolution may also lead to a widening in the differences of access and quality between jurisdictions, as is the case in Australia. Based on international experience, the 2006 OECD thematic review highlighted the importance for ECEC to be part of a well conceptualised national policy with, on the one hand, devolved powers to sub-national governments, and on the other, a national approach to goal setting, legislation and regulation, and financing and programme standards. The enhanced leadership and strong co-ordinating role of the Commonwealth government is therefore welcome. Particular importance should be given to the mechanisms for collaboration between government levels and monitoring policy implementation and performance.

The provision of universal access to early childhood education for all four year-olds, besides facilitating a more integrated ECEC system, is a welcome step towards improving developmental outcomes, as long as the quality of access can be assured. There is scope to go further however by: extending the right to three year-olds (currently under consideration) in line with international practice; and increasing the duration of services to better accommodate children's care and education needs and limit multiple transitions, even on a daily basis, between ECEC providers. Budget initiatives to boost the affordability of child care and increase the number of child-care places are commendable and efforts in this direction need to continue. In addition to contributing significantly to children's educational outcomes, affordable quality child care is an important determinant of labour force participation for second earners (OECD, 2005a). Most importantly, the government needs to address the issue of the under-representation of children from disadvantaged groups. Closing the educational gap between indigenous and non-indigenous children is a focal point of its "Education Revolution" reform programme. The universal access initiative is a step forward in this regard. Based on a large body of empirical work, Heckman and Masterov (2007) conclude that high-quality pre-school centres available to disadvantaged children have a strong positive record in promoting achievement. Given that learning and motivation are dynamic, cumulative processes, the strengthening of cognitive and non-cognitive abilities early in life facilitates subsequent learning, resulting in very high returns for such programmes.

The OECD thematic reviews highlight the need for early childhood to be viewed as a "distinctive" stage of education, recognising the various needs of young children, rather than solely as a preparatory period for primary education. The government's plan to increase the learning and development content of early childhood services for the four year-olds through an age-appropriate curriculum (with specific focus on play-based learning, pre-learning and pre-numeracy skills) is a welcome step towards bridging the gap between care and learning, without an excessive emphasis on narrowly defined academic skills. The reform is expected to facilitate the transition between early childhood services and schools, without risking "schoolification" of early childhood institutions.

Increasing the supply of qualified early childhood teachers and child-care workers is also included in the government's reform agenda. Firmer regulations about the number of trained staff to be employed by the long day and family day centres were identified by the OECD reviews as an issue for policy attention. Enhancing the quality of services would further require introducing licensing and regulatory requirements for family day care and outside school hours care services by the states where these are not currently imposed. If the regulatory environment is to lead to quality improvements, it will be important that penalties for non-compliance are rigorously enforced.[14] A national framework that ensures consistency for supply, funding and quality is needed for all ECEC services. A degree of national consistency exists only for policy and quality of child-care services falling under Commonwealth programmes, with no similar framework for pre-school education (Press and Hayes, 2000). The ongoing development of new quality national standards for child care and pre-schools, which gave rise to a discussion paper for public consultation (PAWG, 2008), is a welcome step in this direction.

Promoting high quality schooling for all students

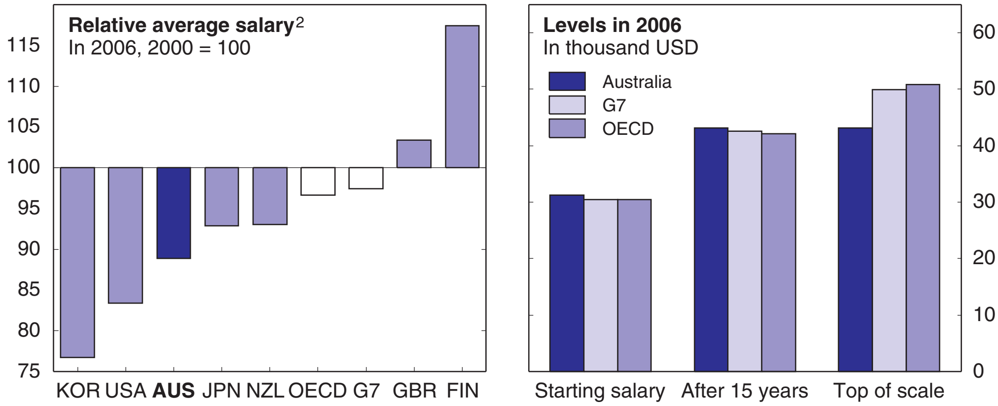
At the school level, Australia needs to enhance educational attainment in order to catch up with the best performing countries. A key challenge is to address the achievement gaps of the lowest performing students, while improving overall literacy and numeracy outcomes. Socioeconomic factors continue to contribute to performance inequality, and on average, indigenous students remain more than two years behind their non-indigenous counterparts. Tackling these issues requires multiple initiatives, with early childhood development being a decisive factor for later school performance.

Teaching quality

Teaching quality constitutes a very important determinant of the variation of student achievement. Empirical evidence of a significant decline in the academic aptitude (literacy and numeracy standards are proxies for teacher quality) of new teachers and teacher students over the past two decades is therefore a source of concern. According to Leigh and Ryan (2008), the fall in the average pay of teachers relative to non-teachers with a university degree between 1983 and 2003, and the rise over the period in pay dispersion in non-teaching occupations (implying increasing returns to aptitude in such occupations), played a significant role in the deterioration in teacher quality. Recent developments in teachers' relative salaries do not stand out in the international context (Figure 3.8, left panel). Cross-country comparisons however provide clear evidence on the weak dynamics of teachers' salaries in Australia by showing no rise in pay after 15 years of experience, even though the initial remuneration is somewhat above the OECD average (Figure 3.8, right panel). Salary progression of public school teachers reflects the length of teaching tenure, rather than performance. Teachers reach the top salary band within nine years after graduation. Subsequent promotions usually involve administrative and management roles, reducing the attractiveness of becoming a teacher. A recent survey highlights the difficulty school principals face in filling vacancies with well-qualified teachers across all areas of study, with particular challenges in foreign languages, English, mathematics and sciences (ACER, 2007). More than 40% of secondary school principals stated that, to cope with shortages, they were requiring their staff to teach in areas outside their expertise, with around a quarter of them indicating that they had to resort to the recruitment of less

Figure 3.8. **Teachers' salaries: an international comparison**[1]

Average for primary, lower and upper secondary education



StatLink http://dx.doi.org/10.1787/471863333851

1. Annual statutory teachers' salaries in public institutions. Salary and wage data are in US dollars converted using purchasing power parities. The G7 (excluding Canada) and OECD aggregates (21 countries) are unweighted averages. No data is available at the top level of the scale for the United States in 2006.
2. Average of the three salary scales (starting, after 15 years and top) in per cent of annual average gross wage earnings for a single person without children.

Source: OECD (2002 and 2008), *Education at a Glance* and OECD (2008), *Taxing Wages 2006/2007*, OECD Publishing.

qualified teachers. Attracting and retaining qualified teachers poses greater difficulties for schools in remote areas.

Strategies to reward and recognise quality teaching will form part of a collaborative approach to strengthen the profession. The Commonwealth is working with state and territory governments to research effective ways of rewarding teaching excellence and extending the career structures for classroom teachers. Incentives to address the inadequate supply of teachers in specialist areas and mechanisms for attracting quality teachers to work in difficult-to-staff schools will form the core of reforms. The professional development of the teaching workforce is of crucial importance for improving quality, as is the standard of pre-service education.[15] Both are key elements of the reform agenda.

School performance differs

According to the 2006 PISA study, there is little institutional variation in Australia: the largest part of overall variation in students' performance is due to differences in results within schools.[16] For scientific literacy, however, the average socioeconomic background of a school outweighs a student's own background, with the impact of schooling being greatest for students from disadvantaged backgrounds or those attending schools with a low average socioeconomic background (Thomson and de Bortoli, 2007). In this context, the drift of students to private schools raises significant challenges with regard to the organisation of schooling, because it has led to a significant change in the average socioeconomic composition of government schools. Such schools currently have a higher share of students from lower socioeconomic backgrounds than three decades ago.

Funding arrangements and the perceived service quality are central to the public debate surrounding this development. Ryan and Watson (2004) conclude that increased government funding has been used to reduce student-teacher ratios significantly, with the non-government sector recording an improvement with regards to this quality indicator relative to government schools since the early 1980s. The improvement appears to have outweighed any adverse impact on private school enrolment arising from real increases in fees since the late 1970s. The current model of private school funding by the Commonwealth is based on the average cost of educating a child at a public sector school, but differentiated, taking into account the socioeconomic status of school students (determined by their home address). This implies that as the costs for government schools increase, federal funding for non-government schools also rises. Dowling (2007) considers this funding mechanism "increasingly problematic" because both government and private schools are being funded on the basis of an "average" student although the latter may be catering to a student body with below average costs. Government schools, on the other hand, have an increasingly expensive student body, as the drift to the private sector has resulted in an increasing share of students with a low socioeconomic background.

Differences in Year 12 participation, the last year of upper secondary school, have narrowed significantly over time between the two types of school. However, differences in tertiary entrance performance persist in favour of students attending private schools, probably reflecting greater flexibility in recruitment and budget strategies which, in combination with the availability of more financial resources, enable non-government schools to attract and retain staff with high capabilities. A shift towards greater school autonomy has occurred in Victoria and South Australia to bring government schools closer to the non-government sector in terms of operation (Marks, MacMillan and Ainley, 2004). However, no state education authority has yet fully decentralised staffing arrangements. The states remain responsible for remuneration and work conditions. Unlike the case in the private education sector, there is a lack of performance-based pay arrangements in the government sector for teachers.

Greater national consistency in schooling

Co-ordinating education policy at the national level is not a straightforward task, given the joint government involvement in the area and the significant cross-state differences in the basic structure of schooling, such as curricula, the extent of decision-making autonomy enjoyed by the schools and the form of final qualifications awarded to successful students. Diversity in schooling arrangements across jurisdictions may impose a burden on users in terms of institutional complexity and increased administrative and transaction costs, with additional adverse consequences on inter-state mobility of teachers, families and students (Banks, 2005). As a commendable step, from January 2011, all states will be required to implement (for the first time in Australia's history) a single national curriculum from kindergarten to Year 12, starting with English, mathematics, science and history. However, cross-jurisdictional variation in other areas of school education will remain. The Ministerial Council meeting in April 2007 decided not to proceed with the implementation of a "national eligible school starting age", as little evidence was found on the educational benefit of such a reform and because of the significant costs to be incurred. The issue of student inter-state mobility will instead continue to be addressed through national processes.[17] There was also no agreement on the adoption of an Australian Certificate of Education for Year 12, thereby perpetuating unnecessary differences across states and duplication of efforts (Business Council Australia, 2007).

Recent reforms to improve the performance of schools

The government's programme for schools focuses on enhancing both the performance outcomes of students and on achieving quantitative improvements, with the commitment of increasing Year 12 retention rates to 90% by 2020. The development of a National Action Plan on Literacy and Numeracy, announced in the 2008 budget, is a critical step in this regard. To reduce the "tail" of underperformance among disadvantaged students, and achieve the COAG agreed target of halving the gap for indigenous children in literacy and numeracy performance within a decade, additional resources will be available to schools most in need of help. The budget further includes expenditure of AUD 1.2 billion over five years, most of which is for computers in secondary schools. To increase the completion rates of secondary education over time, a ten-year funding plan (AUD 2.5 billion) is being implemented for the establishment of trades training centres in all secondary schools. The measure aims to provide meaningful VET streams for those students who do not wish to go on to university.

Assessment and recommendations for further action

The reform initiatives are welcome steps forward. Low achievement in literacy and numeracy is considered the most important factor explaining school drop-out rates, especially for boys (Rothman, 2001). Plans to introduce a school-entry evaluation, along with the provision of universal access to early childhood education for all four year-olds, are initiatives in the right direction to help weaker students meet the minimum national benchmarks. Improving vocational education and training, so that it becomes a "first choice" for students seeking a post-secondary qualification, is also important for lifting Australia's international ranking in upper secondary educational attainment. The government's programme of trades training centres in schools may contribute to this end as long as it can provide young people with the necessary skills for further learning and employment. A close monitoring and evaluation of the effectiveness of the programme is critical in this regard. To ensure that the education system provides all school leavers with a minimum educational attainment level, states could continue moving towards higher minimum school leaving ages, though the costs and benefits would need to be assessed. However, it should be ensured that all students achieve minimum core skills, before leaving school.

Strategies to counteract the effects of disadvantaged backgrounds on performance are of great importance in improving equity of outcomes for students. The targeted support measures to help students "at-risk" and the differentiated allocation of resources to schools and programmes could be enhanced by better taking into account the difference of socioeconomic backgrounds between students in school funding. Mechanisms to ensure that schools spend the resources on improving the outcomes for such children are indispensible.

Recent empirical analysis suggests that different facets of accountability, autonomy and choice are strongly associated with student achievement (Wößmann *et al.*, 2007). Moves by the government[18] towards developing a single national school curriculum and developing a nationally-consistent testing system are welcome steps as they allow a more effective cross-state comparison of student achievements and strengthen accountability. Allowing some flexibility in schools, and in particular in teaching methods to achieve common standards might be of benefit in light of the different learning abilities of students, as long as it does not lead to lower standards for other students (Council for the Australian Federation, 2007). The study of foreign languages has an important role to play in enhancing the quality of education. Despite improvements over time, much remains to be done in this area as many students still lack language skills, reflecting to a large extent teacher shortages. Expenditure initiatives in the 2008 budget for additional Asian language classes in high schools and language-teacher training and support are therefore welcome.

Moving towards less centralised management is indispensible to increase school autonomy and choice. While the marked shift of enrolment from the government to the non-government school sector shows that parents and students are willing to exercise choice, competition among schools is still limited. It is constrained, among other factors, by strict regulations on setting up new schools, particularly in the case of private schools, and the exit of low performing units,[19] and the significant centralised control most schools are subject to (Novak, 2006). School principals should be given autonomy in recruiting and rewarding teaching staff to attract and keep experienced teachers. Changes to the system of teacher career progression, which caps salaries nine years after graduation in the public sector, would help to keep the best teachers. Teacher remuneration systems should also create appropriate incentives to re-allocate teachers to where they are needed most.

Vocational education and training: responding to changing skill needs

Australia has developed a comprehensive VET system. The institutes of Technical and Further Education (TAFE), owned and administered by the states, are the main providers. A distinguishing characteristic is the central role played by employers in determining policies and priorities and developing training qualifications (ACCI, 2007). While apprentices and employers appear to be quite satisfied with the provision of services, challenges remain, most importantly to increase the VET system's capacity to address current skill shortages and to meet skill needs over the longer term. A major policy issue facing VET is the low completion rate for apprentices, standing at just over 50%. A recent study by NCVER on "second-chance" learners[20] provides further evidence on poor completion outcomes, especially when focusing on higher level qualifications: around 10% of early school leavers (aged 24 and younger) actually complete a certificate III or higher VET qualification within four years of leaving school (Karmel and Woods, 2008). There is also scope for further improving post-study outcomes: while the completion of training certainly contributes to better employment opportunities for young people, not all graduates obtain a job directly related to their training. The highest match is observed in the case of tradepersons (Karmel, 2007).

Recent reforms of the VET sector

The COAG National Reform Agenda, released in February 2006, included important initiatives to tackle skill shortages and improve quality, flexibility and portability of skills and training (Box 3.2). Building on previous initiatives, the 2007 budget expanded opportunities for individuals to take up a vocational qualification, by offering incentive payments for apprenticeships in short supply and extending the income contingent loan scheme available in the higher education sector to Diploma and Advanced Diploma courses offered through VET. Also, funding was provided for the development and implementation of shorter apprenticeships with competency-based, rather than time-based, progression.

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Box 3.2. **A national approach to addressing skill shortages**

Following the package of measures in the February 2006 meeting, aiming at a "genuinely" national approach to apprenticeships, training and skills recognition and tackling skill shortages, COAG has committed to:

- *Ensure quality of training outcomes* through the acceleration of the introduction of a national outcome-based auditing model and stronger outcome-based quality standards for registered training organisations.
- *Increase the mobility of the workforce* through full national mutual recognition of occupational licensing by December 2008 and by making it easier for immigrants with skills close to Australian standards to work as soon as they arrive.
- *Increase the flexibility and responsiveness of the training system* through the implementation of a competency-based apprenticeship system (replacing time-based approaches to the development of skills); removal of the barriers to the effective implementation of school-based apprenticeships; and recognition, as from January 2007, of existing skills ("Recognition of Prior Learning"), so that workers do not have to repeat or undertake training for skills already acquired on the job.

Source: COAG (2006), *Communiqué*, Council of Australian Governments, Canberra, 10 February.

The government's agenda on vocational education and training (*Skilling Australia for the Future*) features measures to increase the skills of the workforce and to eliminate the existing skill shortage. The Productivity Places Programme, commenced in April 2008, will provide over five years up to 630 000 places (for continuing training and to facilitate re-entry of those outside of the workforce), the majority of which should lead to high-level certificates. Empirical findings confirm the growing need for skills beyond a basic qualification by suggesting that 70% of the VET qualifications needed to meet the predicted demand will be in trade and post-trade levels (certificate III level and above) (Shah and Burke, 2006). The new training places will be delivered in an industry-driven system, accompanied by an outcome-based funding. Budget initiatives further support a better resourced and strengthened Industry Skills Council and the establishment of Skills Australia. The latter is a high level advisory board to oversee performance and provide recommendations to the governments about current and future skill needs.

Assessment and recommendations for further action

The new government's reform initiatives for VET are commendable in the light of evidence of fast growth in skill-intensive occupations and the potential benefits of better tailoring training to the needs of the economy and of more efficient funding. Flexible training arrangements, including the recognition of prior learning and fast-track apprenticeships with competency-based progression are of major importance for maximising the effectiveness of a demand-led training system. However, according to the Productivity Commission (2007), there appears to be some inherent tension between flexibility in VET arrangements and assurance of quality training outcomes, with COAG having agreed to speed up the introduction of a national outcomes-based auditing model and stronger outcomes-based quality standards for registered training organisations. Moreover, concerns arise that competency-based training leads to a short-term focus on specific tasks and skills related to existing jobs, with inadequate emphasis on broader vocational education and general skills.[21] Ensuring that the VET system is broadly based, delivering generic skills, in addition to solid specialist skills, is of major importance for lifelong learning. The explicit inclusion of some employability skills (such as communication, teamwork, and planning and organising) in the Training Packages[22] is therefore a welcome policy initiative. It is also necessary to ensure that training packages can be successfully implemented in both institutional (TAFE) and industry environments and that they are sufficiently updated to meet changing demand (TDA, 2007). The increased emphasis placed by the government on accountability for quality and on lifting the completion rates of VET is a welcome step towards enhancing the efficiency of training outcomes.

A more responsive and better performing VET system hinges upon greater competition among providers. Under current arrangements, the skewing of government funding to providers, along with the allocation of the bulk of funding to the TAFE sector, are seen as creating a barrier to the entry of private providers (Australian Industry Group, 2006). At the same time, restrictions on the financial and administrative autonomy of government providers limit their ability to compete. It may be the case, for example, that governments set mainstream course fees which do not reflect course costs, or that TAFEs are required to operate in higher cost regional and remote areas (House of Representatives, 1998). Moving to a more commercial governance model for TAFEs would strengthen their competitive position in the training market. The need to ensure that the accountability and flexibility of publicly-funded training organisations correspond to market needs was also highlighted by a communiqué by TAFE directors and Industry Skill Councils in December 2007 (TDA, 2007). The removal of federal and state inconsistencies at the policy and operational level is seen as an important priority in this context.

Reforming the model of funding allocation to give the consumers (employers and individuals) of training services greater flexibility is seen by employers as a way forward to a more competitive VET system. The allocation of new training places directly to industry, following a tender process guided by the federal government, is a step in this direction. Efforts could further focus on increasing the proportion of funds allocated through the User Choice scheme, enabling employers and apprentices/trainees to select their registered training organisation (whether public or private) and negotiate key aspects of their training.[23] The continuation of the voucher programme might also be considered by the government as an additional financial incentive mechanism. Unlike previous arrangements, however, that restrict the vouchers to low-level certificates, the programme should be targeted at high-level skills training. Given clear private benefits from training, individuals and employers should also contribute towards its costs, even though government financial support is justified as employers cannot capture all the returns from training due to transferability of skills (Australian Industry Group, 2006). A careful design of such a support is indispensable to avoid large deadweight losses (OECD, 2003).

Establishing more coherent links between schools, VET and higher education is a key challenge for the skill development process. The government's programme of trades training centres in schools is a welcome step forward. The extension of income-contingent loans to full-fee-paying students in Diploma and Advanced VET qualifications, announced in the 2007 budget, is a commendable initiative toward lifting the status of the VET system and reducing the likely distortions in student choices arising from different user charging arrangements in the VET and university sectors.[24] A more systematic approach to disseminate information on VET (including on the performance of various providers) and to provide effective career advice and counselling is essential for better understanding the patterns of required skills and the potential career paths available to school leavers.

Enhancing the responsiveness of the higher education system to globalisation challenges

The higher education system[25] has a number of distinctive characteristics, including: a predominance of enrolment in public institutions, a high degree of accountability, a coherent system of quality assurance, and an income contingent loan scheme for payment of higher education tuition charges (Higher Education Loan Programme, HELP), which has enabled a rapid expansion of tertiary institutions. The share of international students in tertiary enrolments is also high. At 17.8%, it is the highest in the OECD.

There appears, however, to be scope for improvement in a number of areas, including moving towards more flexible regulation and funding arrangements to increase the diversity and responsiveness of higher education to changing demand conditions. The complexity of regulation for higher-education providers raises additional policy issues. On the demand side, the main challenges include raising access to higher education for disadvantaged groups, especially for students from low socioeconomic backgrounds and for indigenous students.

Supply-side barriers to flexibility and diversity

Higher education institutions have a considerable autonomy in terms of staffing, course profile and internal allocation of resources. They must be mindful, however, of requirements coming from both the federal and state governments. The majority of public universities are established under state legislation, which specifies their governance, purposes and powers. In addition, the Commonwealth government, as the largest source of funding, exerts a significant control on university supply, even though reform initiatives since the beginning of the decade, especially the deregulatory measures in the 2007 budget, enhanced the operational flexibility of universities. The Commonwealth Department of Education has responsibility for administering the federal funding and developing and administering higher education policy and programmes (DEST, 2007). In a recent paper, the leading universities expressed the view that the current "highly regulated" approach restrains diversity in the provision of higher education and is also inconsistent with market orientation (Group of Eight, 2007). Under present arrangements, the funding agreement between the Commonwealth and a public university specifies the number of places and the discipline mix that the federal government will support. Universities in each field of study ("cluster") also continue to be funded at the same rate per place, irrespective of differences in operating conditions and their standards of learning and research. However, the funding rate of the clusters differs. In addition, for subsidised students (representing the largest group of domestic students), the maximum fees that universities can charge are fixed by the government. Through the funding agreements, the Commonwealth is further able to set targets for student enrolments at the national, state, institutional, campus and discipline levels (Corden, 2005). If a university exceeds the tolerance bands for over and under-enrolment it incurs a financial penalty.

Through its accountability framework, the Commonwealth is further able to monitor and assess universities' performance in terms of student outcomes and financial and research performance. In addition, the *National Protocols for Higher Education Approval*

Processes (agreed and given effect to by the Commonwealth and state governments) set out criteria which must be met before a new university can be established. They impose requirements in terms of teaching, scholarship and research. Concerns were raised that the National Protocols constrain diversity by preventing the establishment of institutions that only teach or only undertake research or are specialised in a narrow field of study. A side consequence might be the creation of regional universities which do not meet adequate quality standards. Such universities face increasing pressure by the regional communities to offer a broad range of courses and services that extend beyond those that would be considered viable for the population being served. Following public consultation, the Ministerial Council decided in November 2005 to retain the existing requirements for universities in terms of teaching, scholarship and research, with some variations in catering for the needs of new universities to build up teaching and research across at least three fields over an initial five-year period (DEST, 2007).

The complexity arising from the different roles of the federal and state governments with regard to the regulation of higher education providers raises additional challenges. There are significant variations between the states in terms of legal, regulatory and accountability requirements on universities (DEST, 2005). In addition to cross-jurisdictional differences, the regulatory system is made more complex by the involvement of the federal government. Current arrangements are often seen as leading to duplication and ambiguity of reporting requirements, while also raising concerns about the general level of requirements with which universities are obliged to comply. Following a public debate about the most desirable and effective balance of government responsibilities for higher education, the ministers responsible for the sector agreed in November 2005 on further work to promote national consistency and effectiveness in three major regulatory areas that are currently under the responsibility of state governments: universities' capacity to undertake commercial activities, governance and management of public universities, and recognition of universities and accreditation courses and providers. Existing arrangements in these areas are believed to impede efficiency and innovation (DEST, 2007).

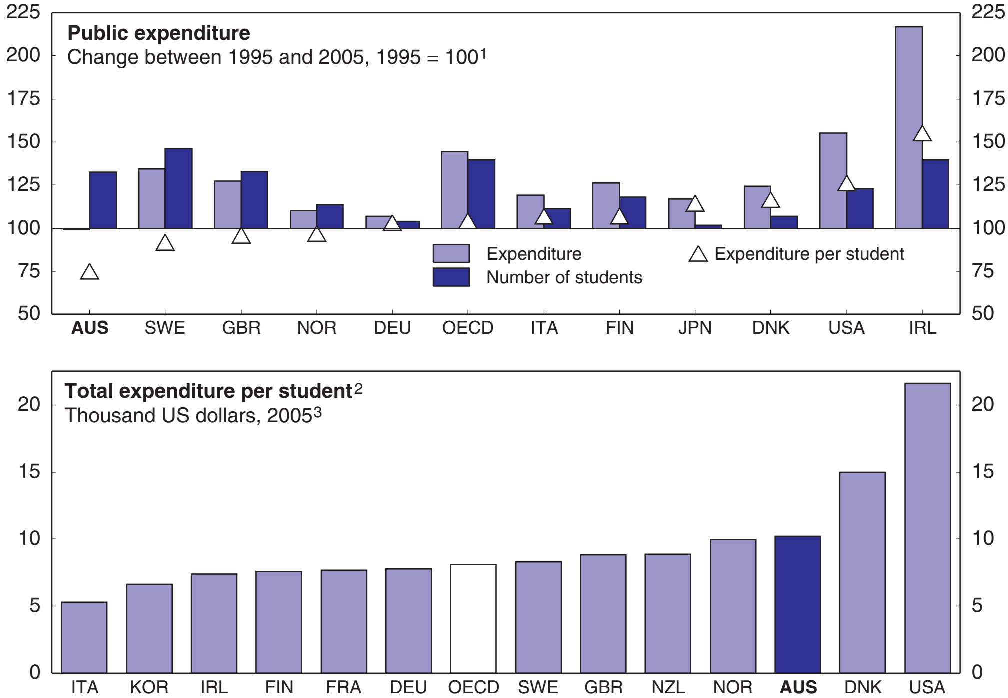
Is university funding adequate?

Public expenditure per student on tertiary education fell between 1995 and 2005 in real terms, reflecting a trend towards a greater use of private funding (Figure 3.9, upper panel). The share of Commonwealth grants in the revenue of publicly funded higher education providers fell from 60% in 1995 to 45% in 2006. Student payments through fees and loans and other private sources have thus become increasingly important sources of revenue.

The level of funding and the balance between federal and student sources are central issues in the debate about higher education, especially in light of their potential impact on enrolment and the quality of teaching and learning outcomes. Financial constraints are reflected in the sharp increase in the student-staff ratio (from 9.9 in 1998 to 14.9 in 2006), the doubling of the share of student fees and charges in total revenue of publicly funded institutions between 1994 and 2005, and an increased reliance on overseas students' fees, whose share accounts for over 15% of the total compared to only 6.5% in the mid-1990s. There are also signs of supply constraints: estimates suggest that the unmet demand was 14 200 student places in 2006, though this is down from a peak of 36 100 in 2004 (DEST, 2007).

Many of the financial pressures facing universities are traceable to the introduction of enterprise bargaining as the industrial relations system for public universities in the 1990s. This change implied the end of automatic coverage of cost increases by the government

Figure 3.9. **Expenditure on tertiary education**



StatLink http://dx.doi.org/10.1787/471864147773

1. Expenditure on educational institutions for all services in 2000 constant prices using the GDP deflator.
2. Expenditure on tertiary educational institutions excluding research and development activities except for Denmark. Public institutions only for Italy.
3. In equivalent US dollars converted using purchasing power parities for GDP, based on full-time equivalents.

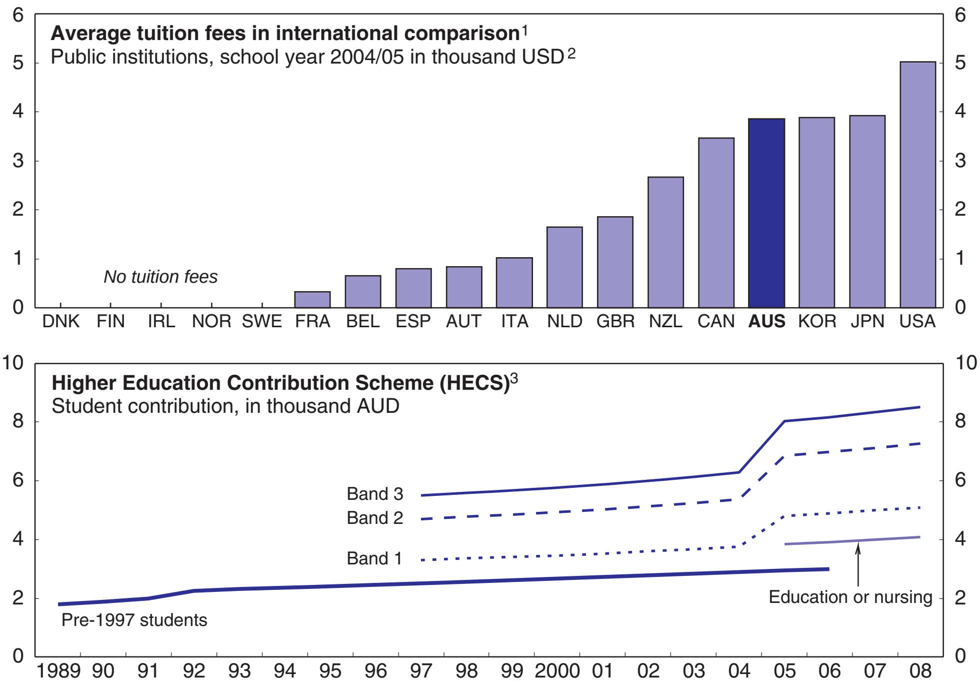
Source: OECD (2008), *Education at a Glance*, OECD Publishing.

resulting from centrally determined wage setting. Grants to universities were indexed, instead, to a combination of the cost of living and a so-called “safety net adjustment” (applied to the lowest-paid workers) (Corden, 2005). Measures taken from 2004 have helped to moderate the erosion in funding rates per student. The recent discussion paper by the eight leading universities, assesses the higher education system as “under-resourced”, despite improvements, citing insufficient indexation for rises in major costs, still inadequate funding per student and limits on tuition fees as the main reasons for this under-funding (Group of Eight, 2007). Australian tertiary institutions, though, are better resourced than similar institutions in a number of OECD countries (Figure 3.9, lower panel).

Student participation in higher education – the impact of HECS

The average tuition fee for domestic students in public institutions is among the highest in the OECD, although estimates across countries are not always comparable (Figure 3.10, upper panel). Since 1989, when the income contingent payment scheme (Higher Education Contribution Scheme, HECS), was enacted, student fees and debt of graduates have risen considerably (Figure 3.10, lower panel). A number of studies have assessed the impact of the introduction and subsequent changes to the scheme, with a particular focus on students from disadvantaged backgrounds. On balance, the evidence suggests that participation increased with the introduction of tuition fees, as it has contributed to the expansion of the higher education sector, with the benefits spreading

Figure 3.10. **Tuition fees for higher education students**



StatLink http://dx.doi.org/10.1787/472060608560

1. Data to be interpreted with caution as it results from the weighted average of the main tertiary-type A programmes (for national students) and does not cover all the educational institutions. However, the figures reported can be considered as good proxies. Government dependent private institutions for Belgium and the United Kingdom.
2. In equivalent US dollars converted using purchasing power parities.
3. The band applied depends on the discipline being studied, for example: band 1 covers law and medicine, band 2 accounting and engineering, and band 3 humanities.

Source: OECD (2008), *Education at a Glance*, OECD Publishing and Universities Australia, "History of HECS 2008" data file, available at *www.universitiesaustralia.edu*.

across the whole socioeconomic spectrum.[26] International comparisons appear to support the view that loans facilitate access to tertiary education. Countries with large student loan programmes have above-average enrolment and graduation rates (OECD, 2007d).

A source of concern is that the share of students from disadvantaged backgrounds in higher education remained broadly unchanged between 1991 and 2005, at around 15% of total domestic students, despite the increased opportunities for higher education. However, Cardak and Ryan (2006) concluded that students from low or high socioeconomic groups were equally likely to attend university, once tertiary entrance scores are controlled for. The university participation rates of students from low socioeconomic families were much lower than those from the more advantaged backgrounds, because they tend to fall away academically at school so that, by Year 12, they are less likely to obtain a university entrance score, and when they do, they obtain a lower score, on average. Among students with similar literacy and numeracy skills in Year 9, those having more advantageous backgrounds are more likely to have higher university entrance scores than similar students from lower backgrounds. Overall, Chapman and Tulip (2008) conclude that the scheme did not result in a decline in higher education participation of prospective students from relatively poor backgrounds, as originally feared. But some evidence exists that the introduction of differential fees in 1997 induced a small number of males with low

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socioeconomic backgrounds to switch to courses with lower fees, although it did not discourage these individuals from attending university *per se* (Chapman and Ryan, 2003). This finding may be of particular importance in explaining chronic shortages in specific occupations (such as engineers and accountants).

Student income support

The student loan programme helps students to overcome up-front financial barriers to higher education. However, unlike other programmes that also cover living expenses (such as in New Zealand, the United Kingdom and the United States), the Australian loan scheme only covers fees. Students therefore need financial support during their years of study. In fact, many students indicated in a survey that they undertook substantial hours of work to meet basic necessities, transport, as well as study-related expenses (James *et al*., 2007). Around 70% of full-time undergraduates were in paid employment during a semester in 2006, compared with 50% in 1984. Hours of work have also become longer. International comparisons suggest that Australian students are much more reliant on employment to support themselves through study than students in a number of European countries (Eurostudent Report, 2005).

The impact of paid part-time work has been the subject of considerable discussion, especially in light of its increasing trend. Whereas, on the basis of empirical evidence reasonable hours of paid work do not have, in general, adverse consequences on study, and can even be beneficial, long working hours can create difficulties for students to balance work and study responsibilities (DEST, 2007). A survey undertaken in 2006 indicates that a relatively large proportion of undergraduate students (22.7% of full-timers and 37.4% of part-timers) reported that they regularly missed classes for work-related reasons (James *et al*., 2007). Indigenous students are at a significantly greater disadvantage than other domestic students both in terms of reliance on paid work and the proportion of students frequently missing classes.

Recent changes in income support arrangements include an extension of rent assistance to students over 25 years on Austudy grants, extension of payment eligibility to Master's students undertaking professional qualifications, and additional support for indigenous students. They provide greater financial assistance for many students and reduce inequalities between recipients of different payments. These measures, however, do not address the highly restrictive access to income support schemes, as a result of a combination of parental means testing and age as financial independence criteria.[27] The increasing number of students in 2006 whose applications for income support were rejected provides evidence for this. In addition, high benefit withdrawal rates under the current welfare arrangements imply that, for every dollar a student earns from paid work above AUD 236, the income support payment (Youth Allowance and Austudy) will be reduced by 50 to 60 cents. The structure of the main income support scheme also reduces incentives for mobility for students under 25 (the age of independence from parental means testing), restricting choice among universities outside their local area (although students in receipt of income support living away from home are eligible for the higher away from home payment and potentially rent assistance) (Group of Eight, 2007). Finally, despite recent improvements, inequalities between recipients remain; this is the case, for example, of different payment rates depending on whether a student has come directly from school or had a spell of unemployment.

Quality considerations

Australia has a comprehensive quality assurance system. It comprises the National Protocols for Higher Education Approval Processes, which focuses on institution registration and course accreditation; the national qualifications framework; and external quality audits, conducted by the Australian Universities Quality Agency in a five-year cycle. The findings are published. Concerns were raised, however, about the absence of an evaluative approach to educational outcomes of higher education, reflecting allegations of "soft-marking" of international students (James, 2003). The debate highlighted the need for improving the mechanism for assuring quality of education outcomes, with a "whole-of-institution approach" to auditing in the first cycle of audits being a focal point. Such an approach, in particular, did not explore issues of standards on a detailed discipline-by-discipline basis but focuses on quality assurance processes, auditing a university against its own plans and objectives (Macklin, 2006).

In late 2006, the quality agency announced that it would put greater focus on the assessment of outcomes in 2008, with emphasis on the assessment of teaching, scholarship and university research. Under the "second cycle" of audits, institutions are expected to provide an overview of benchmarking activities and outcomes undertaken since the last audit, with an emphasis on the impact of such benchmarking on the institution's outcomes (Chalmers, 2007). The quality agency will not set standards for the universities, which are self-accrediting and autonomous institutions, but it will make recommendations on areas in need of substantial improvement, with the possibility, in extreme circumstances, to recommend that an activity or course be discontinued.

Assessment and recommendations for further action

The new auditing framework is an important step towards establishing cross-institutional reference points for academic standards and ensuring a reasonable level of consistency across the system, though questions remain about the choice of standards to be used and their measurement (Australian Government, 2008). An evaluative approach to educational outcomes is also required in light of the regional provision of higher education, especially because of indications of a shift in demand for higher education places in 2006 away from regional universities towards the more prestigious metropolitan universities (DEST, 2007).

Moving towards a less rigid policy framework for higher education would promote flexibility and diversity, making the system more responsive to changing needs and challenges. The removal in early 2008 of workplace relation (requiring an individual workplace agreement to be made for each new employee) and governance conditions attached to federal funding for universities is a step in the right direction. The government further reduced the number of funding clusters (from 12 to 7), while increasing funding for many disciplines. The government's commitment to put an end to the current "one-size-fits-all" model of funding and to allow, through the introduction of "mission-based compacts" in 2010, funding arrangements that recognise both breadth of university activities and the difference between institutions is commendable. The new funding framework will increase the operating autonomy of universities and enhance their ability to respond to change facilitating a more diverse higher education section. At the same time, it will include accountability measures to ensure that appropriate educational outcomes are achieved.

The adoption of a more demand-oriented approach should be considered. It would have potential benefits in terms of enhanced competition and efficiency, as it would increase incentives for higher education institutions to respond to student needs in the design and delivery of courses leading to a greater variety of offerings in terms of price and quality combinations (ACCI, 2007). Importantly, it has been suggested that the advantages of centralised planning have diminished, as the provision of higher education has become too complex and students are now better-informed (Barr, 2005). Empirical results suggest that changing tertiary education systems in the direction of higher supply flexibility is likely to raise graduation rates (Oliveira Martins *et al*., 2007).

Shifting to a more demand-oriented approach would require that the central allocation of places be abandoned, or relaxed further, with financing following students. In order to avoid very high charges and "economic rents" accruing to highly-respected institutions, it might be necessary for the government to set an upper limit on contributions (Karmel, 2000). Indispensable for the introduction of a demand-led system is to ensure that better information is provided to applicants. This could be achieved, for example, through an easily accessible and frequently updated database for prospective students with information on wages and employment of recent graduates, accompanied by guidance and counselling in upper secondary schools (OECD, 2008). A case could be made for a supplementary funding mechanism to ensure provision of fields of knowledge that are considered to be of national or regional importance, but are neglected in a consumer-led system (Group of Eight, 2007).

The provision of income-contingent arrangements and improved income student support mechanisms are an essential underpinning for removing barriers to access and ensuring equity. The reduction of the age of independence from parental means testing could be considered, while raising the extent of student support for living expenses (on a means-tested basis) would be in line with international practice. In view of the skill shortages, budget initiatives (including reducing the maximum annual HECS charges and introducing strategic HECS debt remissions) to encourage the supply of graduates in occupations, such as mathematics and science, and increase the attractiveness of national priority disciplines (for example, teaching), are steps in the right direction. Reductions in the funding burden on students, however, including the phasing out from 2009 of full-fee undergraduate places in public universities, while worthwhile, would need to be matched by increases in public funding. The establishment in May 2008 of the Education Investment Fund (which absorbs and extends the AUD 5 billion Higher Education Endowment Fund) could help in this respect. The ongoing review of higher education (Bradley Review) should be a useful vehicle for monitoring the performance of the system, helping to identify potential reform areas (Australian Government, 2008).

Summary of recommendations

The Australian education system compares well in an international context on certain indicators, such as the PISA scores. However, important challenges remain in all education sectors, especially in the critical area of early childhood education and care where complexity and fragmentation raise important issues about variation in service quality and access. The government's commitment, as part of its comprehensive agenda "Education Revolution", to provide a universal access to early childhood education for all four year-olds by 2013 and to increase the supply of qualified early school educators goes in the right direction. The extension of the right to three year-olds and longer duration of the services provided are both to be recommended. A real challenge remains to tackle the problem of the under-representation of children from disadvantaged groups, ensuring that all children have equal opportunity to attend quality ECEC. At the school level, strategies to counteract the effects of disadvantaged backgrounds on performance should continue. Consideration should be given to reforming the school funding mechanisms to take into account differences in the socioeconomic backgrounds of students. Enhancing the capacity of the VET system to address skill shortages is of great importance for the sustainability of growth. Recent reform initiatives aiming to increase the skills of the workforce and eliminate the existing skill gaps are therefore welcome, as is the introduction of a more demand-driven provision of training, accompanied by an outcomes-based funding. Finally, less rigid policy frameworks for school and higher education sectors would promote flexibility, making the education system more responsive to changing needs and challenges. Policy recommendations are presented in Box 3.3.

Box 3.3. **Recommendations on education**

Early childhood education and care (ECEC)

- Move towards a more integrated system of ECEC with greater consistency in policy and services across the child-care and early education sectors. Ensure appropriate mechanisms for monitoring policy implementation and performance.
- Increase spending on ECEC, with a focus on the provision of quality services for children from disadvantaged groups.
- Proceed with the provision of universal access to early childhood education for four year-olds. Consideration should be given to extending universal access to three year-olds, focusing initially on disadvantaged groups, and increasing the duration of services beyond 15 hours per week.
- Efforts towards improving affordable quality child-care facilities should continue. Ensure sufficient provision of services in rural and remote areas. Reduce the under-representation of children from disadvantaged groups.
- Reform the current staffing regime, bridging the split for pre-school teachers and staff for child care. Address the low status, pay, training levels and poor working conditions of the ECEC staff, especially in the case of personnel in the child-care sector.
- Proceed swiftly with the development of a more streamlined accreditation system, ensuring its rigorous and transparent implementation. Develop a national framework that ensures consistency of supply, funding and quality for all ECEC services, including pre-school education in addition to child-care services falling under Commonwealth programmes.

School education

- Enhance upper secondary educational attainment by improving the quality and standing of VET programmes in schools. Proceed with the implementation of Trade Training Centres in Schools programme, monitoring closely and evaluating its effectiveness.

Box 3.3. **Recommendations on education** *(cont.)*

- Ensure that the education system provides all school leavers with a minimum educational attainment level. Consider raising the compulsory school age for those students who have not already achieved a certain minimum standard of core skills by the end of their compulsory school attendance.
- Continue strategies to counteract the effects of disadvantaged backgrounds. Reform the school funding mechanisms to take better into account the different socioeconomic backgrounds of students.
- Move towards a less centralised management governance structure and less strict entry and exit regulations for schools. School principals should be given autonomy in recruiting and rewarding in order to attract and retain experienced teachers.
- Change the system of teacher career progression, which imposes an upper limit for salaries nine years after graduation, to help keep the best teachers. Teacher remuneration systems should create appropriate incentives so that teachers move to schools, where high-quality teaching is most needed.
- Ensure greater cross-state consistency of schooling though the development and implementation of a national curriculum. Adopt a common final certificate and eliminate differences in the basic structure of schools.

Vocational education and training (VET)

- Ensure that the VET system is broadly based, delivering generic skills, in addition to solid specialist skills. Training packages need to be updated regularly to meet changing skill needs. Keep the emphasis on accountability for quality and on lifting the completion rates of VET.
- Move towards a more commercial governance model for the institutes of Technical and Further Education (TAFE), by allowing, for example, course fees to reflect at least partly the cost of courses.
- Reform the funding mechanisms of VET to foster competition among providers and make these mechanisms more consumer-oriented. Assess the responsiveness of training to the industry's needs and the quality of training outcomes.
- Establish more coherent links between schools, VET and higher education. Develop a more systematic approach to disseminating information on VET and ensure the provision of effective career advice and counselling.

Higher education

- Make the higher education system more demand oriented, with financing following students. Ensure that applicants have easy access to a frequently updated database on wages and employment of recent graduates, and sufficient guidance and counselling in upper secondary schools.
- Reduce the complexity of regulation for higher-education providers arising from the shared responsibilities for the sector of the Commonwealth and state governments.
- Remove barriers to higher education for students from disadvantaged socioeconomic backgrounds. The reduction of the age of independence from parental means testing should be considered, while raising the extent of student support for living expenses (on a means-tested basis) would be in line with international practice.

Notes

1. Adult and community education constitutes a fourth, less well-defined sector with minimal regulation.
2. These figures do not include expenditure on child-care services or a significant number of students aged five years old, who are included in the primary school figures.
3. Early childhood statistics in Australia reflect enrolments in registered pre-school institutions, which overwhelmingly cater for the year prior to primary school. As the pre-school census is held in August, the students will mainly be in the four and five year age groups.
4. The data refer to government funded and/or provided pre-schools. According to SCRGSP (2008), there are issues of double-counting in several states and synchronisation of data collection times. In addition, definitions vary across states and participation rates are calculated on the basis of the four year-olds, although some children may be aged three or five years old in their pre-school year (Kronemann, 2007).
5. The relevant indicator is defined as the proportion of children using children's services who are from the targeted special needs groups, compared with the representation of these groups in the community.
6. Empirical findings by Access Economics (2005) suggest that increasing the proportion of young people who obtain Year 12 or equivalent certification by 10 percentage points could raise national income by 1.1% by 2040.
7. Further to the PISA findings shown in Figure 3.4 (lower panel), evidence from the 2005 National Report on Schooling in Australia further indicates that 36% of indigenous children in Year 7 have failed to meet the minimum reading standards, compared with an average of 10% for all students. The corresponding results for the numeracy tests stand, respectively, at 51% and 18%.
8. For a discussion see Press and Hayes (2000) and OECD (2001a).
9. Based on OECD (2006a), the percentage of the qualified staff stands at around 26% in family care, 55% in long day care, and 57% in pre-schools. Long day care centres require one qualified staff per 20-25 children (depending on the state).
10. Davidoff (2007) concludes that child care remains "accessible and affordable" at the aggregate level. The Commonwealth study questions whether accessibility is a problem when consumer choice is taken into account. Assessing the share of net income spent on the child-care facilities against an estimated benchmark for low-income families, Davidoff also infers that child-care costs are affordable for most users, even though the child-care index has increased faster than the consumer price index since the beginning of the decade.
11. South Australia, for example, is implementing an integrated approach to the delivery of pre-school education and care within its schools, while in Victoria government funds early childhood teachers in child-care settings. The NSW government has also announced plans to locate early childhood education and care in schools.
12. The reforms aim at removing overlaps and duplication between state and Commonwealth regulations and reducing red tape for service providers. They also require child-care services to meet 100% of the standards, with the possibility to impose sanctions for non-compliance.
13. The Framework puts specific focus on play-based learning, communication and language (including early literacy and numeracy) as well as personal, emotional and social development.
14. Rush (2006), for example, cites that only one of the 67 centres in New South Wales that were reported by the inspectors from the Department of Community Services to have breached their licence in 2005 has been successfully prosecuted.
15. Both the "concurrent" (combining general education in one or more subjects with theoretical and practical training) and "consecutive" (providing most of the practical training after a general education is provided) models of teacher education are available in Australia (OECD, 2005b).
16. School education is delivered through both government and non-government (Catholic and independent) providers. Government schools are those operating under the direct responsibility of the relevant state department. Non-government schools are fee-paying schools and not-for-profit organisations. The term "private schools" is used in the chapter to denote non-government schools.
17. These include the Interstate Student Data Transfer Note, which provides an agreed system for the transfer of student information when a student transfers to an inter-state government or non-government school.

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18. These comprise the establishment in January 2008 of a National Curriculum Board, which includes state representatives and will oversee the development of the curriculum.
19. Entry, exit and expansion of government schools are subject to approval of the state's education minister. New schools in both the government and private sector must meet minimum entry requirements. In addition, private schools are subject to state procedures examining and assessing the potential effect of an entry or change of such schools on existing government and non-government schools within the same area. A number of states further impose minimum enrolment rates on private schools (Novak, 2006).
20. About 50% of early school leavers aged 24 years or younger and over three-quarters of adults over 25 without a post-school qualification participate in VET. Second-chance learners comprised 41% of publicly funded VET students in 2004 (Karmel and Woods, 2008).
21. For a discussion, see Cornford (2006) and Australian Industry Group (2006).
22. Training packages are sets of nationally-endorsed standards and qualifications for recognising and assessing skills.
23. User Choice amounted to less than 20% of government VET funding in 2004 (Australian Industry Group, 2006).
24. For a discussion, see Productivity Commission (2005) and Chapman, Rodrigues and Ryan (2007).
25. The higher education sector comprises 39 universities (37 public and 2 private), which are self-accrediting institutions (*i.e.* authorised by the government to "accredit" or approve its own awards), and over 150 eligible non-self-accrediting providers accredited by the state authorities.
26. For a detailed description of the HECS system and the amendments introduced over time and a review of empirical studies on the HECS, see for example, Chapman and Ryan (2003) and Chapman (2005).
27. Under existing arrangements, students' eligibility for income support (Youth Allowance) is assessed against parental income and assets, while they are considered to be financially dependent on their family. The age of independence from parental means testing is 25. Students at or above this age are eligible for means-tested Austudy grants while younger students who can demonstrate financial independence through meeting specific workforce participation requirements are eligible for Youth Allowance.

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Chapter 4

Enhancing the functioning of product and labour markets

The product and labour market reforms since the early 1990s have played a pivotal role in enhancing employment and productivity, and ultimately growth performance. Despite this progress, important margins still exist for improving the functioning of product markets and a new reform wave was launched with the National Reform Agenda (NRA), and more recently, the COAG reform agenda. It is also necessary to cut red tape and to reduce the geographical segmentation of markets, which hampers efficiency. In the case of the labour market, the main challenge is to preserve flexibility following the phasing out of some aspects of the WorkChoices reform, which led to equity concerns. This chapter reviews the government's reform projects that aim at enhancing product markets and revising the industrial relations system and provides an assessment of ways to further improve them.

The product and labour market reforms since the early 1990s have brought important economic benefits. Vigorous enforcement of the updated competition law and of an improved regulatory system, has spurred businesses to control costs and boost efficiency. Substantial strides have been taken in infrastructure management thanks to the measures introduced by the National Competition Policy (NCP). Vertically integrated state-controlled sectors such as telecommunications, rail transport and energy were restructured and opened up to competition. This fostered greater involvement by private companies and led to improvements in the quality of service, efficiency gains and price cuts which, according to the Productivity Commission (2005), resulted in a 2.5% rise in the level of GDP. These beneficial effects were reinforced by labour market reforms. They have gradually simplified and decentralised the system of industrial relations, have been conducive to a decrease in structural unemployment (Lye and McDonald, 2006) and have spurred productivity gains in highly human-capital-intensive sectors (Tressel, 2008).

Despite this progress, efficiency gains are being held back by the geographical segmentation of product markets resulting from disparate regulations of states. This fragmentation affects for instance consumer protection, environmental legislation and occupational health and safety standards. States have also held on to power over numerous other sectors, including energy, water management, port services and much of rail transport. The involvement of multiple stakeholders whose interests do not always converge distorts resource allocation, and hampers co-ordinated planning of capital investment at a time when demand is putting heavy strains on infrastructure. Productivity gains can also be reaped by cutting red tape and improving regulations. While there is broad consensus on product market reforms, there has been much debate over labour market issues, especially when the WorkChoices Act came into force in March 2006. That reform, while instilling greater flexibility in line with the changes adopted since the early 1990s, made significant breaks with the system previously in place. The main criticism is that it tipped the balance of industrial relations too far in employers' favour. The phasing out of some of the aspects of the WorkChoices reforms by the new government and the implementation of additional changes pose the traditional dilemma between fairness and efficiency at a time when it is important both to avoid contagion from wage hikes in booming industries or regions on the rest of the economy, and to facilitate the reallocation of labour to the most profitable sectors.

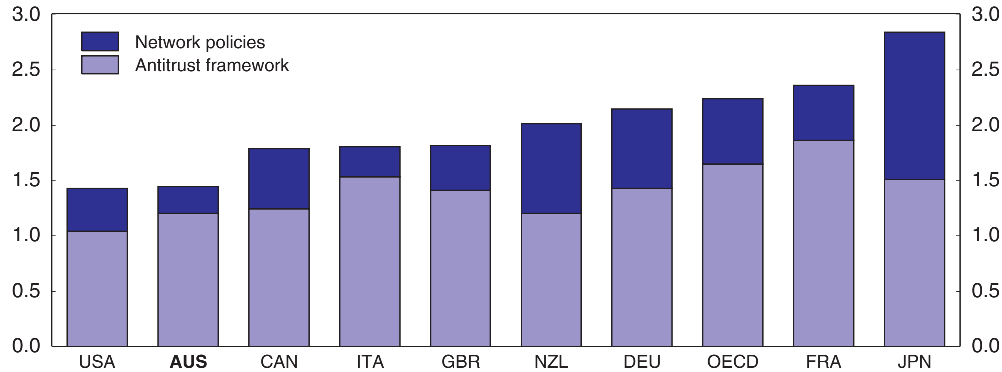
Against this backdrop, this chapter will assess the authorities' reform proposals, starting with product markets, which is the focus of the National Reform Agenda. Its scope was broadened in March 2008, and its implementation speeded up in July 2008 (COAG, 2008a and 2008b). After reviewing how the general regulatory framework could be improved, the need to simplify and harmonise economic regulations is analysed. This is followed by a review of some key areas: energy, broadband Internet services and freight. Next, the chapter takes up labour market issues. The last section lays out the main conclusions and recommendations.

Product market regulations should be improved

Australia's legal framework is competition-friendly (Figure 4.1). Compliance with the Trade Practices Act (TPA), which also encompasses consumer protection and the regulation of network monopolies, is enforced by the Australian Competition and Consumer Commission (ACCC). Strict enforcement of these provisions over the past decade has had beneficial effects. The legal framework has been improved in recent years, especially with regard to predatory pricing policies, the strengthening of sanctions against cartels and consumer protection.

Figure 4.1. **Competition law and policy indicator**[1]

Indicator scale of 0-6 from most to least conducive of competition, 2003



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1. The antitrust framework indicator measures the scope and enforcement of law and the independence of the competition authority, and the network policies indicator measures the independence of sector regulators and network access. These two indicators are combined to measure the strength of overall competition policies using weights of 0.75 for antitrust framework and 0.25 for network policies. The OECD aggregate is an unweighted average of 25 countries.

Source: Hoj, J. (2007), "Competition Law and Policy Indicators for the OECD Countries", *OECD Economics Department Working Papers*, No. 568.

Revisit the recent reform on predatory pricing practices

As in other OECD countries, small and medium-sized enterprises (SMEs) have called for stronger measures against what they contend is unfair competition and predatory pricing by large companies. In an effort to strengthen the protection of SMEs, the TPA was amended in September 2007 to forbid "[a] corporation that has a substantial share of a market [from supplying], or offer[ing] to supply, goods or services for a sustained period at a price that is less than the relevant cost … for the purpose of … eliminating or substantially damaging a competitor … or … preventing the entry of a person into that or any other market".

This amendment poses a number of problems. Market share is not the same thing as market power; at best, a high market share might indicate where to begin the detailed analysis that is needed to identify market power. Competition may be brisk in highly concentrated sectors if barriers to entry are low. Other important factors, such as the definition of the relevant costs and the duration of the practice, are also difficult to pin down. This has prompted the new government to revisit the amendment, to improve the definitions, while reducing the cost to SMEs of bringing claims against predatory pricing and eliminating the requirement to show that the alleged predator could recoup its losses.

While the revision introduced into Parliament in June 2008 might clarify the definition of abuse of market power, it will take time and more court rulings to interpret the new provisions. The changes warrant an *ex post* evaluation of their impact. Issues raised by predatory pricing practices are indeed among the trickiest to resolve, as shown by the persistent disagreements amongst OECD countries as to how to proceed (OECD, 2005a).

Strengthen anti-cartel legislation

Australia, like other OECD countries, has a leniency programme. It led to the discovery of the largest cartel ever detected in Australia, with record fines of nearly AUD 40 million in September 2007. Nevertheless, the financial penalties that courts are willing to impose against corporations seem insufficient to deter cartel conduct. The introduction of criminal penalties against the persons responsible for hard-core violations, such as price fixing, as recommended in 2003 by the Dawson Committee, would significantly strengthen deterrence. In January 2008, the government launched consultations on draft legislation providing for penalties of up to five years' imprisonment for managers found guilty of such offences. The threat of imprisonment would be a useful complement to fines against executives, which can already be imposed but whose dissuasive effect seems limited. The introduction of criminal sanctions would bring the Australian legislative framework closer to that of the United States, Canada, Ireland and the United Kingdom. International experience suggests, however, that in order to be credible and effective, the application of criminal sanctions should be limited to the most serious violations, particularly horizontal price fixing and equivalent offences such as bid rigging. Changes would also be needed so that public prosecutors would be involved in the decision to grant immunity to a cartel whistleblower.

The fear of credible sanctions against individuals would enhance the effectiveness of the immunity programme. Its effectiveness could be weakened, however, by the risk of paying civil damages, particularly in class action suits. These could become more common, since the High Court has authorised third-party litigation funding for them.[1] The courts usually grant plaintiffs access to the information provided by cartel whistleblowers, and to information gathered by regulators during their investigation. This information can be used in class-action suits, even against firms that have co-operated (Baxt and Labrocca, 2007), since the immunity granted by the ACCC protects against prosecution and fines imposed by regulators but not against recourse by aggrieved third parties. To maintain the effectiveness of its immunity policy, Australia's draft cartel criminalisation legislation contains provisions to limit third parties' access to information concerning applications under the immunity programme, similar to steps that have been taken in the United States and New Zealand.

Establish a coherent and more effective nationwide framework for consumer protection

The current national regime for consumer protection legislation dates back to 1983, when the federal and state laws were brought into alignment. Work by the Productivity Commission suggests that this scheme has become excessively complex because it lacks coherence and clear-cut objectives owing to overlapping regulations. It also suffers from gaps with regard to recourse in the event of injuries as a result of violations of consumer protection legislation (Productivity Commission, 2008a). Responsibilities in this area are shared between the federal government and the states. The TPA's consumer protection provisions apply only to firms that do business in more than one state or who operate internationally. Firms operating in a single jurisdiction are subject to the Fair Trading Act for that jurisdiction. Alongside these laws are specific provisions in many sectors, at both the federal and state levels, as, for example, in the electricity, lending, real estate and car sales sectors.

The fragmentation of consumer regulation contrasts with the consumer and business environment, which is characterised by increasingly globalised markets and the declining importance of state borders in most sectors. There are many examples of inadequate regulations. In the real estate sector, for example, the cooling-off period for the buyer of a property varies between zero and five business days and there are inconsistencies with regard to sales of homes at auction (REIA, 2007). Estate agents located in cross-border areas like Canberra/Queanbeyan and doing business in both jurisdictions are required to hold separate licences, maintain two licensed agencies and have two distinct escrow accounts. Moreover, regulatory divergences tend to widen: in 2003, Victoria introduced special regulations against unfair contracts, which distinguishes it from other jurisdictions, and more recently New South Wales and Victoria adopted different provisions for telemarketing (Productivity Commission, 2007a).

According to the Productivity Commission, a rationalisation of consumer protection policy that included consistent nationwide legislation, along with mechanisms for strict enforcement and improved recourse procedures, could increase GDP by AUD 1.5 to 4.5 billion (Productivity Commission, 2008a). The Commission has recommended implementation of a national generic consumer law, based on the provisions of the TPA. Its adoption by all of the states would entail greater national consistency of consumer law and enforcement, and an enhanced coordinating role for the central government. The Commission also explored the option of a concomitant centralisation of regulatory authority in the hands of the ACCC, but concluded that, for the time being, enforcement should remain shared between national and state agencies. At the same time, it recommended that sectoral regulations used in only one or two jurisdictions[2] be repealed, and that possibilities for interstate harmonisation of the specific sectoral regulations be explored. A uniform approach has already been recommended for consumer loans and energy. New measures ensuring stricter enforcement of consumer laws have been proposed as well. These include provisions that would enable unfair contract terms in standard form contracts to be voided, and also give consumers better recourse against violations, including new possibilities for obtaining civil damages. All of these proposals go in the right direction and warrant swift review and implementation by the authorities, who have agreed to enhance the implementation processes that apply to consumer policy, including the role of the Ministerial Council on Consumer Affairs.[3] In May 2008, this Council decided to create a single national product safety regime by 2010 and to give stronger powers to ACCC to enforce it. In addition, the federal government has agreed to promote the adoption of the national framework proposed by the Productivity Commission to protect consumers. Along with these measures, there could be an improvement in retail product labelling so that not only the total price (including taxes and any other charges) features systematically and clearly, but the unit price as well (*e.g.* the price by unit of weight), as in the EU countries. This obligation, which is currently under consideration, would enhance the transparency of information and facilitate consumer choice.

Regulations must be further simplified and harmonised

The multiplicity and complexity of regulations carry a high price

Although product market regulations are competition-friendly, the considerable increase in the volume of regulations in recent years is a source of growing concern (Figure 4.2). The federal Parliament has passed more pages of legislation since 1990 than in the nine previous decades, and a similar trend has been observed for state and local governments. The cumulative impact of these laws has become a serious compliance problem, especially for SMEs. The effect on them is greater because of their lower capacity to cover the fixed costs.

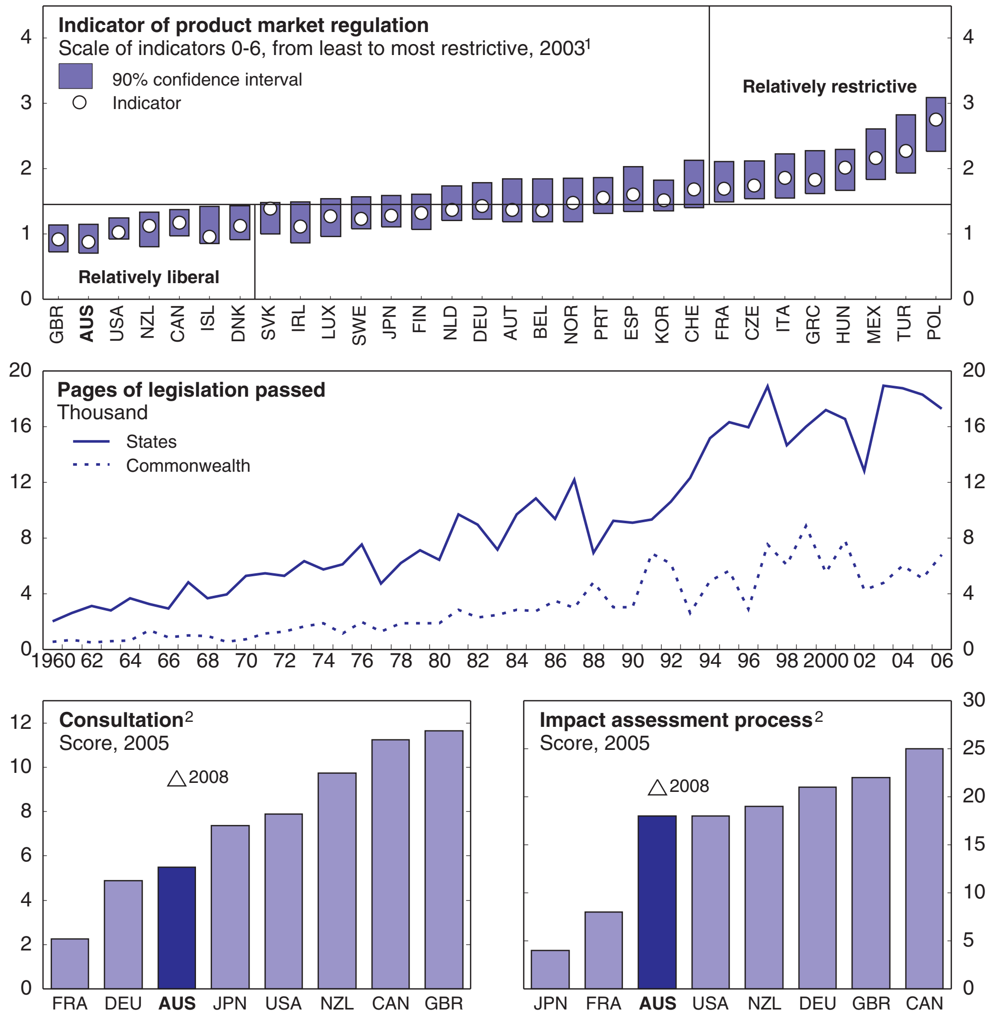
The burden of these costs could amount to as much as 4% of GDP per year (Productivity Commission, 2006a). But this estimate, which incorporates only the most visible direct costs, such as licence payments, time devoted to managing red tape or the purchase of outside expertise, would seem to be an underestimate. It does not factor in the costs incurred by government agencies to formulate, introduce and enforce regulations, nor the indirect adverse effects on efficiency, resource allocation or price increases. A significant reduction of administrative burdens would seem possible, judging from international experience as many European countries have set up targets of up to 25% for the reduction of these burdens. As stated in a recent study (Regulation Taskforce, 2006), this would entail not only a slowdown in regulatory growth but also correction of design and implementation faults: *i)* insufficiently clear objectives; *ii)* unnecessary or poorly targeted regulations; *iii)* confusing or complex regulatory definitions; *iv)* unjustified differentiation from international standards; and, in some instances, *v)* overly zealous and legalistic enforcement. According to preliminary results from the 2008 update of the OECD indicators of regulatory management systems quality, the regulatory impact assessment and the consultation processes have improved in recent years, which will contribute to improvements of the quality of new regulations in the future (Figure 4.2). However, despite this progress, Australia is still lagging somewhat behind the top performers.

These problems affect all levels of government and are aggravated by the country's federal structure, which contributes to regulatory overlap, duplication and inconsistencies. They increase costs for firms that do business in more than one state, the number of which has risen sharply in recent years.[4] The Business Council of Australia has estimated the efficiency gains resulting from regulatory reform eliminating these duplications and inconsistencies could be more than 1.6% of GDP (BCA, 2008). These differences force companies, for example, to prepare multiple sets of accounts and tax information, or to administer multiple occupational health and safety programmes, depending on where their employees work. Another consequence is variable product safety and labelling standards, and it compels firms to deal with various levels of government in complying with environmental standards. There are disparate trends in environmental legislation: New South Wales adopted almost as many laws (68) in this area since 1986 as all the other states combined (84), whereas only 19 federal laws were adopted over the same period (NSW Business Chamber, 2007).

Current efforts to simplify and harmonise regulations must be pursued

Given the rising number of complaints from businesses, measures have been put in place to simplify and harmonise regulations. These have revolved around two main objectives at the federal level. The *first* involves reviewing the stock of existing regulations.

Figure 4.2. **Indicators of the quality and quantity of regulation**



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1. The country groupings are based on 90% confidence intervals which are calculated using stochastic weights on the low-level indicators to generate a distribution of overall product market regulation indicators for each country. The 90% confidence intervals are calculated from that distribution. Indicator values for the "relatively liberal" and "relatively restrictive" countries are significantly different at the 90% level of confidence.
2. A higher score indicates a better framework. See Jacobzone *et al.* (2007) for details on this regulatory framework indicator.

Source: Conway, P., V. Janod and G. Nicoletti (2005), "Product Market Regulation in OECD Countries: 1998 to 2003", *OECD Economics Department Working Papers*, No. 419; Jacobzone, S. *et al.* (2007), "Regulatory Management Systems across OECD Countries: Indicators of Recent Achievements and Challenges", *OECD Working Papers on Public Governance*, 2007/4; and Institute of Public Affairs, Melbourne.

The Productivity Commission was asked to perform, over a five year period, a series of annual reviews of this stock covering the whole economy, beginning with the primary sector, to assess whether they are still relevant. The *second* objective deals with improving the design of regulations. Until the end of 2006, the evaluation of regulations focused more on their benefits than on the costs, which were rarely grasped clearly because they were spread over a multitude of players. To rectify this, a more thorough study of the impact of all proposed reforms is now carried out thanks to more frequent use of cost/benefit analysis, systematic evaluation of compliance costs[5] and a whole-of-government consultation policy. Moreover, to enforce compliance with these procedures, the Cabinet now examines only those proposals having a regulatory impact statement (RIS), excluding exceptional circumstances. Lastly, the independent Office of Best Practice Regulation has been asked to facilitate implementation of the new arrangements, to monitor the quality of the analyses and to publish annual reports on the procedure's application.

In April 2007, the Council of Australian Governments (COAG) extended these reforms to all levels of government. In addition, COAG agreed to the Productivity Commission proceeding to the second stage of a study to benchmark the compliance costs of regulation in order to identify areas for possible regulatory reform. The study will examine the regulatory compliance costs with becoming and being a business and the regulatory duplication and inconsistencies in doing business interstate. The governments also established a timetable for high-priority resolution of regulatory inconsistencies across jurisdictions in ten "hot spots", including railway and product safety and standards for construction materials, chemicals and plastics.

More recently, the renewed drive to improve the regulatory framework has prompted the creation of a deregulation function within the (newly named) Department of Finance and Deregulation. A "One in, One out" principle has been introduced that requires identification of regulations or associated processes that may be removed or modified to offset new regulations. Additional measures have also been launched following the COAG meetings of March and July 2008. The number of priority areas for regulatory reform has been expanded from 10 to 27 hot spots. Decisions have been taken in 14 areas to implement this plan. They include an agreement in principle to harmonise occupational health and safety laws nationwide; a transfer of responsibility from the states to the federal government concerning consumer credit regulation; an agreement to develop a national trade licensing system that removes inconsistencies across states and allows for a more mobile workforce; and the standardisation of federal government agencies and state revenue offices reporting definitions which will enable reporting information to be pre-filled in business accounting software, at a projected savings of AUD 0.8 billion per year.

All of these measures are steps in the right direction. The progress made especially to favour a nationwide regulatory harmonisation is encouraging. These reforms should help roll back the regulatory expansion of recent decades and preclude the use of principles like "One in, One out", which might ultimately prove too rigid. It is important to pursue this process of regulatory harmonisation at a rapid pace and to extend it to other sectors such as construction rules and consumer protection laws. The timetable set for the measures already agreed should also be strictly adhered to, while this harmonisation process should not result in an alignment on the most restrictive standards. To this end, the authorities could consider following through on the Business Council of Australia's proposal to prepare national business schemes for the most important regulated sectors, exempting companies from regulation by the states if adequate agreements between jurisdictions are not reached soon. In addition, a strengthening of interstate mechanisms for mutual recognition of regulatory standards would also seem useful for avoiding problems of regulatory inconsistency (Banks, 2006). Given the large number of regulators (1 300), another issue warranting exploration is the harmonisation of enforcement standards, which in many cases seem to be decided on an *ad hoc* basis (BCA, 2007a). The states' regulatory good practices should also draw more on those of the Commonwealth, explicitly incorporating a requirement for public consultations from the outset of the regulatory process, commissioning independent bodies to monitor enforcement of new procedures and requiring that proposed reforms comply therewith before they can be presented to executive authorities. The main purpose of these reforms is thus to instil cultural change at all levels of government, so that better methods for drafting regulations will be used routinely and more consistently throughout Australia.

Develop and modernise infrastructure in a more integrated nationwide framework

The federal authorities have not only pledged more funding to eliminate infrastructure bottlenecks, but have also stressed the need for better co-ordination of capital investment. A federal Department of Infrastructure was set up, along with an advisory committee, Infrastructure Australia, comprising members from the private sector and various levels of government. This committee will estimate the capacity requirements for each sector and, by the beginning of 2009, will draw up a list of infrastructure development priorities in order to guide public and private investment. The committee also has an advisory role as regards regulatory reform in the realm of infrastructure. It will work towards unification of federal and state rules governing the management of private/public partnerships (PPPs). PPPs seem to have been significantly more effective in terms of cost control and meeting infrastructure construction deadlines than traditional methods of public-procurement management (Allen Consulting, 2007). It is important, however, that the use of PPPs does not interfere with the selection of priority capital investment projects, and that they be carefully designed (OECD, 2008a). The relevant criteria for such projects involve efficiency, not the availability of non-public financing, especially since international experience has shown that the use of PPPs can sometimes prove costly to public finances if projects are administered poorly.

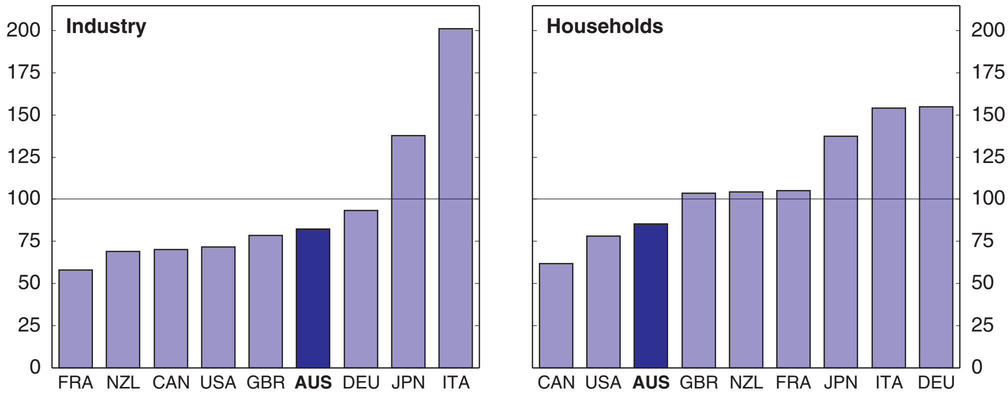
Respond effectively to growing energy demand and to environmental objectives

Australia has made considerable progress in reforming its energy sector. By the mid-1990s, vertically integrated public monopolies had been dismantled. Activities involving a natural monopoly element (transmission and distribution) were separated from those open to competition (generation and marketing), and independent companies were created and privatised (in part or in full) in several states, with guarantees of non-discriminatory access to the network under the supervision of regulators. Interstate interconnections were also developed, and a wholesale National Electricity Market (NEM) was established, excluding Western Australia and the Northern Territory because of their remoteness. These reforms have spurred investment and productivity in the electricity and gas sectors (ERIG, 2007). Electricity prices were among the lowest in the OECD in the mid-2000s (Figure 4.3), reflecting the impact of reforms but also Australia's abundant coal supplies. Reforms have continued in recent years, with two primary objectives: first, to create a nationwide energy market through greater harmonisation of the rules in the various jurisdictions; and second, to strengthen price signals *vis-à-vis* consumers so as to encourage more active management of demand.

Some factors are still contributing to geographical segmentation. The planning and management of transmission networks are still highly regionalised, with no optimisation mechanism at the national level. Public control of electric power companies, which in some states, including New South Wales, is complete, is another factor that complicates market integration. The states grant numerous derogations to national rules governing the energy sector, with respect to marketing, for example, while management of greenhouse

Figure 4.3. **Electricity prices**[1]

2004, OECD = 100



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1. Energy end-use prices in US dollars per kilowatt hour, using current purchasing power parities.

Source: IEA (2008), *Energy Prices and Taxes – Quarterly Statistics, 2nd Quarter*, International Energy Agency, OECD Publishing/IEA.

gas emissions is subject to disparate programmes. These territorial limits impair efficiency and distort investment decisions, which poses a problem insofar as substantial expansion and modernisation of capacities are needed to meet the projected increase in demand in the years ahead.

To fill these gaps, COAG established a national regulator (the Australian Energy Regulator) in 2005 and an agency (the Australian Energy Market Commission, AEMC) that is to develop and harmonise regulations across the country (except for Western Australia). Their powers have widened.[6] More recently, COAG also agreed to improve the transmission network (COAG, 2007). Accordingly, beginning in 2009 a new single operator, the Australian Energy Market Operator (AEMO), will formulate a strategic national plan for developing the network over a ten-year time frame. This plan will help to coordinate and assist investment decisions of transmission companies, thanks to improved information on congestion problems, with incentives to resolve such problems being provided. AEMO will be the sole operator in both the electricity and the gas sectors. Lastly, state-granted derogations from national rules will also be reviewed, with a view to repealing or harmonising them.

Privatisation of energy-sector assets still under the control of states should also be pursued. Public control over electric companies is neither necessary for securing power supply nor a guarantee of efficiency. Electricity prices have risen faster in New South Wales, where there is still a public monopoly, than in other states in eastern and south-eastern Australia since the creation of the National Electricity Market, whereas productivity gains have been smaller.[7] In addition, public control of electric power companies ties up substantial financial resources at the expense of other priorities. But the need for funding will be even greater in the future to boost capacity and modernise existing power plants (Owen, 2007). Privatisation process, which ought to concern New South Wales and the generating companies in Queensland which are still in public hands, should not focus solely on the value of public assets but should also seek to reduce the risks due to rising market power that might be induced by excessive concentration.

To preserve a market structure conducive to competition, a watchful eye should be kept on increasing vertical integration between generators and retailers in South Australia and Victoria, especially given the current trend towards horizontal concentration (Willett, 2006). Vertical concentration makes it easier for retailers to manage the risks associated with the volatility of wholesale electricity prices and encourage investment in generation. However, it reduces market liquidity as an increasing share of transactions is being managed internally, which tends to raise the barriers to entry for other retailers. To preserve healthy competition, it is important to put clear limits on cross-shareholdings between firms operating in competitive segments of the market and those that own transmission infrastructure, as the authorities are considering doing (COAG, 2006).

The authorities also aim to raise the price elasticity of demand so as to avoid building costly plants to meet spikes in consumption (COAG, 2006), by promoting the installation of "smart meters" where economically feasible. The effectiveness of this initiative would be enhanced if the ceilings on retail electricity rates for low-volume consumers were eliminated. COAG has already decided to lift the ceilings for states in which there is effective competition in the retail market. Because this condition is met in Victoria a recommendation has been made to eliminate the ceiling as from 1 January 2009.[8] Similar conditions would seem to prevail in South Australia, where the electricity sector has also been fully privatised (Grey and Lewis, 2007). The retail markets in both these states should be liberalised completely without delay, and liberalisation should be extended rapidly to the other states, including New South Wales, where it has been postponed until 2013 at the earliest. As noted by ERIG, it is paradoxical to wait until there is effective competition before eliminating the ceiling when that ceiling impedes competition by exposing certain retailers to rate risks stemming from the lack of price regulation in the wholesale market. This regulation, which thwarts investment, also undercuts the effectiveness of efforts to reduce greenhouse gas (GHG) emissions. To reconcile the inevitable hikes in energy prices for most consumers with concerns that low-income households can afford energy, the authorities ought to make use of instruments other than price controls. This might be done, for example, as part of COAG's planned review of the community service obligation (CSO), with a view to formulating a coherent nationwide framework (COAG, 2007).

Greater certainty about the framework for cutting back GHG emissions is also needed for an expansion of private investment in the energy sector. The government aims to reduce emissions by 60% from their 2000 level by 2050 and a national system of emissions trading is planned to commence in 2010. Key aspects of the system will be clarified before the end of 2008 (Box 4.1). It is important to eliminate the uncertainties surrounding the factors that will influence the price of emissions and affect both the valuation of privatised public assets and the selection of new investment projects. Given the average lead time for developing a new power plant (six years), investment decisions must be taken rapidly in states such as New South Wales in order to maintain an adequate supply (Owen, 2007).

Expand and improve the supply of broadband Internet access

Australia's broadband penetration rate is close to the OECD average, if *per capita* income is factored in, and since 2004 this rate has been rising more rapidly than in most of the other countries. However, few Australian companies have developed their own web sites,[9] broadband connections are slow as roughly 50% of connections provide less than 512 kilobits per second (ABS, 2008), and subscription charges are high.[10] There are wide disparities in access opportunities between rural and urban areas.[11] OECD indicators show

Box 4.1. **A new approach to climate change**

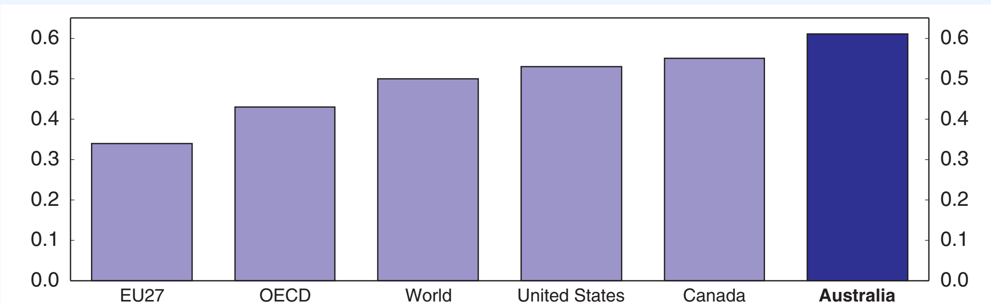
Keeping its electoral promise, the new federal government has reshaped climate change policy by ratifying the Kyoto Protocol and committing to reduce greenhouse gas (GHG) emissions by 60% from the 2000 level by 2050.

In the short term, this policy change, in particular the Kyoto Protocol ratification, will have a limited impact beyond its important symbolic effect underlining the political commitment to contribute to the global efforts to combat climate change. Australia is on track to meet its Kyoto target, which requires emissions to remain below 108% of their 1990 level between 2008 and 2012. In 2007, they reached 106% of this level. In the longer term however, reducing GHG emissions may well be more challenging than in most other OECD countries (Banks, 2008).

The structure of the economy has been shaped by the abundant availability of low-cost fossil fuels, which, for instance, implies a heavy reliance of electricity generation on coal (80% in 2005). The carbon dioxide (CO_2) emissions per unit of output are high in international comparison (Figure 4.4). Emissions have also increased swiftly in the main industries since 1990. Their moderate average growth is due to a one-off offset provided by a land-clearing ban. If one excludes this measure, emissions have risen by about 35% since 1990, and by as much as 50% in the energy sector.

Figure 4.4. **Carbon dioxide emissions from fuel consumption**

Kilogrammes of CO_2/US dollar, 2005[1]



StatLink http://dx.doi.org/10.1787/472215773836

1. Using 2000 prices and purchasing power parities.

Source: IEA (2007), *CO_2 Emissions from Fuel Combustion, 1971-2005*, International Energy Agency, OECD Publishing/IEA.

Australia could also be more exposed than many other countries to the consequences of climate change. These can already be felt in the reduction of water supply due to the severe drought (Chapter 5). The small share of the country in global emissions (less than 1½ per cent, which is however comparable to more populated countries like France or the United Kingdom) means that its contribution to abatement will only have a significant impact if the major emitting countries take similar measures. As the benefits of climate change policy are independent from their costs on the Australian economy, it is important to design the policy carefully to avoid unnecessary costs.

The government has defined the broad lines of its strategy in a green paper, which takes into account the initial conclusion of an independent report by Professor Garnaut (Australian Government, 2008; Garnaut, 2008). This document and the quantitative analyses underway, which will be published in the coming months, will be used to conduct consultations in the second half of the year, before finalising the details of this strategy at the end of 2008.

Box 4.1. **A new approach to climate change** *(cont.)*

According to the green paper, the main policy instrument will be a national emission trading system, the Carbon Pollution Reduction Scheme (CPRS), which is planned to commence in 2010. The government's decision to largely rely on market mechanisms to reduce GHG emissions is appropriate as it is the best way to minimise abatement costs. The CPRS will have a broad coverage, representing around 75% of total domestic emissions, which will reinforce its efficiency. The more sectors are included, the less the carbon price will have to rise to meet the abatement target and the smaller the overall cost on the economy will be. Agriculture will be initially excluded from the trading scheme, because of practical difficulties to monitor emissions in a cost-effective way, but could be integrated in 2015, if these difficulties can be solved. Currently, farm fuel energy costs are heavily subsidised, which is a disincentive to improving energy use efficiency and reducing greenhouse gas emissions. The government also proposes to include reforestation on a voluntary basis.

The green paper does not provide an emission reduction trajectory. It will be defined at the end of 2008. Modelling work underway will be useful to identify the trade-offs between the economic and environmental objectives and the choice of the appropriate abatement path. Rapid emission cuts upfront may be economically harmful because much of the existing capital stock is long lived while the development of new technologies is likely to be slow. But the planned early start of the CPRS in 2010 is welcome, as it will help to minimise the costs of long-term emission cuts[1] and reinforce Australia's position in the forthcoming international negotiations on climate change. To favour a smooth implementation of the scheme, the government proposes that emission permits could be used in any subsequent year after their acquisition (*i.e.* unlimited banking) and that a limited degree of borrowing from the following year could be allowed to increase flexibility. It also suggested to set each year the caps for the following five years and beyond this period to identify the range within which future caps will be set over 5 to 10 additional years. Finally, a cap on the carbon price should be introduced between 2010/11 and 2014/15, but set at a high enough level to ensure it binds only in exceptional circumstances.

In the green paper, the authorities have indicated their intention to use all revenues provided by the auctioning of the emission permits to help households – especially low-income households – and businesses to adjust to the impact of the scheme and invest in clean energy options. As long as support to households is not directly linked to their actual fossil fuel consumption, they should not affect the relative price changes required to modify their behaviour (Garnaut, 2008). This is the case for instance for increased assistance through the income tax and benefit system. However, the government intention to offset the increase in fuel prices for motorists, at least for the first three years following the introduction of the CPRS, by a cut in fuel excise is counterproductive. The same applies for heavy vehicle road users, who will get a fuel tax cut on a cent-for-cent basis to offset the fuel price increase induced by the CPRS for at least one year, while similar rebates will be granted to the agricultural and fishing industries for three years.[2]

Although allocations of emission permits would progressively move towards 100% auctioning as the scheme matures, the government plans to adopt transitional provisions to assist some sectors to adjust. In addition to the AUD 500 million funding already agreed to promote the development of commercially viable carbon capture and storage technology, the government proposes to provide a limited amount of direct assistance to existing coal-fired electricity generators to reduce the possible impact of higher risk premiums for investments in the electricity generation sector due to some potentially significant declines in asset values induced by the regulatory changes. Free emission permits will also be granted to the most emissions-intensive trade-exposed industries to

Box 4.1. **A new approach to climate change** *(cont.)*

provide transitional support to these industries, and to address the potential problem of carbon leakage. These permits would be provided on the basis of industry average activity emission intensities rather than the intensity of a particular firm and these subsidies would be gradually reduced over time at a pre-announced rate. Nevertheless, it does not seem justified to compensate industries which can pass the cost of permits on to consumers, such as coal-fired electricity generators, unless a compromise is required to create a political constituency in support of climate change policy. The free permits to trade-exposed emission-intensive industries will help their adjustment to the relative price changes, but it is also likely to slow it and to increase the overall economic cost of meeting the emission reduction target.

The government has ruled out the nuclear energy option, but has decided to raise the amount of electricity generated from renewable energy sources from slightly less than 10% currently, to 20% by 2020. Once the CPRS is in place, complementary policies appear warranted in only few specific cases, for instance to promote abatement in sectors not covered or to strengthen research and development to find low-emission technologies, as incentives related to relative price changes may be insufficient. In this regard, the authorities have planned to establish a fund, the Climate Change Action Fund, to assist businesses to develop innovative low emissions processes and energy efficiency-enhancing projects with long payback periods. On the other hand, setting an ambitious mandatory target for renewable energy on top of the future CPRS is likely to distort choices and to increase abatement costs, even though this scheme should replace the multiple state-based systems in place and be phased out over the 2020-30 period. This type of measure is not going to affect the total quantity of emissions, which will be set by the CPRS, but only their mix (Productivity Commission, 2008b). However, to limit cost increases, the renewable energy target uses a mechanism of tradable renewable energy certificates.

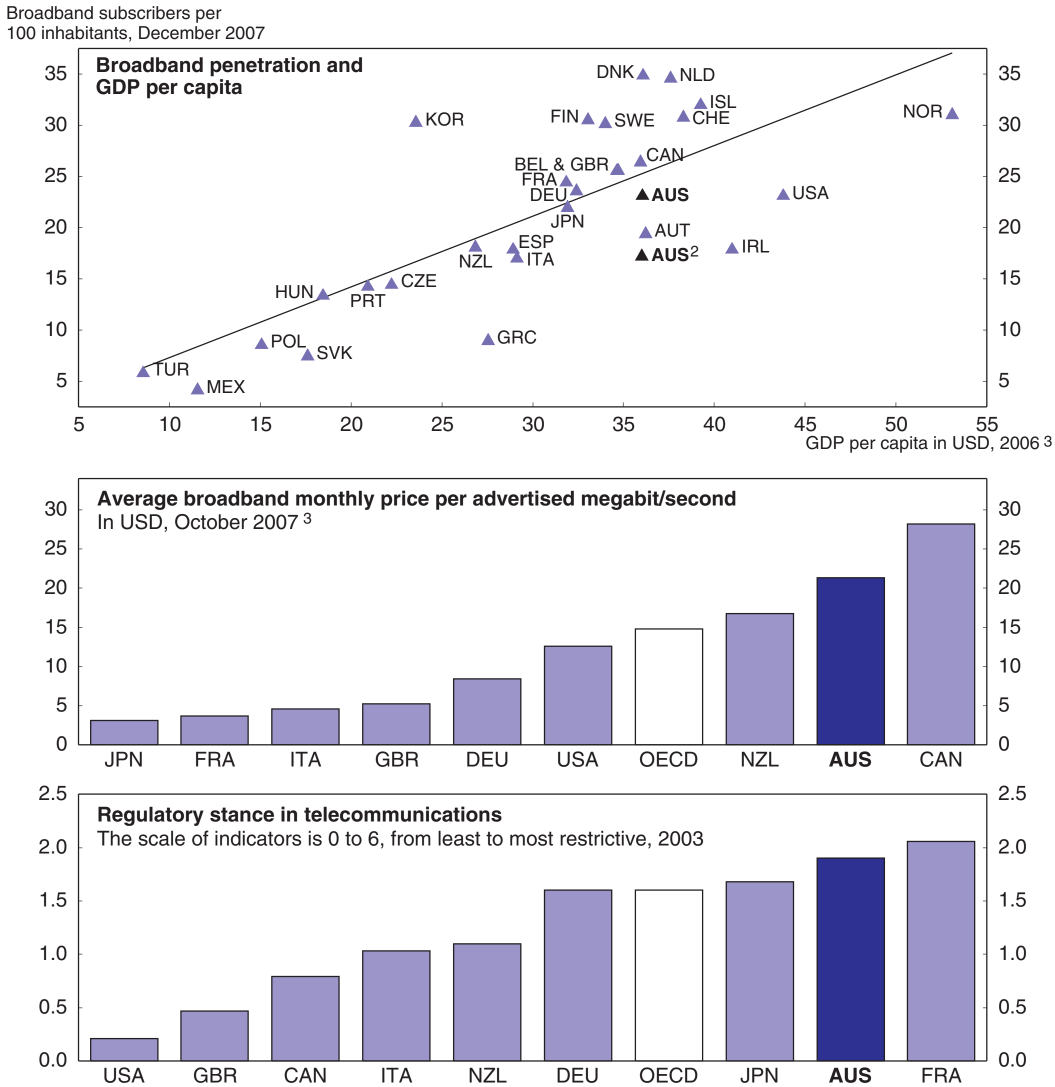
Since the climate change challenge is a global issue requiring a global response, it is not in Australia's interest to act in isolation, as recognised by the authorities in the green paper. International trade of permits could also help to cut abatement costs. The authorities are designing their emission reduction plan so as to allow an international linkage with the systems developed abroad in the longer term. This is consistent with their intention to announce by the end of 2008 the quantitative limit on the use of Kyoto units for compliance with the CPRS by liable entities. Similarly, the recent efforts to sign an agreement with Papua New Guinea to reduce emissions from deforestation are also encouraging steps.

1. According to Allen Consulting (2006), these long-term costs could be of the order of 6% of GDP, implying a reduction of annual output growth by 0.15 percentage point until 2050, which is significant but affordable. If the emission cuts were postponed until 2022, the output loss would reach 13%.
2. The government will review these measures after one year for heavy vehicle road users and after three years for the agriculture and fishing industries and households.

that Australian telecommunications regulation is more restrictive than the OECD country average (Figure 4.5).

The broadband sector, which is regulated by the ACCC, is dominated by the incumbent, Telstra, which was privatised at the end of 2006. This company has more than two-thirds of the market and plays a major role on all platforms for access to these services. Telstra controls over 80% of the sector that uses digital subscriber line (DSL) technology, and it owns the copper telecommunications network. It also owns more than

Figure 4.5. **Internet access and use**[1]



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1. OECD aggregates are unweighted averages of data available.
2. Broadband penetration in June 2006, GDP per capita in 2005.
3. Using purchasing power parities.

Source: OECD Broadband Statistics, *www.oecd.org/sti/ict/broadband*, accessed July 2008; Conway, P. and G. Nicoletti (2006), "Product Market Regulation in the Non-manufacturing Sectors of OECD Countries: Measurement and Highlights", *OECD Economics Department Working Papers*, No. 530.

50% of cable-related infrastructure and has a strong presence in mobile services that use wireless technologies. This impedes competition between technologies, yet such competition is fruitful as it encourages product differentiation. Indeed, Telstra has little incentive to develop new services for each of these platforms, which would tend to lower the value of its current assets (*i.e.* copper network) and reduce income earned on other networks. The supply of broadband access is thus highly concentrated on DSL technology, which is used for more than 80% of connections, *versus* 62% in the OECD as a whole, whereas cable and other types of networks (fibre optic, wireless, etc.) are used less.

The ACCC's efforts to foster competition have focused on ensuring that all broadband Internet service providers have access to the network at regulated prices, encouraging competition *via* investment rather than the resale of wholesale services. This local loop unbundling, which has been a source of conflict with the incumbent (Cosgrave, 2007), has played an essential role in expanding the supply and quality of services in the DSL segment. The number of providers has more than doubled since June 2005, and faster connections (asymmetric digital subscriber line, ADSL2+) have been proposed. This has prompted Telstra, which had adopted a defensive strategy of improving services only under pressure from competition, to augment the quality of its connection plans, the speed of which had been capped at 1.5 Megabits per second until November 2006. In February 2008, the incumbent finally announced a change in strategy and a more systematic extension of its ADSL2+ connections throughout Australia.

A regulatory shift would seem inevitable because of rapid technical change. A significant easing of regulation would be feasible, for example, if broadband mobile services were to expand substantially, since a choice of four different wireless networks would then be conducive to greater competition. Nevertheless, the most notable technological change that is taking shape is the spread of high-speed fixed fibre optic networks entailing considerable capital investment and substantial financial risks. It is against this backdrop that the government is planning to establish a private/public partnership to build a FTTN[12] fibre optic network, with a government contribution of up to AUD 4.7 billion, so that 98% of the population can have access to broadband connections (of 12 Megabits per second or faster). Such a large government subsidy is unusual among OECD countries. This technological change also raises the question of whether the regulations currently in force are appropriate for balancing the interests of investors, who take risks, and users, who benefit from competition. Regulations may impede the development of infrastructure if they compel companies that invest to share their networks with competitors at a price set by regulators. Backtracking on regulation of this type in the United States seems to have stimulated investment (Hazlett, 2005), and a number of international studies underscore the risk, even if there is no consensus on the matter (OECD, 2007a). The Australian government plans that firms interested in building the proposed FTTN network may submit requests for regulatory changes. These requests will be reviewed by a commission that has been directed to set specifications for building the network, and to select the firm that will do so.

Changes in the regulatory framework pose delicate problems. Above all, it is important to avoid a re-monopolisation of the sector. Telstra's domination of all platforms makes it difficult to establish effective competition between the various types of infrastructure. The authorities were therefore right not to proceed with Telstra's 2005 proposal to build a fibre optic network in exchange for an exemption from TPA provisions regarding access to telecommunication infrastructure. Alternatively, to have a particular operator or group of operators build and control new equipment while giving its competitors guaranteed non-discriminatory access to it at regulated prices also raises difficulties. As mentioned above, to maintain a regulation similar to the current one could have a detrimental impact on investment. This could be the case, for example, if regulated prices for network access were too low, but also if Telstra's competitors were chosen to build the new infrastructure. These competitors would need access to the incumbent's network to reach end users, which might give rise to conflicts and delay. On the other hand, Telstra's control of the copper network gives it a serious edge over competitors by cutting the costs of deploying

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fibre optics, especially civil-engineering costs. To give this operator control of new infrastructure may bolster its dominant position, with detrimental effects on competition and efficiency, especially as it would benefit from a sizeable public subsidy. In any case, the regulatory requirements imposed on the winner of the tender should ensure that access to the network is provided at prices which are cost-based.[13]

A better solution would probably be a functional separation between network management and the development of marketing activities, as in the United Kingdom. This would entail ensuring that all operators have access to the network, and in particular to the conduits whereby optical fibres could be installed on terms that were transparent and non-discriminatory, at rates based on costs, which would seem to be the case in Australia. This approach, which is under consideration in Italy and Sweden, would limit the risks of duplicating basic infrastructure and would spur investment.

A local, rather than national, approach would be feasible for upgrading broadband infrastructure as well. Because the appropriate technological choices would hinge largely on geographical conditions and specific user needs, from a technical standpoint local (*i.e.* municipal) solutions might cost less than construction of a vast national fibre optic network (Gans, 2006). The fact that the extent of competition between platforms varies from one geographic area to another also militates in favour of regulatory constraints being imposed on the basis of local, rather than national, situations. Moreover, the ACCC would seem prepared to adopt a local approach to requests for exemption from the free-access-to-networks obligation in areas where there is competing infrastructure (Cosgrave, 2007). As regulators have pointed out, the TPA enables firms to request exemptions from application of the network access law before committing to an investment or proposing terms and conditions for a voluntary special access undertaking. Here, however, it is important to ensure that the terms offered to Internet service providers are adequate for them to achieve returns on their investments in the long term (Ergas, 2008).

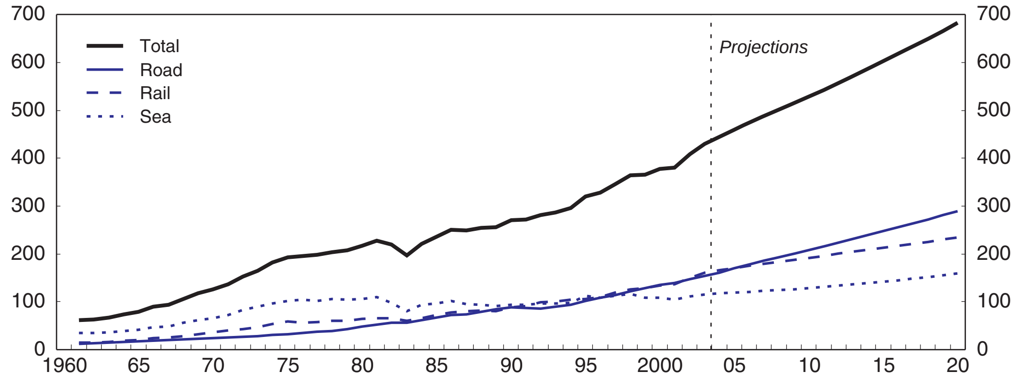
Expand and improve the co-ordination of the supply of freight services

Just as with telecommunications, high-performance freight infrastructure is crucial, given the size of the country, the geographic dispersion of the population and production centres and their remoteness from other markets. The rapid rise in the demand for freight, stemming in particular from growth in commodity exports, has put severe strains on infrastructure. Many railroads run close to full capacity, and there is a growing problem of road congestion (COAG, 2007). In 2005/06, iron ore exports from the Port Hedland and Dampier ports were up by 45% over five years earlier. Bottlenecks persist, as shown by the large number of cargo ships lined up to wait in certain bulk ports. A boost to capacity is therefore needed, especially as demand for freight is expected to double over the next 20 years.

Freight handling is saddled by a variety of shortcomings, which affect sea freight in particular. Numerous ports suffer from inadequate loading facilities, a docks shortage and excessively shallow canals that limit the ability of large ships to enter.[14] Many port facilities lack adequate connections to rail and highway systems. Both modes of land transport are more complementary than substitutable, and they have accounted for similar, and steadily growing, shares of the domestic freight market (Figure 4.6).[15] Rail is better suited for bulk transport of mining products, given the large volumes and the long distances along the country's east-west axis, whereas road transport is used more frequently for container freight when delivery lead times are substantial. As a result, only a small proportion of land freight – between 10% and 15% – is subject to competition

Figure 4.6. **Freight transport**[1]

Billion tonne-kilometres



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1. The urban freight task is accomplished almost exclusively by road transport, so the other modes are assumed to involve non-urban freight movement only.

Source: BTRE (2006), "Freight Measurement and Modelling in Australia", *Report*, No. 112, Bureau of Transport and Regional Economics.

between road and rail, which makes the objective of many states to raise the proportion of railway freight at the expense of road freight appear difficult to achieve (House of Representatives, 2007). According to the Productivity Commission, a sharp rise in road haulage rates would have only a slight impact on the railways' share of the market, and a negative effect on the aggregate volume of freight transported (Productivity Commission, 2006b).[16] Moreover, a sharp rise in road freight rates would not be justified by the existence of significant distortions penalising rail in relation to road, even if externalities were factored in. An increase in these prices would nonetheless be needed to finance the sector's growing investment (see below). The main reform objective should be a co-ordinated increase in the efficiency of each component of transport infrastructure.

Co-ordination of transport infrastructure development is complicated by the multiplicity of stakeholders. Responsibilities are shared between the federal government (for the interstate rail network, under the supervision of the Australian Rail Track Corporation), the states and territories (for roads, intrastate railway systems and most ports) and the private sector (with respect to certain railway networks, certain ports and a number of toll roads). Given this difficulty, a nationwide plan (AusLink) was introduced in 2004 to co-ordinate investment projects – primarily road projects, but rail projects as well, with substantial federal financing. This contribution of AUD 15 billion over five years (0.3% of GDP per year), which addresses the most serious problems of under-investment, will establish an integrated national network based on a series of nationwide and inter-regional transport corridors including intermodal connections as well as connections with urban areas, ports and airports. In mid-2007, an agreement was reached between the federal government and the states on the planning and funding of these corridors. A second phase of the AusLink plan, extending the investment effort until 2013 with funding of 0.3% of GDP per year, was announced at the time of the 2007/08 Budget.

In addition to these investments, it is important to expand the use of transport capacity currently impeded by regulations that in many cases are unsuitable and inconsistent from one state to the next. For instance, weight limits for heavy goods vehicles are not harmonised, with differences, for example, between New South Wales and its neighbouring states (BCA, 2007b). In the case of railway infrastructure, a structural separation between network management and the management of transport services has been in place since the mid-1990s and includes interstate segments, with non-discriminatory access. Nevertheless, the multiplicity of access regimes and safety regulations is detrimental to the efficient use of infrastructure. For example, interstate operators must comply with the provisions of seven safety regulators, six railway access regimes and 15 different health and safety regulations (COAG, 2006). In 2006, COAG signed the Competition and Infrastructure Reform Agreement to simplify and improve the consistency of the regulation of nationally important infrastructure, and to harmonise state road and rail regulations within five years. These agreements were confirmed in 2007 and a timetable established for adjusting state access regimes for rail and port infrastructure by end 2008 (COAG, 2007). In addition, COAG decided in March 2008 to speed up the harmonisation of rail safety regulations (COAG, 2008a).

A reform of road infrastructure pricing, which is currently based on average network usage costs, would also be beneficial (Productivity Commission, 2006b). Under the current system, the heaviest vehicles are implicitly subsidised relative to lighter trucks, and a disconnect is induced between network usage costs generated by hauliers and the prices that they are charged, which should in addition take into account the cost of environmental externalities. This in turn creates a disconnect between revenues and spending by the jurisdictions providing the infrastructure and magnifies the risks of inefficient investment decisions. Moreover, the infrastructure that is needed for certain stretches of road is covered by neither the AusLink plan nor state investment programmes, and some local councils find it difficult to finance repairs of the damage caused in rural areas by the heavy goods vehicles that are increasingly being used to transport grain harvests, for example. In 2007, COAG agreed on a gradual reform of road haulage pricing to factor in intensity of use of the highway system (mass transported and distances covered) and place of use, with the help of new technologies such as global positioning system (GPS). In an initial stage, the reform, which is expected to continue until 2014, will put an end to the implicit subsidisation of the heaviest vehicles.

These reforms could be extended to other areas. Moves to co-ordinate investment, which under the AusLink plan have focused on land networks, could be extended to port infrastructure that constitutes a key element of the transport network (House of Representatives, 2007). The need for greater coherence of investment programmes and to tighten selection criteria for public projects, which the government has acknowledged by establishing the Infrastructure Australia advisory committee, could be accompanied by further efforts at regulatory harmonisation. Non-discriminatory access to the main rail networks could be extended, for example, to terminal container loading and unloading services, which entail costly investment for firms entering the market (Fagan, 2007). National standards for the approval of port dredging projects, in order to deepen canals, would also be useful to ensure that such projects are completed expeditiously. Steps in this direction have been planned by COAG in March 2008 in connection with the process of harmonising environmental regulations. On the other hand, the application of the principle of vertical separation and a national regime of access to parts of the railway network might be less constraining when the competition from road or maritime infrastructure becomes sufficiently brisk and prevents monopoly rents (Productivity Commission, 2006b). Finally, it would be desirable to give more financial responsibility and adequate resources to the local jurisdictions to cover the operating costs and investment needs of their road networks.

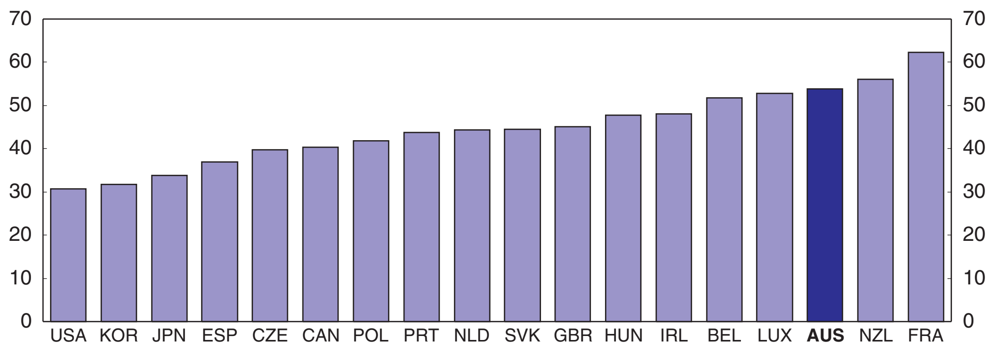
The labour market must remain flexible

The WorkChoices reform is being phased out

The Australian system of industrial relations has long been governed by a tangled web of binding rules laid down in "awards" by administrative tribunals such as the Australian Industrial Relations Commission (AIRC) or similar bodies at the state level, which set minimum wages and labour standards. Changes over the past fifteen years have simplified, harmonised and scaled back the scope of these awards (OECD, 2006b). In 2006, awards set the pay of 19% of wage-earners, as opposed to some 68% in 1990. Nevertheless, the awards, which still covered 20 areas,[17] imposed fairly generous minimum conditions for award-covered employees, and more importantly, set the benchmark for collective bargaining and individual agreements, which are being used more and more. As a result, the minimum wage has remained high in relation to the median wage in international comparison (Figure 4.7). Against this backdrop, the reform implemented by the WorkChoices Act, which came into force in March 2006 made changes to a number of core aspects of the previous system (Box 4.2).

Figure 4.7. **Ratio of minimum to median wage**

Per cent, 2006[1]



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1. 2005 for Netherlands, Poland and Portugal.

Source: OECD (2007), *Minimum Wage database.*

These measures were heavily criticised for going too far in expanding employers' prerogatives at their workers' expense. The debate over the reform focused on fairness and efficiency issues, for which a review of the reform's initial effects provides some illumination. *First*, and as expected, the number of individual agreements (Australian Workplace Agreements, AWAs) increased. During the first seven quarters after the reform came into force, the number of AWAs rose by more than 50% as compared with the preceding seven quarters. Use of the contracts rose in all sectors, from 3.1% to roughly 8% of aggregate employment between March 2006 and March 2008. The individualisation of negotiations, while more widespread in small than in large firms, rose more sharply in the latter, and especially in the mining industry (Figure 4.8). *Second*, there are indications that the terms of employment for the most vulnerable workers deteriorated, although limited disclosure of the content of new agreements (individual or collective) precludes an

Box 4.2. **Main features of the WorkChoices Act**

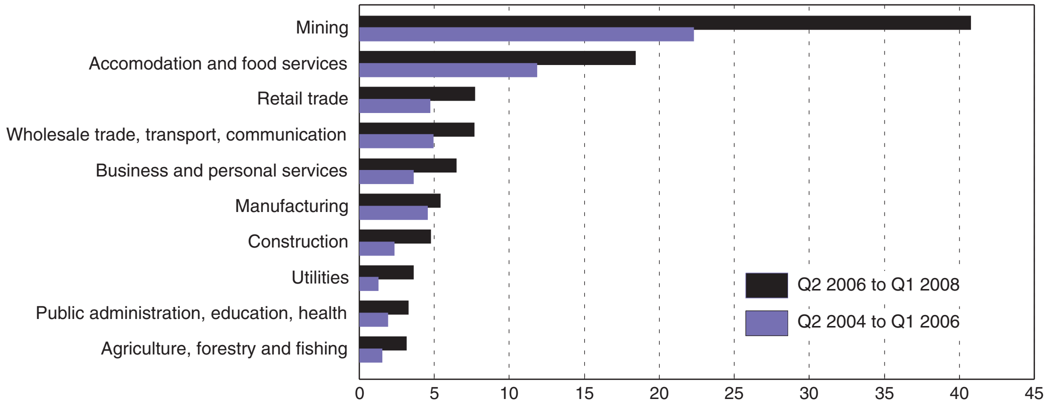
The main changes that the WorkChoices Act had introduced were the following:

- *Setting a new safety net of minimum employment standards and streamlining agreement making procedures*. Previously, all new individual and collective agreements had to meet a "no disadvantage" test so that employees had wages and conditions that were no less generous, in net terms, in the relevant award. Under WorkChoices, agreements were required to meet only five minimum conditions. These dealt with minimum wages, ordinary weekly working hours (38 hours) and entitlements to annual leave (4 weeks), parental leave and personal leave. The agreement-making process was streamlined by removing the requirement for new agreements to be approved by administrative bodies before coming into force. New agreements were assumed to be valid from the date of lodgement.
- *Greater individualisation of industrial relations*. Employers could unilaterally terminate collective agreements. In addition, among the six types of existing contracts, the Act established a hierarchy such that conditions negotiated in individual agreements (Australian Workplace Agreements, AWAs) took precedence over the five other types of (collective) agreements that had been reached (with or without trade unions), even if one of those other types of agreements was in force.
- *Reducing the role of trade unions and the AIRC*. Trade union activities were made subject to more restrictive rules regarding their rights of access to businesses and the obligation to conduct a secret ballot before launching industrial action. The recourse of employers against unprotected strikes (taking place outside periods of negotiation) was strengthened. In addition, the AIRC's powers to set the federal minimum wage and other wages specified in the awards were transferred to a new body, the Australian Fair Pay Commission. The AIRC's role in arbitrating industrial disputes was maintained, albeit under procedures designed to prompt employers and employees to resolve their disputes at workplace level.
- *Extending federal powers*. The WorkChoices Act established national legislation governing industrial relations for incorporated private enterprises, which account for 85% of aggregate employment. Prior to the reform, because of the overlapping coverage of multiple conventions and laws at the federal and state levels, employees at a company may have been subject to different regimes, which was a source of confusion and jurisdictional conflicts and raised transaction costs. The system remains in force for unincorporated businesses and for employees of state and local governments.
- *Modernising the award system*. As well as reducing their role as a benchmark for agreement-making, the Act put in place a process to rationalise the existing system of state and federal awards, although no rationalisation was achieved.
- *Exemptions from protection against unfair dismissal*. Firms with fewer than 100 employees were exempted from the application of unfair dismissal laws, introduced in 1994. Larger firms also qualified for exemption in the event of redundancies for operational necessity and during the first six months after a worker is hired.

overview of the situation. In many cases, AWAs were used to cut labour costs, even though the minimum wage did not decline relative to the average wage, putting a floor to cutting remuneration for the low skilled. In the retailing, hotel and restaurant sectors, for example, provisions protected by awards that were not part of the five legislated minimum conditions, such as overtime and penalty rates, were often eliminated, in part or in full (Evesson *et al.*, 2007; Watts and Mitchell, 2007). The situation was probably different in

Figure 4.8. **Individual workplace agreements in operation**

In per cent of employment



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Source: Workplace Authority and Department of Education, Employment and Workplace Relations; and ABS (2008), *Labour Force, Australia* (cat. No. 6291.0.55.003), Australian Bureau of Statistics.

sectors in which a shortage of skilled workers gave employees greater negotiating clout. *Third*, the reform may have improved labour market performance: the structural unemployment rate does seem to have continued to decline until mid-2007 (Kennedy, 2007), while the number of industrial conflicts declined. However, the limited time since implementation, along with additional changes made to industrial relations law in March 2008 and the strong economic conditions during 2006 and 2007 make it difficult to isolate the effects of the reform.

In all, it is difficult to gauge the consequences of the WorkChoices reform in terms of efficiency and fairness. However, the reform was perceived by most people as an excessive upheaval in industrial relations that was not justified by the healthy state of the labour market. The concerns voiced by public opinion as to the fairness issues prompted the previous government to reinforce the safety net. In May 2007, a "fairness test" was introduced that required that any alteration or elimination in agreements of award conditions would give rise to fair compensation for employees earning less than AUD 75 000 per year. The new government is phasing out some aspects of the WorkChoices reform and making additional changes to industrial relations law.

Main features of the proposed industrial relations reform

The government is reforming industrial relations again, including three main aspects:

- The safety net laying down minimum terms of employment and wages will be enlarged.
- There will be a greater focus on collective bargaining and AWAs will be banned.
- A uniform nationwide system of industrial relations in the private sector will be implemented, the number of awards will be reduced and a single regulator, Fair Work Australia, will be created.

This reform should enter into force at the beginning of 2010. It involves a number of transitional provisions adopted by Parliament in March 2008. These include: *i)* barring firms from using AWAs, replacing them with "individual transitional employment agreements" pending new legislation, which will not include provisions for individual statutory agreements; *ii)* re-establishing, for any new agreements that are signed (collective or individual), tests of "no disadvantage" compared with the applicable awards or existing collective agreements; and *iii)* re-launching the process of modernising awards. Some aspects of the WorkChoices reform, notably the move towards a national system of industrial relations, will be retained.

The new safety net will consist of the minimum wage and an obligation to comply with ten legislated National Employment Standards and an additional ten allowable matters that may be contained in awards. In addition to standards covering working hours and leave that were introduced by the WorkChoices Act, these new standards will include: the right to request flexible working arrangements for parents of a child under school age; entitlement to a minimum number of public holidays; long-service leave; and entitlements with regard to notice and compensation in the event of contract termination or dismissal. Moreover, ten additional minimum conditions will be laid down by awards according to sectoral requirements, occupations or firms. These will deal *inter alia* with the contractual minimum wage, working hours, payment for overtime, bonuses for irregular or undesirable hours and annual holiday pay. In addition, the government has pledged to restore options for recourse against unfair dismissal for workers in businesses with less than 100 employees. Exemptions will, however, be maintained for workers with less than one year's service in firms having fewer than 15 employees and for those with less than six months' service in firms having 15 or more employees. The government has also promised to cap the costs of unfair dismissal and to limit the practice of employers' paying "go away money", when laying off incompetent staff. There are also plans to hold consultations with SMEs about drafting a code for fair dismissals that would make it easier for them to cope with the corresponding legal obligations.

Unlike the WorkChoices Act, this proposal encourages collective bargaining, to be pursued at the firm level if a majority of the workers so desire. Each party would be required to negotiate in good faith[18] and would be free to select their representatives, from a trade union or not. This system of collective firm-level bargaining will make it possible to include additional provisions for individuals. To enter into force, an agreement will have to be ratified by a majority of employees and approved by Fair Work Australia, which would check, *inter alia*, that all collective and individual provisions comply with the minimum conditions. If negotiations fail to reach agreement and are suspended, the provisions already in force will remain valid. Alternatively, the parties could jointly request arbitration by a regulator, or else launch a conflict. As is currently the case, however, any strikes would have to be preceded by a secret ballot and backed by a majority of workers. The reform also continues the ban on pattern bargaining, which seeks to impose agreements for groups of companies. Nevertheless, for sectors such as cleaning or child-minding, in which collective bargaining is limited and employees are low-paid, multi-employer negotiations would be facilitated. While AWAs would not be available under the proposed legislation, individual common-law contracts would be possible, as long as the agreement complies with the national employment standards and any award conditions. However, workers earning more than AUD 100 000 per year would be free to negotiate individual common-law contracts with no reference to the ten conditions set in the awards.

Lastly, the federal authorities intend to simplify the organisation of industrial relations. *First*, a further step will be made towards a uniform national system for all private-sector businesses, including those that are unincorporated either through harmonisation of regulations or a transfer of power from the states to the central government, as the state of Victoria did 12 years ago. *Second*, the AIRC will rationalise the awards, of which there are currently more than 4 300. Options will be explored for consolidating existing awards between sectors and occupations, and the content of awards is to be simplified so as to meet the goal of limiting the number of minimum conditions to ten. *Third*, as from 2010 Fair Work Australia will be the only labour-market regulator, replacing the five bodies currently performing that mission. This independent institution will perform the following functions: *i)* offer practical information and advice; *ii)* help resolve industrial disputes; *iii)* enforce and monitor enforcement of the law; *iv)* set minimum wages at national level and terms of awards; and *v)* assess complaints about unfair or unlawful dismissal.

Evaluation of the industrial relations reform

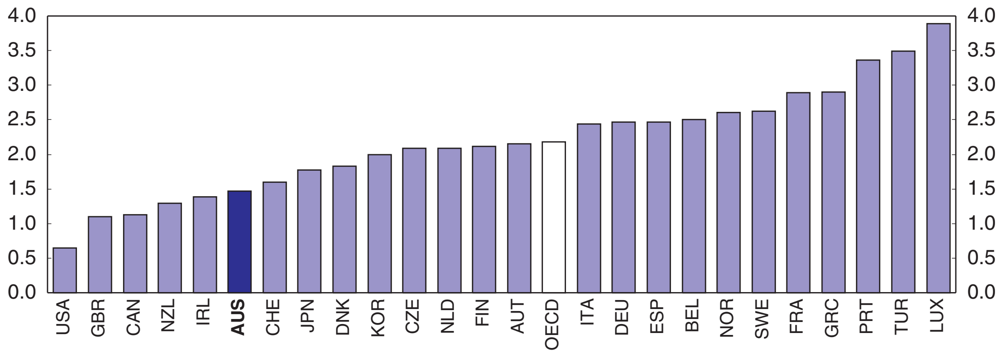
The reform, which is a cornerstone of the government's programme, should result in the desired tipping of the scales back towards workers. It is important, however, that this goal, which addresses a legitimate concern for fairness, does not hamper labour market flexibility. Care should be taken that the reform, which will be discussed in Parliament in the latter half of 2008 and enter into force in 2010, ensures the preservation of a decentralised system of industrial relations. Indeed, ensuring sufficiently differentiated wages and containing the risks of wage contagion are vital challenges. The risk that wage hikes in booming sectors and regions will spread to the rest of the economy should not be underestimated. To preserve a close tie-in between productivity and wage increases, collective bargaining arrangements should not extend beyond the company level, as acknowledged by the authorities, through a ban on pattern bargaining, even if this results in disparities in pay. Such disparities are needed to ensure a demand-driven allocation of labour and to encourage young people to undertake training. Here, one might question the need to promote multi-firm negotiations in certain sectors if workers are covered by awards in any event.

Nor should the setting of pay and working conditions impede the hiring of low-skilled workers. Clearly, the efforts to raise levels of training and education should help to gradually diminish the relative size of this group (Chapter 3). However, the effectiveness of education policies may be limited for the persons with reduced learning abilities who generally fill low-skilled jobs (Saunders, 2007). On the other hand, while empirical studies show that a moderate minimum wage is generally not detrimental to employment, it can have a detrimental impact for low-skilled workers if it is associated with high total labour costs, as is the case in Australia or France (OECD, 2006c; Wooden, 2006; Kramarz and Philippon, 2001). Under these circumstances, the combination of a moderate minimum wage and an employment-related system of benefits might constitute a better strategy for protecting vulnerable workers by making it easier for them to get jobs and improving their income prospects (OECD, 2006d). Persons who accept an initially low-paying job do in fact have a greater chance of improving their lot in the future than those who remain unemployed (Headey and Warren, 2007). An in-work benefit scheme would however need to be carefully designed so as to avoid increasing marginal effective tax rates and reduce incentives to work (OECD, 2005b). To this end, the interaction with other transfers should be taken into account. For instance, in-work benefits could replace the current system of quite generous earning disregards, with out-of-work benefits being withdrawn more quickly. An income boost at an economically more adequate earnings level would improve work incentives for those currently combining small amounts of work with benefit receipt.

Plans to re-introduce unfair dismissal protection for small and medium-sized businesses should not be allowed to reduce labour market efficiency by limiting the redeployment of labour (OECD, 2007b). The implementation of a small business fair dismissal code is welcome if it does not entail high administrative costs. For that matter, the code might be extended to all firms to accompany the tightening of the legislation, even if, according to the OECD, the average level of employment protection is expected to remain moderate in international comparison (Figure 4.9).

Figure 4.9. **Restrictiveness of employment protection legislation**[1]

Index scale of 0-6 from least to most restrictive, 2006



StatLink http://dx.doi.org/10.1787/472300373260

1. The OECD aggregate is an unweighted average excluding Iceland.

Source: OECD (2007), *Going for Growth,* Economic Policy Reforms, OECD Publishing.

The authorities should pursue the simplification of the industrial relations system. There is little benefit to regulatory differentiation between the states, which – judging from the system's persistent complexity – hardly seems to have been conducive to "regulatory competition". But it is important that this simplification process does not lead to alignment on the most restrictive state standards.

Evaluation and recommendations

While Australia has a competition-friendly regulatory framework, there is still substantial room for improving how product markets work, and in particular for reducing geographical segmentation. In some areas, Australia is still not a single market, but rather eight distinct ones because of the disparate regulations of the states, which in some cases duplicate national regulations as well. Not only does this fragmentation affect certain specific sectors, such as energy and freight, but a vast complex of regulations in areas such as taxation, environment, consumer protection and employment impacts on virtually everything that companies do. This situation, which has historical roots, is no longer justified because of the impediments and distortions it induces in resource allocation and investment decisions. Harmonisation and unification of the regulatory framework, to which the authorities are committed, is a vital challenge for the years ahead and must remain a policy priority. The recent progress achieved in this domain is promising and should continue. At the same time, there must be efforts to modernise regulations so as to reap the benefits of technological developments in the realms of telecommunications and freight, for example, as suggested in the recommendations set forth in Box 4.3. Moreover, it is important to preserve sufficient labour-market flexibility, especially a decentralised wage negotiation system. The labour market would also benefit from the simplification and harmonisation of regulations between the states, as well as by moderate minimum wages and labour costs, which is not incompatible with effective protection of the most vulnerable wage earners.

Box 4.3. **Main recommendations for product and labour markets**

Improve regulation of the product market

- Revisit the recent reforms regarding predatory pricing practices to remedy their shortcomings. Revised legislation should provide for subsequent evaluation of its application.
- Introduce criminal sanctions against hard-core price-fixing cartels, while preserving the effectiveness of the leniency programme. Take care that the extension of group actions does not impair the effectiveness of these programmes, by limiting access to information about firms that report cartels.
- Reform consumer protection legislation to establish a single generic law and a single regulator in this area. Reduce the number of sector-specific regulations and harmonise them between the states.
- Expand recourse options for consumers. Expand the powers of the ACCC so that it can verify and impose sanctions for deceptive advertising. Institute a uniform system of product labelling that discloses unit prices.

Simplify and harmonise regulations

- Speed up the harmonisation of regulations between the states and strengthen mechanisms for mutual recognition of regulatory standards. In the event of problems with the harmonisation of key regulations, consider creating nationwide frameworks that would allow firms to bypass state regulations.
- Harmonise enforcement practices of the various regulators.
- Improve the practices by which states design and formulate regulations, introducing a prior-consultation requirement and enforcement monitoring by independent bodies.

Develop a nationwide energy market responsive to environmental objectives

- Pursue reforms that encourage the emergence of a nationwide competitive market. Pursue the privatisation of companies still under government control. Impose limitations on cross-shareholdings between firms managing infrastructure and those operating in competitive segments of the market.
- Clarify the measures to reduce greenhouse gas emissions quickly.
- Remove the ceilings on retail electricity prices rapidly.

Expand and improve the supply of broadband Internet access

- Consider a functional separation between the management of broadband Internet access infrastructure and marketing activities, in order to encourage construction of a fibre optic network without impairing competition.
- Promote a local, rather than nationwide, approach to raising broadband supply to achieve better adjustment to market conditions and to intensify competition between different types of infrastructure.

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Box 4.3. **Main recommendations for product and labour markets** *(cont.)*

Expand the supply of freight services and improve the co-ordination thereof

- Continue to simplify and harmonise the regulation of nationally significant freight infrastructure. Implement uniform state standards for heavy goods vehicles and regimes for access to railway infrastructure. Establish nationwide standards for the approval of port dredging projects.
- Implement a road freight pricing scheme that takes into account the intensity of network use (mass transported and distances travelled) and place of use.
- Bolster efforts to co-ordinate investment in transport by extending the AusLink programme to the port sector. Tighten selection criteria for government infrastructure projects. Give more financial responsibility and adequate resources to the local jurisdictions to cover the operating costs and investment needs of their road networks.
- Consider extending non-discriminatory access regimes to terminal container-loading services. Review application of the vertical-separation principle and the national access regime on portions of the railway network where competition from road or maritime transport would preclude monopoly rents.

Maintain a flexible labour market

- Take care that labour market reforms preserve collective bargaining at the firm level to maintain a close link between productivity growth and wages.
- Consider introducing a system of employment-related benefits in parallel with moderate minimum wage increases in order to encourage employment of the low skilled and protect the most vulnerable wage-earners.
- Modernise awards and harmonise the system of industrial relations between the states, avoiding adjustments towards the most restrictive standards.

Notes

1. These lawsuits enable large groups of persons, such as consumers, to assert their rights. Third-party funding generally covers court costs and penalties if a suit is unsuccessful but also exacts a 30-40% share of any financial awards to the plaintiffs if a suit is won.
2. The Productivity Commission has identified 45 sectoral regulations that apply in only one or two states. Examples include rules covering plasterers and glaziers (Productivity Commission, 2008a).
3. This body, comprising ministers with responsibility for consumer issues from the Commonwealth, the states and territories and New Zealand, oversees and standardises the regulatory provisions of those jurisdictions. However, its decisions take a very long time to implement, even when a consensus emerges for regulatory change (Productivity Commission, 2008a).
4. The number of firms doing business throughout Australia rose by more than 70% between 2003 and June 2007 (ABS, 2007).
5. The OECD countries have recently paid greater attention to measuring corporate administrative expenses, in many cases using the standard cost model approach (OECD, 2006a). In Australia, a business cost calculator has been developed to expand this approach. Among the calculator's inputs are: *i)* time spent collecting the required information, filling out forms and conducting compliance inspections; *ii)* recruitment and training of staff for new processes and equipment; *iii)* purchase of materials and equipment for regulatory compliance; *iv)* calculator-assisted payment of administrative expenses; and *v)* gathering information from specialists to adapt to regulations (Productivity Commission, 2007b).
6. Initially limited to the functioning of the wholesale market and the electric power transmission network, the powers of these bodies have expanded and cover all activities in the gas and electricity sectors since July 2008.

7. On average between 2006 and 2008, electricity prices were 64% higher than between 1999 and 2001 in New South Wales, whereas they had risen respectively by 48% in Victoria and 29% in Queensland and dropped by 12% in South Australia (ERIG, 2007). It is also in New South Wales that the signs that electric companies are wielding market power are most pronounced.
8. In Victoria, competition in the retail market has yielded benefits in terms of greater differentiation of the services on offer and lower prices as compared to the regulated system (by between 2% and 10% for electricity and between 3% and 6% for gas). Moreover, the AEMC has shown that the conditions of market entry for new marketing firms are favourable, and according to international comparisons, the rate at which consumers switch suppliers is higher than in other countries (AEMC, 2007).
9. Only 52.5% of Australian firms of 10 employees or more had developed their own website in the mid-2000s, which is lower than in the EU25 country average (62.5%) and much below the best performing countries such as Denmark, Japan, Sweden and Switzerland for which this ratio exceeds 80% (OECD, 2007c).
10. All subscription offers are subject to bit/data cap limits ("bitcap") in Australia and prices charged once a bitcap is used are amongst the highest in the OECD (*www.oecd.org/sti/ict/broadband*).
11. In 2006, 46% of households in large Australian cities had access to broadband Internet services, *versus* 24% in remote regions.
12. FTTN ("fibre to the node" or "fibre to the neighbourhood") networks are used up to a point of interconnection in proximity to users, where they then hook up with a traditional copper network which links them to end users. This type of infrastructure, which take fibre optics all the way to end users, differs from FTTH ("fibre to the home") networks, which are faster but also costlier. The choice of FTTN technology makes it more difficult to provide competitive access to the network.
13. If Telstra wins the tender, it will also gradually shut down its unbundling facilities on the copper network, which will result in stranded investment of its competitors. Provisions need to be taken to ensure sufficient lead time for the new entrants before phasing out unbundling facilities.
14. In the case of Melbourne, for example, 30% of container ships are unable to enter or exit the port fully loaded (House of Representatives, 2007).
15. Domestic freight, as measured in terms of tonnage transported, is dominated by road haulage. Road freight accounts for roughly 73% of domestic freight, *versus* respectively 25% and 2% for railway and maritime transport (House of Representatives, 2007). If the distances travelled (*i.e.* tonne-kilometres) are factored in, the breakdown of freight is more evenly balanced, however. On the other hand, virtually all of Australia's international freight is conveyed by sea.
16. The relative decrease in the price of rail transport since the late 1980s seems in fact to have had only a limited impact on market-share trends for the two modes of transport.
17. These areas are as follows: classifications of employees and skill-based career paths; ordinary hours of work; rates of pay; rates of pay for piece work and miscellaneous bonuses; annual leave and holiday pay; long-service leave; personal/carer's leave; other leave; public holidays; allowances; loadings for working overtime; casual employment or shift work; loadings; redundancy pay and notice period; resignation; dispute-settling procedures; jury service; type of employment (full-time, casual, part-time or shift work); retirement; conditions of pay and employment of domestic workers.
18. The obligation to negotiate in good faith includes: *i)* participating in meetings held at reasonable times; *ii)* distributing the information needed for negotiations in a timely fashion; and *iii)* responding fairly quickly to proposals made by other parties. Fair Work Australia can issue orders if participants fail to negotiate in good faith.

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Chapter 5

Improving water management

Over the past 15 years, water management issues have come to the fore in economic policy discussions. Over-exploitation of water and harmful environmental effects have become major concerns, while water is not used efficiently, particularly in rural areas. Water extraction levels that are ecologically sustainable have been breached in a number of regions. Guaranteeing water security and diversifying supply for the major urban areas has become a major policy challenge. Difficulties are likely to grow because demand will rise further, while climate change is likely to further reduce available water resources. The authorities have recently stepped up reforms aimed at remedying over-exploitation, stopping wastage caused by deficient water delivery systems and directing water use towards the most productive activities. This chapter reviews the challenges posed by water management, assesses the policies to meet them and suggests ways to make them more effective.

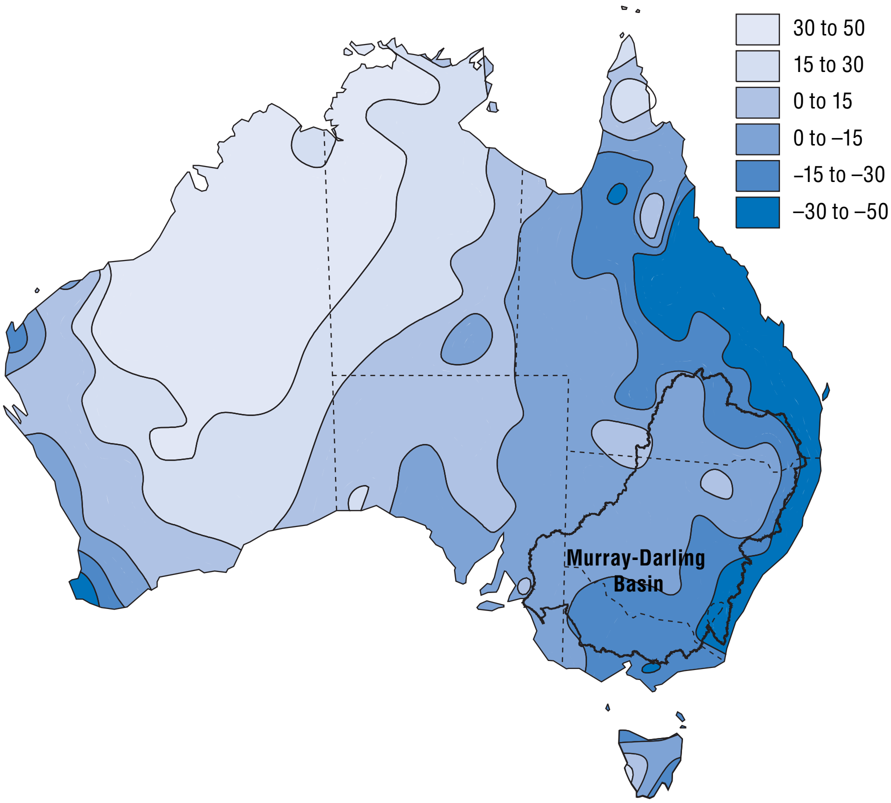
Water resources are over-exploited and poorly used

Excessive pressures on water resources

Renowned as the world's most arid inhabited continent, Australia has a climate notable for its wide rainfall variability across the regions, seasons and years. To contend with this situation, its storage capacity (equivalent to three olympic-sized swimming pools per inhabitant) is three times greater relative to consumption than in Europe or the United States (Marsden Jacob, 2006). Flooding is frequent and droughts can be very severe, as illustrated by the one that has lasted since the early 2000s. It is at least as severe as the historic one lasting from 1895 to 1902 which led to the creation of the Federation and is related to a downward trend in rainfall. Over the past fifty years rainfall has declined in the most populous parts of the country, though it has increased in the tropical areas (Figure 5.1).

Figure 5.1. **Long-term changes in rainfall**[1]

Rate of change in millimetres per decade, 1950-2006

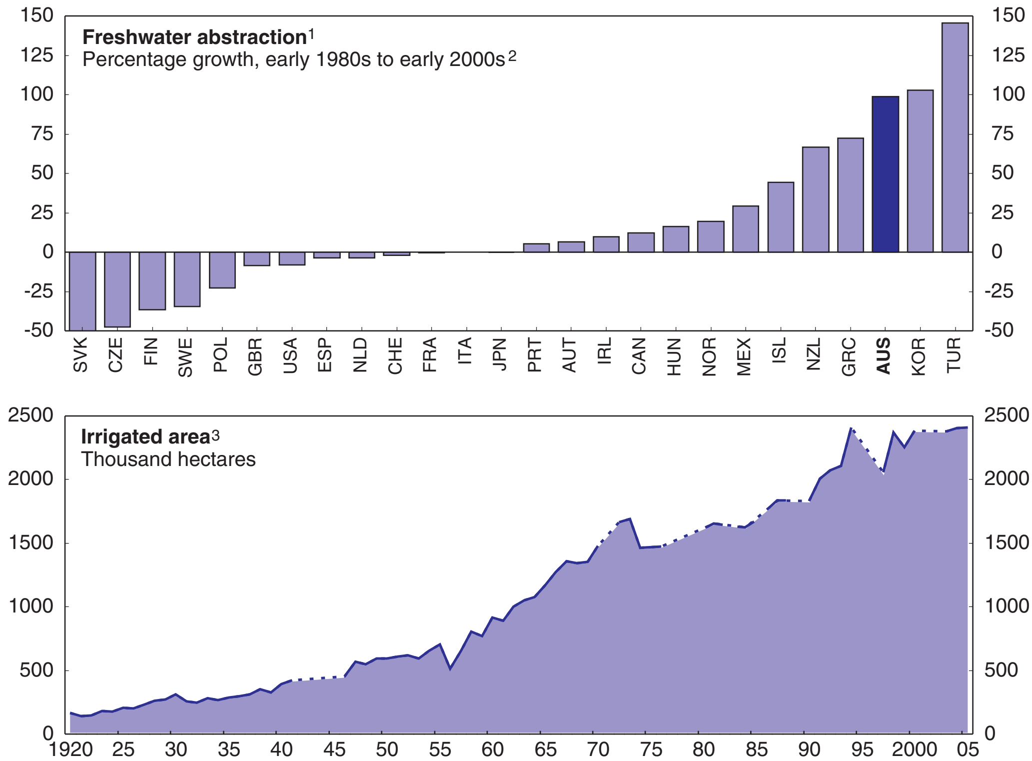


1. This map shows the value of the observed linear trend of annual rainfall.

Source: Australian Bureau of Meteorology, *www.bom.gov.au*, accessed June 2007.

Water abstraction has risen sharply since 1980 and faster than in the other OECD countries (Figure 5.2) (a glossary defining some technical terms used in the chapter is provided in Annex 5.A1). Water use by agriculture has surged due to the expansion of irrigation (ABS, 2006a). Water use by farms accounts for two-thirds of total consumption and per capita consumption is high compared with the OECD average, including for domestic use (Figure 5.3). All told, Australia faces a problem concerning the sustainable use of its water resources.

Figure 5.2. **Freshwater abstraction and irrigation**



StatLink http://dx.doi.org/10.1787/472315818016

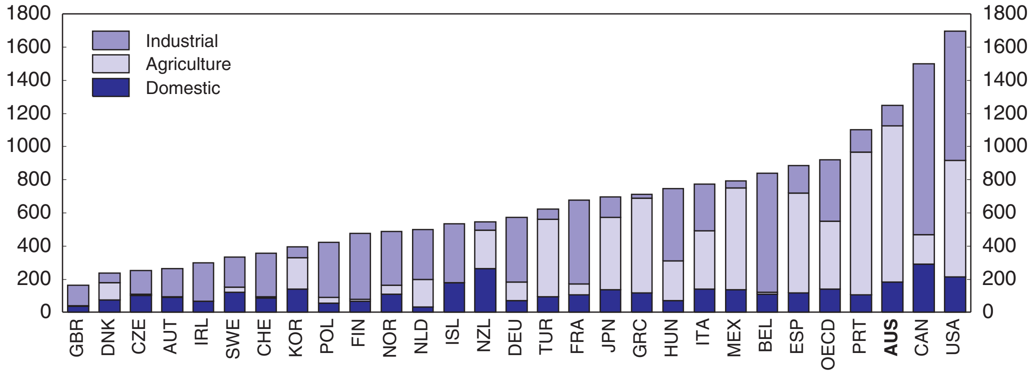
1. Water taken from ground or surface water sources and conveyed to the place of use. Definitions and estimation methods employed by countries may vary considerably.
2. Growth to late 1990s for Australia, Finland, Greece, Italy, Korea and Portugal; to mid-1990s for Canada, Ireland, New Zealand and Norway.
3. There are gaps and breaks in series (indicated by a dotted line) but the trend is clear.

Source: OECD (2005), *OECD Environmental Data: Compendium* 2004; OECD (2008), *Environmental Performance Review: Australia*, OECD Publishing; and ABS (2006), *Water Account Australia* 2004-05 (cat. No. 4610.0), Australian Bureau of Statistics.

As emphasised by recent official studies (NWC, 2007), it is difficult to quantify the scale of the pressure on underground and surface water resources. Devising methods and indicators for assessing, supervising and managing available capacity, while at the same time preserving the environment, is one of the main challenges. It would seem, though, that the pressures are greatest in the Murray-Darling Basin (MDB). It accounts for 14% of the country's area (equivalent to the combined surface of France and Spain), three-quarters of the irrigated land and for over 50% of water consumption; but it has only 6% of total surface runoff. The steep increase in the quantity of river water diverted for consumption has significantly reduced water flow in rivers, impacting adversely on biodiversity,

Figure 5.3. **Water usage per capita by sector**[1]

Kilolitres, 2000



StatLink http://dx.doi.org/10.1787/472386367876

1. Data shown for Belgium include Luxembourg. The OECD aggregate excludes the Slovak Republic.

Source: Food and Agriculture Organization of the United Nations, *Aquastat Database*, accessed September 2008; and OECD (2008), *OECD Economic Outlook: Statistics and Projections – online database*, No. 83, OECD Publishing.

damaging water quality through the proliferation of algae, and increasing salinity (OECD, 2001). Salinity has direct economic costs which include the loss of arable land, declining crop yields and deteriorating infrastructure.

The pressure on water resources has also affected urban areas. In the absence of a pricing mechanism, state and territorial governments have imposed restrictions on water use for external purposes (*e.g.* watering of gardens). As long as they remain limited, such restrictions can encourage more responsible water consumption; however, they are severe and are becoming more and more frequent. At end-2006, 16 of the 24 Australian towns with more than 50 000 inhabitants, and all the state capitals apart from Darwin, had imposed restrictions (Marsden Jacob, 2006). According to the Productivity Commission (2008), the economic cost of these restrictions amounted to AUD 900 million for households in 2005 (about 1% of GDP)[1] and it would have been probably a multi-billion figure if the deterioration of gardens, the purchase of new watering systems and the time spent watering gardens in a permitted, but labour-intensive, way were taken into account. Reduced rainfall reliability has prompted several towns to invest in desalination or recycling plants even though doubts have been expressed regarding the economic justification of certain costly projects (Brennan, Tapsuwan and Ingram, 2007).

Although economic dynamism and good environmental results are not incompatible, the pressure on water resources could in the longer term curb potential growth if it were, for example, to result in immigration being restricted so as to limit population growth. This risk could be accentuated by the effects of climate change. Australia's characteristics make it sensitive to the consequences of climate change, which, though hard to predict, could accentuate the decline in rainfall in the most heavily populated areas, while increasing evaporation because of the rise in temperature. Recent observations by the Bureau of Meteorology establish a link between the severity of the present drought and the effects of climate change (Garnaut, 2008). This means that historical data for water supplies could be deceptive as regards future resources – particularly since other phenomena, albeit of lesser importance, could also weigh on potential supply. The latter include:

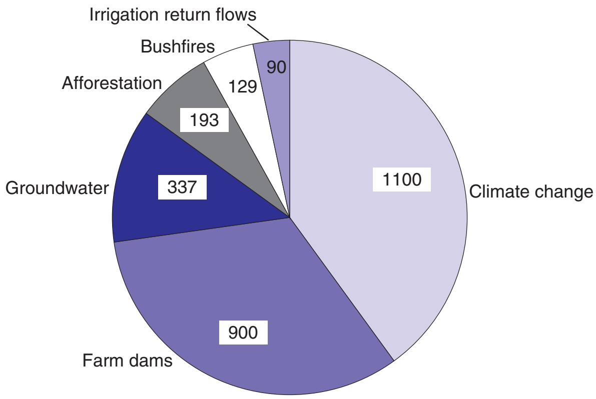
- The effect of soil-use changes, such as the present re-forestation projects, which reduce runoff.[2]

- The unregulated increase in the number of farm-level dams, which has risen sharply over the past decade, thereby reducing stream flows by intercepting surface runoff.
- Lastly, the increased use of groundwater for agricultural purposes poses problems because of the gaps in the understanding of how it interacts with surface water. Because the management of surface and groundwater is often separate, there is a risk of double counting resources.

The cumulative effect of these risks, which have been quantified for the MDB, could cut annual runoff in this basin by between 10% and 23% compared to its present average level over the coming 20 years (Figure 5.4) and by between 19% and 38% over the next 50 years (van Dijk *et al.*, 2006).

Figure 5.4. **Risks to shared water resources in the Murray-Darling Basin**

Estimated impact of the risks on total surface water over the next 20 years, in gigalitres



StatLink http://dx.doi.org/10.1787/472413838844

Source: Van Dijk, A. *et al.* (2006), *Risks to the Shared Water Resources of the Murray-Darling Basin*, Murray-Darling Basin Commission.

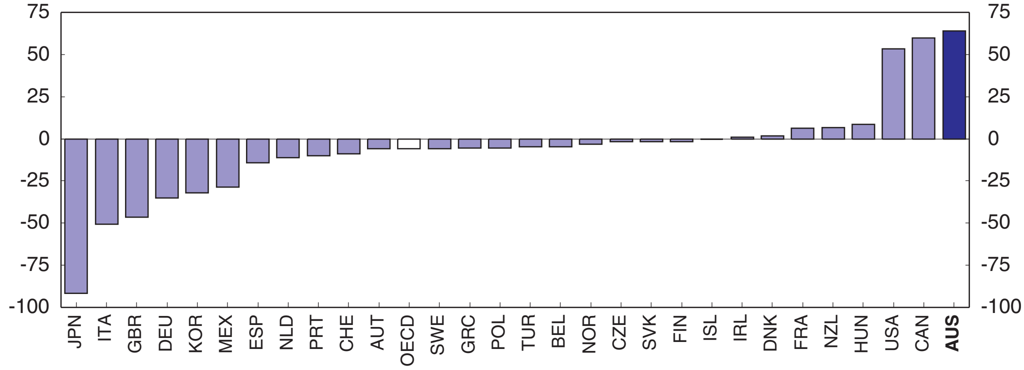
Water use could be more efficient

The imbalance between water supply and demand is largely due to its low price, which hampers the development of infrastructure that would increase capacity or avoid wastage. The limited influence of prices also hinders the efficiency of water use. For example, leakage and evaporation in delivery systems are sizeable. Delivery losses were put at 18% on average in 2004/05, and they amount to as much as 23% in rural areas (ABS, 2006a). In addition, losses in farm pipelines could represent up to 20% of the water delivered, while between 10% and 15% of water used for crops may be wasted because of uneconomic methods of watering (Howard, 2007). Although these losses partly seep back into the environment, they often do not do so at the most opportune times and can have unwanted effects in terms of salinity.

The weakness of market mechanisms is also curbing incentives to improve resource allocation and management, as well as the opportunities for those holding water rights to sell any unused water, all the more so as the possibilities of transfer of water between sectors or activities are limited (Roberts, Mitchell and Douglas, 2006). At an aggregate level, there are for instance considerable disparities in water productivity within agriculture. Rice and cotton crops consumed nearly 45% of the water resources allocated to agriculture in 2004/05, but accounted for only 16% of farm production. Such types of crops do not seem well adapted to the Australian climate. As shown by analysis of the balance of trade from the point of view of its embodied water content, they contribute to make Australia the world's leading net exporter of virtual water, despite its natural aridity (Figure 5.5).[3] Big gains could also be achieved by making it easier to reallocate water towards activities requiring less water and with higher value-added such as horticulture (Figure 5.6).

Figure 5.5. **Virtual water flow balances**[1]

Net virtual water exports, billion cubic metres per year, 1997-2001



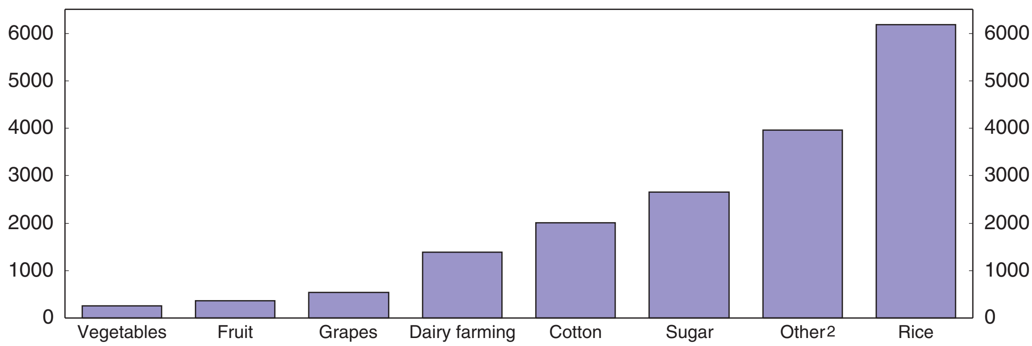
StatLink http://dx.doi.org/10.1787/472422012487

1. The OECD aggregate is an unweighted average.

Source: Chapagain, A.K. and A.Y. Hoekstra (2004), "Water Footprints of Nations", *Value of Water Research Reports*, No. 16, UNESCO-IHE Institute for Water Education, Delft.

Figure 5.6. **Water used in irrigated agricultural production**[1]

Litres of water per dollar of value added, 2004/05



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1. In some cases, these data may be underestimated due to factors such as the planting of a second crop on flood-irrigated land.
2. Includes livestock, pasture, grains and other horticultural activities.

Source: ABS (2006), *Water Account Australia 2004-05* (cat. No. 4610.0), Australian Bureau of Statistics.

Reforms and their implementation

The over-exploitation of water resources and their ineffective use are the result of Australia's long-standing policy of promoting intensive agriculture. Until the 1980s, irrigation infrastructure received strong government support, though the profitability of these projects was not always guaranteed (Quiggin, 2006). The states are responsible for water management and they had issued an excessive number of extraction rights at a very low price (Freebairn, 2004). There has also been a lack of co-ordination between government measures. The role of central government in water management was very limited, which has not only resulted in practices and regulations that differ between jurisdictions in terms of resource management and utilisation entitlements, but has also made it difficult to introduce an integrated management of water systems covering several jurisdictions, such as the Murray-Darling Basin.

Ambitious reforms have been launched

Starting in the 1980s, a growing awareness of ecological problems that often stretch beyond state boundaries prompted a number of reforms. Co-ordination was improved with the creation of the MDB Commission in 1986, aimed at better managing the Basin, which is shared between five states. The need for a national approach to ensure a better use of water resources and establishing a better balance between consumption and environmental requirements was confirmed in 1994 by the adoption of the Water Reform Framework by the Council of Australian Governments (COAG). The objective of the reform was to develop a water market, set prices that cover all costs, and ensure that allocations are reserved *a priori* for the environment instead of being left over after commercial exploitation. However, limited progress was made in solving the over-allocation problems over the following ten years. Moreover, with the better understanding of hydrological systems it became necessary to extend the reform agenda.

Adopted in 2004 by the COAG, the National Water Initiative (NWI) is now the blueprint for water policy. It is an ambitious reform compared to those carried out in other OECD countries (OECD, 2008), designed to introduce resource management combining market mechanisms, planning and regulation (Box 5.1). The states are required to draw up plans including environmental objectives which will ensure the return of overused systems to ecologically viable levels. This involves taking fuller account of the interaction between surface and groundwater systems. Once environmental flows have been established, the

Box 5.1. **What are the prerequisites for efficient water allocation?**

The prerequisite for the efficient allocation of water from a given source is that the marginal social benefit for the different users should be the same. In view of the various characteristics of water, this requires management based on both market mechanisms and government measures. A competitive market provides a price signal indicating the scarcity of this resource and ensuring that the users derive equal marginal benefits from consuming it. For these markets to function well, there have to be clearly defined and freely exchangeable water ownership entitlements. Government intervention is needed to take account of the negative externalities generated by the use of water, such as pollution that is often associated with its use. These can give rise to specific regulations or taxes, or the introduction of a system of tradable pollution permits designed to internalise the costs not taken into account by the market.

Water also has some public good characteristics as it provides benefits by preserving the environment and its attractive features. Government intervention is thus also necessary in this case to ensure sufficient environmental flows providing equality of marginal social benefits between users of water as a private and public good. To achieve this objective, the first prerequisite is to gauge the influence of environmental flows on the environment itself, which is difficult. The marginal benefits due to these environmental gains have also to be valued, which is again a delicate undertaking (Freebairn, 2004).

remaining resources can be used to meet consumption requirements on the basis of an entitlements system which splits available capacity between users instead of allocating specific volumes.[4] The NWI also contains a number of measures aimed at expanding the market. These include abolishing barriers to water trade and clarifying and strengthening the security of water access entitlements in a manner that is compatible between jurisdictions. The separation of water from land ownership, which began in 1994, has been confirmed. The reform also includes a formula for risk sharing between users and the authorities with the objective of clarifying the content of water access entitlements in the event of a future decline in resources. The states are required to establish a pricing system which ensures full cost recovery, including environmental costs, in both urban and rural areas. Lastly, an independent body, the National Water Commission (NWC), has been set up to oversee the application of these measures and implement the programmes devised by the Australian Government Water Fund. The purpose of the new Fund, which has a budget of AUD 2 billion over five years, is to increase investment in water utilisation technologies and practices.

Reform progress has been uneven

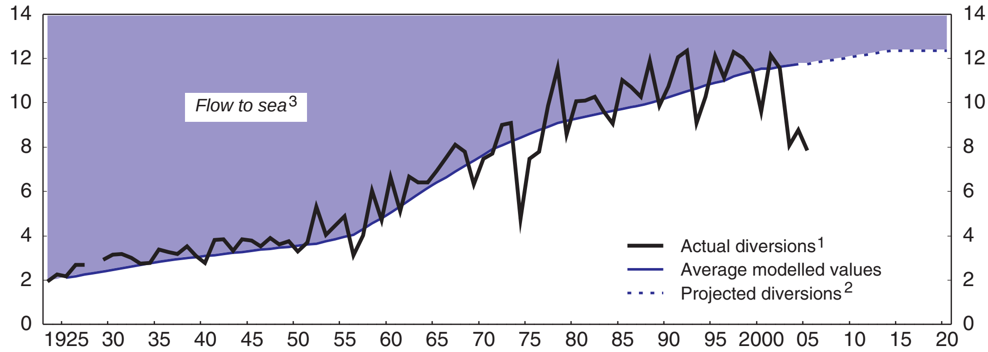
The implementation of these reforms has moved forward, though not to the same degree in all areas. Environmental requirements are now explicitly recognised, which in the case of the MDB resulted as early as 1997 in the introduction of a permanent ceiling on water abstraction. A five year, AUD 500 million programme (Living Murray Initiative) was launched in 2004 with the objective of restoring 500 gigalitres (GL) per year to the environment via, in particular, improvements in the distribution infrastructure to reduce water losses. Lastly, NWI implementation plans that identify environmental requirements and set aside allocations for that purpose have been drawn up in almost all states.

The NWC has, however, expressed some reservations as to the quality and transparency of calculations for the allocations reserved for the environment and concerning the pace at which governments expect to solve resource over-allocation. The most recent calculations of sustainable water exploitation levels are based on states' estimates for 2005, using changing and often not very transparent criteria. In the absence of a joint approach, many states based their estimates on the effective level of resource exploitation rather than on a detailed analysis of sustainable use. They may also be misleading because they are linked to the weather conditions in 2005, whereas a period of at least ten years is required to take account of the impact of changes in climate on the availability of water resources (NWC, 2007). Integrated management of surface and groundwater systems is rarely effective, moreover, as the MDB experience shows: increased groundwater exploitation plays an important role, not just because it reduces river water flows,[5] but also because groundwater can mobilise salt and cause environmental damage in areas where many soils and aquifers are naturally saline (van Dijk *et al.*, 2006). In the case of the MDB, while putting a ceiling on extraction has contained the increase in water abstraction (Figure 5.7), the rule is not rigorously complied with because there are no penalties. Still more problematic is the fact that strict application of the ceiling would not suffice to prevent over-utilisation (OECD, 2008). In this context, the Living Murray initiative, aimed at reducing the over-exploitation of a river and improving its ecological balance, looks inadequate.

Notable progress has been made on the second aspect of the reform, aimed at adapting and harmonising the legal frameworks of the states to promote the development

Figure 5.7. **Growth in water use in the Murray-Darling Basin**

Total diversions, thousand gigalitres per year



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1. The decrease in diversions in recent years reflects mainly drought conditions.
2. Assuming unrestricted expansion under 1993/94 management rules.
3. Based on an average natural flow of 14 000 gigalitres per year.

Source: Murray-Darling Basin Commission and OECD (2008), *Environmental Performance Review: Australia*, OECD Publishing.

of water markets. One result is that delivery has been separated from regulation in all jurisdictions. Progress has been made in converting water access entitlements to a system of tradable ownership entitlements which are spelt out better than in the past, when they generally took the form of leases allowing water to be abstracted from a piece of land (Freebairn and Quiggin, 2006). Most of these new entitlements have been separated from land ownership rights to make them easier to trade. State legislation has also been amended to eliminate the obstacles to water transactions both within and between jurisdictions, even if limitations affecting trading in permanent rights remain in force. Lastly, registers of water access entitlements and transactions have been drawn up and efforts are being made to ensure their compatibility at the national level.

Thanks to these reforms, Australia has become one of the few OECD countries to have developed water markets in rural areas. Transactions in such markets involve either access entitlements, which are *permanent* in nature and ensure a given quantity of water from a specific basin, or allocations, which are of a *temporary* nature. Seasonal trading is now largely liberalised, although there are still some administrative and regulatory constraints such as the existence of taxes, differences between districts as regards closing dates for these transactions and the obligation to provide advance notification of the intention to sell water (Productivity Commission, 2006). Temporary transactions have flourished, allowing resources to be reallocated mainly between irrigators in the same region or the same hydrological management basin (Peterson *et al.*, 2004). Trades in permanent access entitlements, like those between different users and between states have, on the other hand, been very limited. In 2004/05, 1 300 GL were traded, corresponding to 7% of total consumption and 4% of water entitlements. However, less than 250 GL (1.3% of consumption) involved permanent trades and inter-state trading totalled only 87 GL, of which a mere 5 GL were permanent (ABS, 2006a).

Broader and deeper markets in permanent water access entitlements in rural areas would facilitate restructuring, whether this involves shutting down declining activities or the emergence of new projects. Many uses of water are accompanied by additional investment amortised over long periods and require security of supply that only permanent access entitlements can provide. More inter-regional water trading would also help to curb the economic impact of a possible decline in water resources in the future (Peterson *et al.*, 2004). More active markets would also be an efficient way of facilitating the purchase of these resources for ecological reasons and would make the cost of such procedures transparent. The emergence of these markets continues to be hampered by a number of obstacles which include restrictions on certain actors participating in these markets, persistent differences between jurisdictions as to the nature of water access entitlements, and quotas or taxes on permanent trades in certain districts (see below). The delays for completing a transaction, which can exceed three months in some cases because of red tape, are long and also deter trade.[6]

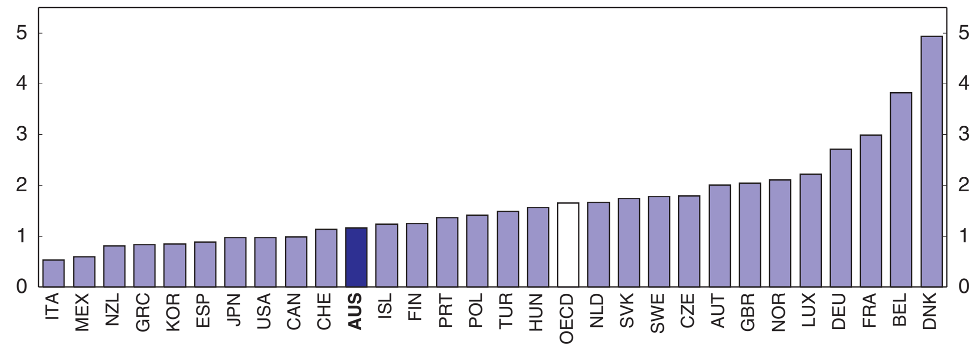
Where water pricing is concerned, progress has been made towards full cost recovery of water storage, delivery and management on a consistent basis, including between urban and rural areas. This consistency is needed to avoid distortions in investment and ensure competitive neutrality as regards water trading. The administrative provisions have been adopted in almost all jurisdictions, where regulators are now in charge of calculating appropriate price levels.[7] However, the implementation of full cost recovery is generally at a less advanced stage in rural than in urban areas. There are also significant differences in water charging practices between rural and urban areas, especially as regards capital cost recovery, which are less well identified in rural zones because information on existing capital is scant (NWI Steering Group, 2007). Also, the principle of charging for water on the basis of real costs is interpreted rather narrowly,[8] which in some cases means states have to compensate for the water companies' losses. It is not always clear that these subsidies are in line with the principles governing universal service obligations under the NWI (OECD, 2008). These factors, together with the absence of water trading between rural and urban areas, imply that the price of the water consumed by agriculture is much lower than that paid by households, as in most other OECD countries. This gap is partly explained by quality differences.

In urban areas, the supply chain of water from storage to delivery and waste water removal is entirely controlled by public monopolies. Although water management appears to have many features that are similar to other utilities, such as electricity or telecommunications, which also rely on a natural monopoly transmission infrastructure, it is not submitted to market mechanisms (Productivity Commission, 2008). Water rates, which are determined administratively, tend to distinguish between fixed and variable charges, which have been adjusted to better reflect long-term marginal costs. Often, however, cost estimates lack transparency and do not always include hydrological management and planning costs and only rarely factor in environmental costs (NWI Steering Group, 2007). A number of factors also reduce fixed water charges in urban areas (OECD, 2008). These include the frequent existence of government subsidies for infrastructure funding,[9] and the fact that a large proportion of the cost of capital is treated as sunk costs. Infrastructure is thus valued at well below its replacement value. If water charges were set in the same way as in the electricity and telecommunications sectors, they would have to be increased by an average of one-third in state capitals (Marsden Jacob, 2006). Moreover, available indicators show that average water prices in urban areas are low in international comparison (Figure 5.8).

Many consumers are not aware of these price signals; some 30% of Australians rent their homes and do not pay directly for water, this being done by the owner. In addition, the states give specific users, including retired people, various reductions on their water bills

Figure 5.8. **Cost of water for urban consumers**

US dollars per cubic metre, June 2007[1]



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1. User cost (based on 2007 purchasing power parities) assuming consumption of 15 cubic metres per month per user; including value added tax but excluding wastewater treatment. Unweighted average of the city data available for each country. The OECD aggregate is an unweighted average excluding Ireland.

Source: Preliminary estimates from Global Water Intelligence.

(as is also the case for electricity and gas). Finally, water prices in urban centers do not rise in times of a shortage. However, recent studies suggest that even modest price changes could have a significant effect on water consumption (Productivity Commission, 2008).

Accelerating the implementation of the reforms

Correcting the persistent over-allocation of water entitlements

A number of obstacles will have to be removed to overcome the persistent over-allocation of water entitlements in several regions. First, the scale of the problem needs to be clearly identified. The current estimates are unreliable and not homogeneous across jurisdictions. These shortcomings largely reflect the inability of the present water information system to guide efficient management. The decentralised administration of water policy makes compiling the required data complicated (NWC, 2007). Not only do data collected for the management of the resources vary across jurisdictions, they are also differently organised and stored. Having an efficient and harmonised information system is essential to enhance scientific knowledge in a number of areas. The concept of sustainable exploitation, for example, which is at present defined in terms of an average measure, needs to be improved to take account of the variability of river flows over the year. More importantly, the interaction between groundwater and river water has to be better understood and taken into consideration to assess the intensity of resource pressures. Insufficient understanding of that interaction, coupled with the separate management of surface and groundwater, is especially prejudicial during periods of low rainfall and heavy utilisation because the restrictions imposed on river water extraction, as with the MDB cap, transfer the demand pressures onto groundwater for which operating licenses are still being awarded. The risk of resources being over-utilised as a result is difficult to assess without knowing more about the impact of groundwater abstraction on stream flows, which can take a varying amount of time to be felt – possibly decades, depending on the distance between the groundwater and the river and on other hydrological properties such as, for example, evapotranspiration (Evans, 2007).

Water management also requires better co-ordination. There are 340 surface and 367 groundwater management districts subject to separate plans and mechanisms; thus, hydrological systems which are physically connected often depend on different local authorities. Management decisions need however to take a broader, at least regional, perspective as local changes in land use and/or irrigation techniques can reduce the amount of water available to downstream users and the environment. In many areas, water access entitlements and seasonal allocations are indeed based on the assumption that a certain amount of irrigation water returns to the hydrological system in the form of runoff. Moreover, integrated management of surface and groundwater involves considering the cross-border nature of certain resources, while closer co-ordination is vital in the case of river basins shared between several jurisdictions.

The new national plan, Water for the Future (Box 5.2), which is based on the 2007 Water Act and the March 2008 COAG agreement, aims to improve the governance of the MDB and to develop an integrated management of the Basin, which should help to overcome these difficulties. This plan includes important measures to develop a national information system providing homogeneous and up-to-date data on water resources and their use. The ongoing study by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) aimed at calculating both present and future sustainable exploitation thresholds, initially in the MDB and expanded to include other irrigation districts, factoring in climate change, will make an appreciable contribution, as will the research in the framework of the Australian Government Water Fund to improve the understanding and management of the interaction between ground and surface water. These measures will facilitate the vital task of drawing up joint methods for calculating sustainable water exploitation thresholds. However, it is also important to devise programmes that heighten public awareness of what is at stake. Abiding by the limits set for water use in fact depends at least as much on compliance with the objectives pursued by the groups concerned as on changes to the legal framework. It will be difficult to ensure that the latter is respected if it is not accepted because of the geographical dispersion of sources of supply, underground especially (Evans, 2007).

This recent reform should help to solve the over-allocation of water in the MDB, but its implementation seems too slow. At the same time, it is also important to have a better understanding of the links between environmental conditions and water availability. This is because a mechanistic assessment of environmental requirements is liable to be arbitrary in the absence of an assessment of the related ecological and social benefits. This is why the NWC has developed a national Framework for the Assessment of River and Wetland Health. The framework has been successfully tested in two states, but additional analyses are still needed before it can be applied everywhere (NWC, 2007).

Until efficient water management is in place, prudent use of water is necessary in the short term, as is recognised by most Australian experts. A Natural Heritage Trust report proposes, for example, that in the absence of precise information as to their degree of interaction ground and surface water be managed on the assumption that the connection between them is 100% (SKM, 2006).[10] According to Evans (2007), such a rule – based on the precautionary principle – would be justified in many cases. Water for the Future rightly sets a cap on both ground and surface water extraction. However, it should also take into account water intercepted by plantation forestry, which has increased strongly over the past years. The precautionary principle would also militate in favour of mechanisms for setting permanent access entitlements and seasonal allocations not taking account of return flows, as in Queensland. This would lessen the risk of overestimating resources if more efficient irrigation techniques are adopted – as is scheduled in the Water for the Future plan.

Box 5.2. **Water for the Future**

With an AUD 12.9 billion budget to run for ten years, the plan Water for the Future complements the main provisions of the 2007 Water Act with the agreement signed in March 2008 by the states and the federal government in order to establish the foundations for sustainable water use. It focuses in particular on the management of the MDB, where water use for agriculture is the most intensive, but also includes a section concerning urban water management and supply, which was missing in the 2007 Water Act. The main points of this reform, which has scheduled a review of its first three years of operation, are the following:

- *Develop a national information system of water resources.* Investment totaling AUD 0.5 billion will go towards remedying the current shortcomings of the water information system by centralising its management within the Bureau of Meteorology. National standards are to be put in place for resource metering and utilisation, which means adopting homogeneous data collection and diffusion norms. The Bureau of Meteorology is to provide regular reports on available resources and their utilisation both nationally and in the Basin, to draw up projections on future availability and to commission research aimed at improving understanding of hydrological systems.
- *Modernise irrigation infrastructure, practices and resource use metering.* Nearly AUD 6 billion are to be spent over ten years to improve the efficiency of delivery systems and irrigation techniques. Water savings are to be shared between the environment and consumption needs of users. In this context, a subsidy of AUD 1 billion has been granted to Victoria for improving its infrastructure and saving 200 GL of water, 100 GL of which will be for the environment.
- *Solve the problem of over-allocation of utilisation entitlements in the MDB.* For this, the CSIRO has commissioned an inventory of the Basin situation with the objective of assessing the scale of over-allocation and identifying sustainable exploitation levels. The federal government is to invest AUD 3 billion over ten years to buy back water entitlements. To this end, the Act sets up a Commonwealth Environmental Water Holder.
- *Improve governance of the MDB.* This part of the reform had given rise to disagreement between the previous government and the State of Victoria which rejected the referral of powers required by the federal authorities to manage the MDB directly instead of the five states which do so at present. Under the agreement finally adopted in March 2008, the new independent MDB Authority will set the cap for the overall water extraction of the MDB, taking into account both ground and surface water. The states will retain their powers over water allocation between their irrigators. The Authority will prepare a plan by early 2011 for the management of Basin resources which will set the sustainable exploitation level to be approved by the Federal Minister. However, this plan will only come into force when the states' water plans expire, *i.e.* in 2019 for Victoria. To improve the way the water markets operate and strengthen trading between the states, the 2007 Water Act also gives the Australian Competition and Consumer Commission (ACCC) the responsibility for developing and monitoring the application of the rules governing the operation of the markets and water billing, in line with the principles laid down in the NWI.
- *Improve urban water supply and management.* Water for the Future allocates AUD 1.5 billion to fund several initiatives, including subsidising desalination projects and infrastructure to save water. It also provides financial incentives for household rainwater and greywater use.

Until now, the states and the federal authorities have resorted mainly to regulatory instruments and infrastructure investment to save water and limit the decline in river flows. To a large extent, this is also the approach adopted in Water for the Future. However, it is unlikely to be cost-effective compared to buying back water entitlements. The available studies show that the costs of these projects increase rapidly once the most profitable ones have been developed, and it is likely that the possibilities of obtaining water at less than the market price have already been taken advantage of by the irrigators themselves (Productivity Commission, 2006). The cost of water saved for the environment through the AUD 1 billion granted to Victoria equates to AUD 10 000 per megalitre (ML), *i.e.* four times the current high market price. The lack of any cost/benefit analysis of these measures, as compared to buying back water access entitlements, is liable to result in inefficient decisions influenced by lobbies, particularly since these savings could be partly illusory if infrastructure modernisation reduces flows which previously went back into the environment. It would seem preferable to obtain water *via* the market, as the federal government has also started doing by spending AUD 50 million for buying back water entitlements between March and June 2008. Besides, the NWI will also establish environmental managers. They should be given clear objectives, adequate resources and the same capacity to intervene in the markets as other participants to contribute effectively to the preservation of environmental flows. In practice however, buying back water entitlements on a large scale is currently limited by the narrowness of markets.

Using the market to buy back water entitlements and increase environmental flows has the merit of making the opportunity cost of this policy transparent. But the potentially high cost, borne by taxpayers, has given rise to the idea of making sales compulsory – contrary to what is stated in the Water for the Future plan. This approach, which could be questionable from a legal point of view, looks also politically difficult to pursue in view of the strong opposition by farmers. It would also be damaging to the functioning of the markets because of the legal uncertainties regarding water ownership entitlements that it would engender. The budgetary cost of these transfers might not be excessive, bearing in mind the tax on the capital gains made. Moreover, the owners of these entitlements seem to have only limited confidence in their future value. As Quiggin (2006) observes, the small difference between the market price of temporary allocations and permanent water entitlements suggests a high discount rate, which could well point to considerable uncertainty as to the reliability of entitlements in the future.[11] Under the NWI, the owners of water entitlements bear the risks associated with a reduction in available capacity due to climate change. Moreover, these entitlements can be modified up until 2014 if new information on the sustainable level of water system exploitation so requires, whereas after that date they will be guaranteed. Buying back future extraction entitlements (up to 2014, for example) would also allow sellers to avoid the high adjustment costs of an immediate reduction in their allocations.

Strengthening market mechanisms and trade in permanent entitlements

There are a number of reasons for the narrowness of water entitlement markets. Water is not a homogeneous resource: the water available in a particular place at a given time is not a good substitute for water supplied in another place at another period. In addition, physical obstacles (hydrological barriers) and high storage and transport costs hamper trading between regions and lead to market segmentation. That said, transactions between certain suppliers and certain areas are also hindered by regulatory and non-regulatory barriers.

The barriers restricting market access should be removed

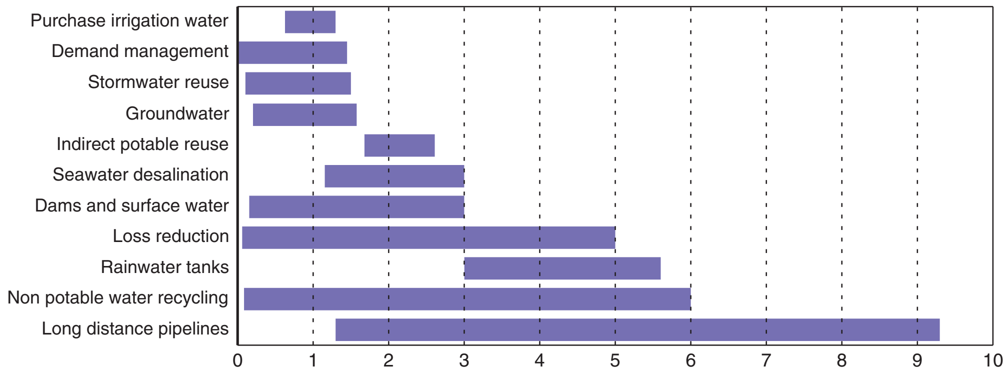
Several states prohibit or limit water purchases by ecological organisations, government agencies (including environmental managers) and persons not in possession of land, although such restrictions have been eased in recent years. In Western Australia, for example, persons not owning or occupying land are denied ownership of water, and this constraint was abolished only in July 2007 in Victoria. In this latter case, however, non-farm users are not permitted to hold more than 10% of entitlements in a given catchment area collectively. Similar restrictions are in force in certain districts of New South Wales, with the result that water markets are more often than not inaccessible to urban users and reserved for irrigators (Productivity Commission, 2006). These restrictions, introduced to prevent speculation and sharp price rises due to the wide price difference between rural and urban areas, should be abolished. Participation by intermediaries who are non-users of water could expand the markets and reduce transaction costs thanks to the emergence of products that respond better to users' requirements in terms of financing and risks (ACCC, 2006). Efforts could also be made to improve information and transparency by the systematic publication of the prices of transactions, which at present are not always identified.[12] The potential water price rises will increase irrigators' wealth without threatening the viability of their farms if the latter keep their entitlements. The price impact of purchases by urban areas could moreover be limited, as urban water needs are generally small compared to irrigation (Dwyer *et al.*, 2005). In any event, removing these barriers would have the virtue of making the scarcity of the resource better reflected in its price, which would be beneficial as regards its conservation and utilisation.

Extending the markets to urban areas would help big towns to limit the repeated water restrictions. For some of them, located inland, purchasing water access entitlements from irrigators is one of the few attractive ways of meeting the likely increase in their needs. A fall in per capita water consumption in the capitals of the states by some 20% by 2020-25, which would be in line with their targets, might not suffice to meet the demand of a growing population.[13] This additional supply of water would not be sufficient to meet the need to diversify sources of supply in order to cope with the uncertainty as regards future trends in rainfall. Even in this case, though, efficient markets would provide a valuable reference for assessing the cost efficiency of alternative options, such as the construction of desalination and recycling plants. The costs of these options vary considerably and there is no universal solution that can be applied everywhere and in all circumstances. As a general rule, the cost of additional resources rises sharply when water has to be transported over long distances (Figure 5.9).

Choosing between the alternative options would be made easier by devising shared and more rigorous methods for estimating their costs and through education and information aimed at assuaging people's doubts regarding non-traditional solutions such as recycling. The increased private sector involvement in water management envisaged by some states could also have beneficial effects, whether in the construction or the management of desalination and recycling plants. However, this means ending the state monopoly on water supplies in force in the majority of big cities, except possibly for the water distribution system. It is also important to authorise third-party access to water and drainage infrastructure, as New South Wales has already done, and to revise price-setting

Figure 5.9. **Direct costs of water supply and demand options**

Range of unit costs for four cities, dollars per kilolitre[1]



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1. The span of each bar reflects the range of unit costs derived from the published water plans for Sydney, Adelaide, Perth and Newcastle.

Source: Marsden Jacob Associates (2006), "Securing Australia's Urban Water Supplies: Opportunities and Impediments", a discussion paper prepared for the Department of the Prime Minister and Cabinet, November.

methods to attract private firms – as is the case in the electricity and telecommunications sectors. This could imply linking urban water prices to indicators of demand pressures, such as the dam levels. The chronic water restrictions in big towns are indicative of excess demand at present price levels, which would justify fresh investment to boost supply, even if this increases the price of the resource. To avoid potential equity problems, water tariffs could be set at a low level for a minimum personal allowance of water, corresponding to basic needs.

Market development would benefit from separating water access entitlements

To foster efficient allocation of water, ownership entitlements need to be clearly defined and tradeable. Despite the efforts to develop such a framework, the necessary conditions have not yet been established. Water entitlements remain complex and trading in them can have negative effects on third parties, meaning that part of the benefits or costs attaching to such trades may not be reflected in prices (Freebairn, 2004). Although they have been separated from property deeds, these entitlements usually consist of three attributes: *i)* an access entitlement to a certain quantity of water; *ii)* an entitlement to use the distribution infrastructure; and *iii)* a license to use the resources. Trades of water entitlements involve a change in the source of supply, its point of delivery and its use, which can modify these various characteristics and the impact of the associated externalities. For instance, a change in supply linked to an entitlement transaction can modify the reliability of the other downstream users' supply. Water trading can also affect third party users' access to distribution and storage systems, if water is traded between an area where the peak capacity is rarely reached and an area where it frequently is. Moreover, differences in utilisation or agronomic practices can influence water quality and result in costs (or benefits) for third-party users because of the induced changes in pollution or salinity. Such situations often explain the constraints affecting trades in permanent water entitlements in the majority of jurisdictions. It would appear that the best way to remove these constraints is to take account of the many characteristics of water entitlements, making a distinction between access, distribution and utilisation entitlements, while at the same time continuing with the reforms so as to better define these entitlements and improve the tools for factoring in their externalities.

Water access entitlements need to be better defined

The main challenge related to the sources of supply is to identify how reliable access entitlements are, *i.e.* how probable it is that the holder will obtain the volume of water corresponding to his property deeds. The risks associated with these entitlements, which have mainly to do with managing rainfall variability, differ between the regions, which curbs the growth of trading between jurisdictions. In Victoria for example, where water resources are managed prudently, entitlements are almost all allocated in full. In New South Wales, only some 10% of all entitlements enjoy that degree of security, the remaining 90% having a lesser degree of security. The other states have not ranked their entitlements by degree of security. Such differences in reliability are, moreover, not the only disparities between jurisdictions where water entitlements are concerned. In New South Wales, for example, the balance remaining on seasonal allocations can be carried forward, which is not possible in either Victoria or Southern Australia.

The authorities have decided to tag water entitlements to remove these trading obstacles.[14] In mid-2007, this system was put in place between New South Wales, South Australia and Victoria. Tagged water keeps the characteristics of its region of origin, the latter also taking responsibility for administering it. This is an innovation which should stimulate water trades between the states; it should be extended to the other jurisdictions, but it must not result in management differences becoming entrenched. Jurisdictions should be encouraged to adopt the best practices, for example, through financial incentives, particularly since the convergence of management rules would increase competitive neutrality and reduce transaction costs. The possibility of carrying unused water allocations forward from one season to the next ought, for example, to be extended to all the states. In this way, irrigators would be better able to manage the risks attaching to variable seasonal weather conditions. In the same way, the mechanisms for more easily converting low-security to high security water entitlements (or the reverse) could be expanded so as to foster the emergence of a product structure that meets market requirements. According to Freebairn and Quiggin (2006), management models which prioritise entitlements on the basis of their degree of security are more likely to meet these requirements than are those that do not prioritise, since they avoid certain temporary water trades and the associated transaction costs.[15]

There is a need to develop a market for water distribution access entitlements

The sale of water entitlements outside of an irrigation district can involve an additional cost for the remaining irrigators if the latter have to share the fixed infrastructure costs which often account for a large proportion of total delivery costs. It is this stranded asset problem which is the cause of the restrictions currently curbing sales of permanent water entitlements between districts. The NWI has raised the maximum authorised ceiling on these trades to 4% of total entitlements by district. Removal of the maximum authorised ceiling on trades is being explored in the current COAG reform process. Removing these constraints would have only a limited impact on the costs of the remaining irrigators, even in districts where the number of these irrigators falls by one-third in ten years (Heaney *et al.*, 2006).

The planned abolition of these restrictions will have only a limited positive effect, if it is accompanied by the introduction of exit fees which some districts have already put in place. These fees have the same impact as a tax on sales. They impede network rationalisation and should hence be forbidden.[16] Under-utilisation of infrastructure should in principle result in the value of stranded assets falling because of the reduced benefits they produce, and not in the adoption of a tax or any other approach avoiding this re-evaluation.[17] The price for accessing these services should reflect the cost of infrastructure that meets future requirements, and it is also important not to distort prices *via* government subsidies, which are currently provided by numerous jurisdictions. The development and implementation of uniform market and charging rules by the ACCC under the *Water Act* 2007 will be important in this regard.

Delinking water access and distribution network utilisation entitlements, which has already happened in some states, would reduce the drawbacks of the present management system. As is the case in other network industries, the distribution infrastructure constitutes a natural monopoly warranting separate management from other water use-related activities, as well as appropriate regulation avoiding inefficiencies and monopolies. Separation would avoid unnecessary purchases of entitlements to use the distribution system, in the event of measures that increased environmental flows, and would make it possible to award infrastructure access to those who value this service. Separate markets for infrastructure access entitlements would improve the management of the distribution network, in the event of capacity constraints, by rationing based on marginal cost differentials caused by delays in delivery, and would identify an infrastructure utilisation price that indicates capacity adjustment requirements.

More use could be made of market mechanisms where water utilisation entitlements are concerned

Changes in irrigation techniques can modify the quantity of water available for downstream users. In areas such as the MDB, where groundwater is shallow and saline, an excessive flow of water can also cause seepage from groundwater to rivers and increase salinity. These phenomena warrant specific management of water utilisation entitlements. As the effect of these externalities varies according to location and circumstances, however, the usefulness of utilisation entitlement markets seems limited compared to policies aimed directly at reducing pollution (Heaney *et al.*, 2006). That objective can be achieved by using regulations to prohibit water imports in particular areas or to impose specific conditions on irrigators. This frequently used approach is rigid, however, as it applies in the same way whatever the climate conditions, including during periods of severe drought when irrigation costs can fall short of benefits. Putting market mechanisms in place to target a maximum level of salinity for a given region, on the basis of tradable "saline emission" permits, could be a useful way of reducing the marginal costs of managing salinity, if a large enough market can be developed (Productivity Commission, 2006). As a general rule, it is important, however, to make sure that taking these externalities into account is not more costly than the benefits derived from doing so.

Conclusions and recommendations

Major obstacles have still to be removed before efficient water management is in place (Box 5.3). Important progress has been achieved recently to overcome these obstacles. The ongoing CSIRO study that will calculate homogeneous sustainable exploitation thresholds

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in the MDB will provide essential information to identify the extent of over-allocation of water entitlements, even though efforts to further develop the information system and understanding of water systems will need to continue. The plan Water for the Future and the recent COAG agreement on the MDB make significant headway to improve the co-ordination of MDB management and correct these persistent problems of over-allocation. This plan should however be implemented more rapidly. Progress also needs to be made in improving the functioning of permanent water entitlement markets, where there are still numerous obstacles. Their development could be encouraged by separating resource access entitlements from infrastructure utilisation rights and licences to exploit the resources obtained. They would also benefit from an increased private sector role and further pricing reforms – especially in the agricultural sector – so as to ensure full cost recovery. The water price in urban centres should also reflect its scarcity value and barriers to trade between urban and rural areas should be lifted. These reforms must be pursued jointly: solving the problem of resource over-exploitation would appear vital as a way of enhancing the security of water ownership documents and encouraging market development; deeper markets are also needed to help solve the problems of over-exploitation in an efficient manner.

Box 5.3. **Recommendations for improving water management**

Clearly identify and correct the persistent over-allocation of water entitlements

- Set up a better-harmonised information system, as is required by the plan Water for the Future. Pursue research into the interaction between surface and groundwater and evapotranspiration, which is necessary to ensure integrated water management; and continue work aimed at defining the concept of sustainable exploitation on a homogeneous basis across jurisdictions by improving understanding of the links between environmental conditions and water availability.
- Strengthen co-ordination mechanisms between jurisdictions with respect to catchment areas shared between several states, as provided for in the Water for the Future plan. Accelerate the implementation of this plan.
- From a short-term viewpoint, administer water resources in a prudent manner, particularly in the Murray-Darling Basin, by taking into account all water abstraction sources, including those related to plantation forestry.
- To correct over-allocation of water entitlements, opt for buy-backs of these rights rather than infrastructure-modernising investment. Give environmental managers clear objectives and adequate resources and powers to intervene in the markets. Consider immediate buy-backs of water entitlements.

Strengthen market mechanisms and trading in permanent water entitlements

- Remove the obstacles to access faced by certain categories of water users and to transactions between certain areas. Lift the quantitative restrictions on trades in permanent water entitlements. Improve market transparency through the publication of transaction prices.
- Divide water entitlements into resource access entitlements, distribution system utilisation entitlements and licenses to use the resources acquired.

Box 5.3. **Recommendations for improving water management** *(cont.)*

- Clarify the definition of resource access entitlements. Extend the water entitlement tagging procedures established between New South Wales and Victoria to the other jurisdictions. Encourage the states to adopt the best management practices, possibly through financial incentives. Extend the possibilities of carrying unused water allocations forward from one season to the next to all jurisdictions. Enable easy conversion of low-security ownership entitlements to high-security entitlements (and *vice versa*) in all states.
- Abolish the exit fees limiting trading between districts. Lift barriers to trade between rural and urban areas.
- Consider putting an end to the public monopolies of urban water management. Authorise third-party, including private, access to water and drainage infrastructure. Consider introducing a pricing system for distribution and drainage based more closely on the approach used in the electricity and telecommunications sectors, under the supervision of the ACCC.
- Encourage the use of market mechanisms to internalise pollution and salinity costs.
- Encourage the introduction of a transparent and homogeneous method for calculating the marginal costs of additional non-traditional resources deriving from desalination and recycling.

Ensure that prices reflect the scarcity of water

- Continue the reforms of water charging, especially in agriculture, to ensure full cost recovery. Incorporate management and planning costs more systematically in water pricing.
- Avoid providing subsidies to infrastructure projects. Improve the transparency of government subsidies disbursed with respect to the universal service obligation.
- Link urban water pricing to demand pressures, while keeping prices low for a minimum allowance of water corresponding to essential needs. Tenants should pay their water bills directly. Replace deductions from water bills for certain socioeconomic groups, such as pensioners, by transfers.

Notes

1. Grafton and Ward (2007) estimate the cost of water restrictions per household for Sydney in 2005 at about AUD 150 above the cost of achieving the same level of water use with higher water charges. Approximately 80% of Australia's households were subject to water restrictions.
2. The aim of the *Plantations 2020 Vision* programme, launched in 1997, is to treble the area of commercial tree crops between 1994 and 2020 to 3 million hectares. In 2003, that area had already risen to 1.7 million hectares (van Dijk *et al.*, 2006).
3. The virtual water content of a commodity is the volume of water used to produce it. Australia's very positive balance on virtual water trade is the result of the scale of agricultural exports. By way of indication, 15 500 litres of water are needed to produce 1 kilogram (kg) of beef, 3 400 for 1 kg of rice, 2 700 for a cotton T-shirt, 1 300 for 1 kg of corn and 1 000 for 1 litre of milk (Chapagain and Hoekstra, 2004).
4. The allocation system of water resources among users varies across states. In Victoria or New South Wales, the system sets a ranking between high and low-security entitlements. During drought, water is provided in priority to high-security entitlement holders. In other states, such as South Australia, there is no distinction between water access entitlements.
5. Evans (2004) calculated for example that, on average, every 100 ML of groundwater extracted in the MDB reduced surface flows by 64 ML.

6. Morris (2008) mentions for instance the case of a water trade for AUD 1 100 per ML, but approved after a delay of more than two months during which the price of water had dropped to AUD 300.
7. The regulators have powers which vary across the states. They set water prices directly in New South Wales and Victoria, for example, whereas they have only an advisory role in Western Australia, South Australia and the Northern Territory. As a rule, these regulators supervise urban water companies, which are mostly under government control, much more closely than they do rural companies which are in many cases private co-operatives (NWI Steering Group, 2007).
8. According to the NWI, full cost recovery means prices falling within a band the lower limit of which ensures water companies' financial viability, while the upper limit enables them also to derive a return on capital, without this attaining a monopoly rent level. In rural areas, water prices have in many cases still not reached that lower level in order not to adjust prices too abruptly and, in some cases, a gap will probably remain.
9. In Queensland, the government contributes 40% of the financing of infrastructure costs, while in Victoria the authorities periodically provide subsidies for the development of projects that benefit consumers (Marsden Jacob, 2006).
10. A 100% connection between ground and surface water implies that, ultimately, the quantity of water extracted from ground water reduces the available quantity of surface water by the same amount.
11. Water access entitlements are assets affording the opportunity to obtain water allocations on a permanent basis, the latter constituting the returns procured by these entitlements. It is therefore possible to calculate an implicit discount rate between the market prices of these two types of transaction. According to Quiggin (2006), this implicit discount rate is close to 20%. The limited scale of permanent water transactions could, however, affect these price signals.
12. Collecting price statistics on water trading is difficult as the latter does not always involve a specific monetary transaction when water entitlements are sold in conjunction with a piece of land. Nor are the administrative costs attaching to such sales always clearly identified (ABS, 2006a).
13. According to the central and optimistic scenarios contained in the most recent demographic projections, the population of the states' capitals could increase by 20% to 25% by 2020 (ABS, 2006b).
14. This approach seemed preferable to introducing a system of administered "exchange rates" (taking into account the differences of reliability of water entitlements between states), which would have been excessively complex.
15. Systems which establish a ranking between high and low-security entitlements, as in New South Wales, require fewer temporary water transactions than those that distribute ownership entitlements without attaching any such priority, as in South Australia. In this case, when there are droughts the decline in all users' allocations, including those whose water demand is inelastic, forces the latter to buy temporary allocations (and the reverse in wet years). In systems with an entitlement priority, users whose demand is inelastic and who have high-security entitlements will have less need to acquire water because they will be less affected. The transaction costs are high, as they include not only the costs of negotiating and registering sales, but also the costs of managing the risks attaching to the effective delivery of the allocations and, in some cases, obtaining the water utilisation permit (Quiggin and Freebairn, 2006).
16. Similar inefficiencies would affect water tagging which did not involve separating distribution and access entitlements, because buyers would in that case have to bear the management costs of a system that they were not using (Roper, Sayers and Smith, 2006).
17. Some states allow delivery infrastructure managers to calculate their fixed charges on the basis of annuities allowing the replacement of existing assets.

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ANNEX 5.A1

Definition of some technical terms

Aquifer	A geologic formation which is capable of holding water and through which water can percolate. Aquifers are capable of yielding quantities of groundwater for economic activities.
Catchment area	The area of land determined by topographic features, within which rainfall will contribute to run-off at a particular point.
Environmental flow	Water delivered (released) for the purpose of the environment.
Evapotranspiration	Process of moisture loss to the atmosphere from plants by transpiration and evaporation.
Groundwater	Water occurring below the ground's surface.
Runoff	The part of precipitation in a given area and period of time that appears as stream flow.
Surface water	Water flowing or held in streams, rivers and other wetlands in the landscape.
Water abstraction, diversion, extraction	Action of directly extracting water from the environment for use (including rivers, lakes, groundwater and other bodies).
Water access entitlement	A perpetual or ongoing entitlement to exclusive access to a share of water from a specified consumptive pool as defined in the relevant water plan.
Water allocation	The specific volume of water allocated to water access entitlements in a given season.
Water license/water right	Synonym of water access entitlement.
Water trading	Transactions involving water access entitlements or water allocations assigned to water access entitlements. Temporary water trading refers to a transaction that affects only the seasonal water allocation associated with a water access entitlement.

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Glossary

ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
ADSL2+	Asymmetric digital subscriber line 2+ (double capacity ADSL)
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AIRC	Australian Industrial Relations Commission
AQF	Australian qualifications framework
AUD	Australian dollar
AWA	Australian workplace agreement
CCB	Child care benefit
CCTR	Child care tax rebate
COAG	Council of Australian Governments
CPI	Consumer price index
CPRS	Carbon pollution reduction scheme
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DSL	Digital subscriber line
DSP	DSP Disability support pension
ECEC	Early childhood education and care
FTTN	Fibre to the node/neighbourhood
G7	Group of 7 countries (Canada, France, Germany, Italy, Japan, United Kingdom and United States)
GDP	Gross domestic product
GHG	Greenhouse gas
GL	Gigalitre
HECS	Higher education contribution scheme
HILDA	Household income and labour dynamics in Australia
IGR	Intergenerational Report
kg	Kilogram
LITO	Low income tax offset
LSAC	Longitudinal survey of Australian children
MDB	Murray-Darling Basin
METR	Marginal effective tax rate
ML	Megalitre
NCP	National competition policy
NRA	National Reform Agenda
NWC	National Water Commission
NWI	National water initiative
PISA	Programme for International Student Assessment

PPP	Private/public partnership
RBA	Reserve Bank of Australia
SME	Small and medium-sized enterprise
TAFE	Technical and further education
TPA	Trade Practices Act
VET	VET Vocational education and training
US	United States
USD	United States dollar

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