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BETTER POLICIES FOR BETTER LIVES

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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 10 October 2012. 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 24 October 2012.

The Secretariat's draft report was prepared for the Committee by Claude Giorno, Vassiliki Koutsogeorgopoulou, with a contribution from Omar Barbiero under the supervision of Piritta Sorsa. Research assistance was provided by Isabelle Duong.

The previous Survey of Australia *was issued in November 2010.*

BASIC STATISTICS OF AUSTRALIA, 2011

(The numbers in parentheses refer to the OECD average)

LAND, PEOPLE AND ELECTORAL CYCLE

Population (1 000 000):	22.5		Population density per km²	2.9	(34.3)
Under 15 (%)	19.0	(18.4)	Life expectancy (years, 2010):	81.8	(79.7)
Over 65 (%)	13.2	(14.9)	Males	79.5	(76.9)
Foreign-born (%, 2010)	27.0		Females	84.0	(82.5)
Latest 5-year average growth (%)	1.7	(0.5)	Last general election:	August	2010

ECONOMY

GDP, current prices (billion USD)	1 487.6		Value added shares (%, 2010):		
GDP, current prices (billion, local currency)	1 441.0		Primary	2.8	(2.6)
Latest 5-year average real growth (%)	2.6	(0.8)	Industry incl. construction	27.8	(27.8)
GDP per capita, PPP (thousand USD)	41.1	(35.4)	Services	69.4	(69.5)

GENERAL GOVERNMENT

Expenditure (% of GDP)	35.3	(44.9)	Gross financial debt (% of GDP)	26.7	(98.9)
Revenue (% of GDP)	31.3	(36.8)	Net financial debt (% of GDP)	5.3	(60.2)

EXTERNAL ACCOUNTS

Exchange rate (AUD per USD)	0.969		Main exports (% of total merchandise exports):	
PPP exchange rate (USA = 1)	1.560		Crude materials, inedible, except fuels	36.1
Exports of goods and services (% of GDP)	21.7	(52.4)	Mineral fuels, lubricants and related materials	28.0
Imports of goods and services (% of GDP)	20.5	(49.3)	Food and live animals	9.2
Current account balance (% of GDP)	-2.3	(-0.6)	Main imports (% of total merchandise imports):	
Net international investment position (% of GDP, 2010)	-57.8		Machinery and transport equipment	37.0
Reserve assets (% of GDP)	3.2		Mineral fuels, lubricants and related materials	16.9
			Manufactured goods	10.9

LABOUR MARKET, SKILLS AND INNOVATION

Employment rate (%) for 15-64 year olds:	72.7	(64.8)	Unemployment rate (%):	5.1	(7.9)
Males	78.7	(73.0)	Youth (%)	11.3	(16.2)
Females	66.7	(56.8)	Long-term unemployed (%)	1.0	(2.6)
Average worked hours per year	1 692.8	(1 776.0)	Tertiary educational attainment		
Gross domestic expenditure on R&D (% of GDP, 2008)	2.2	(2.4)	25-64 year-olds (%, 2010)	37.6	(30.7)

ENVIRONMENT

Total primary energy supply per capita (toe):	5.3	(4.3)	CO_2 emissions from fuel combustion per capita (tonnes, 2009)	18.0	(9.8)
Renewables (%)	6.1	(8.2)	Water abstractions per capita (dam^3, 2009)	0.6	
Fine particulate matter concentration (urban, PM10, μ/m^3, 2008)	14.3	(22.0)			

SOCIETY

Income inequality (Gini coefficient, %)	33.6	(31.4)	Education outcomes (PISA score, 2009):		
Relative poverty rate	21.7	(17.7)	Reading	515	(493)
Public and private spending (% of GDP):			Mathematics	514	(496)
Health care (2008)	8.7	(8.8)	Science	527	(501)
Pensions (2007)	6.8	(8.6)	Share of women in parliament (%, July 2012)	29.2	(24.4)
Education (2008)	3.6	(3.7)	Net official development assistance (% of GNI)	0.4	(0.4)

Better Life Index: *www.oecdbetterlifeindex.org/*

Note: An unweighted average of latest available data is used for the OECD average, calculated when data for at least 29 countries are available.

Source: OECD.STAT (http://stats.oecd.org); OECD Economic Outlook database.

Executive summary

The main challenge for policy is managing a sustained recovery by promoting important structural changes. *Australia has continued to weather the global economic crisis well reflecting sound macroeconomic policies and strong demand from China. Growth temporarily slowed in 2010 and 2011 as stimulus was withdrawn and households became more cautious. Non-mining tradable sectors have struggled with the strong exchange rate driven by the mining boom. However, fundamentals remain solid with the unemployment rate close to its structural rate and inflation and public debt low. Growth strengthened in 2012, and the outlook is positive, even though there are mainly negative risks stemming from the external environment, to which Australia is however less vulnerable than many other OECD countries.*

The current monetary and fiscal policy mix is appropriate to sustain recovery, and Australia is in a good position to respond to risks. *Monetary easing in the context of low inflation is supporting activity while the budget is being rapidly returned to surplus to restore fiscal space. In case of a sharper-than-expected cyclical weakening, the central bank should loosen further and the fiscal automatic stabilisers should be allowed to work, even if this postpones the return to budgetary surplus. While monetary policy should be the first line of defence, if a new, full-scale global crisis of a similar magnitude as in 2008-09 breaks out, fiscal expansion to support activity would be warranted.*

Stronger medium-term fiscal institutions would be better able to cope with volatility in natural resource revenues. *The medium-term objective of reducing net debt is welcome. The authorities should consider creating a stabilisation fund to accumulate mining-related revenues when they are unusually high to insulate budget and spending, thereby reducing the risk of pro-cyclical fiscal policy.*

The structural changes stemming from the mining boom can be facilitated by maintaining flexible markets and introducing tax reforms. *Australia should promote smooth reallocation of resources by taking advantage of new opportunities prompted by growth in Asia, and should minimise adjustment costs by preserving a decentralised and flexible labour market. In particular, public subsidies should not be used to retain resources in sectors where Australia's comparative advantage is declining. Tax reforms, including a lower corporate tax rate, a broader resource rent tax and more efficient state taxes would facilitate ongoing structural adjustments. At the same time, a fair sharing of the burden and gains of adjustment would facilitate acceptance of change.*

Continued good performance will require lifting productivity growth. *Part of the slowdown in multifactor productivity growth is temporary, as key resource or infrastructure projects have not yet come on stream and the structurally weaker industries gradually adjust to the new conditions. Nevertheless, sustaining broad-based increases in living standards calls for policies to improve vocational and higher education outcomes to meet future skill needs, enhanced innovation performance through closer collaboration of key players, resolving infrastructure bottlenecks through*

better planning and more efficient financing and use of infrastructure, as well as stronger competition.

Recent progress to promote more sustainable growth based on efficient environmental policy is welcome and should continue. *The introduction of a carbon price, together with accompanying measures, should encourage investment in clean energy technologies, and help enhance competitiveness in a carbon-constrained world. More efficient allocation in the use of water resources may be achieved by better water pricing and suppression of barriers to water trade through swift implementation of the National Water Initiative.*

Box 1. **Key policy recommendations**

Macroeconomic policy

- The current shift in the policy mix is appropriate. If the cycle weakens, ease monetary policy and let the automatic stabilisers work. While monetary policy should be the first line of defence, if a full-scale global crisis of similar magnitude as in 2008-09 erupts, be ready to adopt prompt fiscal expansion.
- Consider creating a stabilisation fund to better insulate public spending from revenue changes caused by volatile terms of trade.

Tax reform

- Pursue business tax reforms including reducing the corporate tax rate and a possible extension of the loss carry back scheme to unincorporated firms.
- In pursuing tax reform promote the use of less-distorting untapped fiscal resources, including cuts in subsidies to irrigation infrastructure and the automotive sector. Review tax credit for business for excise taxes on fossil fuels in sectors not covered by the new carbon tax.
- Broaden the mineral resource rent tax (MRRT) coverage. Consider replacing state royalties by a mining rent tax modelled on the federal approach, allowing states to set their tax rates.
- Rationalise other state taxes: reduce or remove conveyance duties and the progressivity of the state land tax; broaden the state land tax base by eliminating exemptions for owner-occupiers; cut subsidies to first-home buyers; broaden the base of the goods and services tax (GST) and consider increasing its relatively low rate.

Labour market reform

- Preserve the existing framework of direct and decentralised bargaining as it has yielded good results so far. Avoid substantive changes to the framework to minimise the costs of adjusting to frequent regulatory changes.
- Consider minor changes to the industrial relations framework including allowing employers commencing a genuinely new business to negotiate collective agreements both directly with potential future employees and/or unions.
- Investigate sector-specific working conditions affecting the flexibility and equity issues negotiated between employers and employees to help move the efficiency/fairness debate forward and focus it on practical questions that are potentially easier to solve through negotiations and compromise.

Box 1. **Key policy recommendations** *(cont.)*

- To improve the effectiveness of employment services, link funding of employment services more closely to job seekers, possibly by introducing a voucher system. Consider linking the remuneration of service providers more tightly to their outcomes measured by the "Star Rating" performance evaluation system.

Enhancing productivity for sustained growth

- Implement competency-based apprenticeships in line with the skills strategy. Proceed with efforts towards developing strong quality assurance mechanisms for training.
- Ensure improved information flows for prospective tertiary students on course quality and outcomes. Monitor completion rates and learning outcomes in higher education following the uncapping of places in universities. The funding arrangements in the new system should ensure an effective supply of student places.
- Programmes to support collaboration and networking between universities and businesses should be simple and flexible to reinforce their impact on innovation.
- Improve infrastructure outcomes by reducing the complexity of governance and provision of infrastructure investment and ensuring a more effective planning. Remove barriers to private participation in financing infrastructure investments. Continue efforts to increase the effectiveness of public-private partnership processes and improve approaches to managing risks of such projects.
- Broaden the use of road user charges. Introduce location-specific and time-varying congestion charges for road infrastructure in large cities. Move towards more cost reflective prices in the water sector. Install advanced metering infrastructure ("smart meters") for electricity to promote energy-efficient consumption choice.

Assessment and recommendations

With 21 years of uninterrupted growth Australia stands out among OECD countries. This performance has been sustained by sound policies and, more recently, booming demand for commodities from Asia. However, temporary factors, including the 2008-09 economic and financial crisis and increased caution among households from uncertainties in the international environment, have slowed growth. At the same time, Australia is adapting to structural changes prompted by the commodity boom, a strong exchange rate and terms of trade, which, while having moderated recently, remain high by historical standards. The main challenge for policy is therefore to manage a sustained recovery, while promoting important structural changes in the economy.

The medium-term outlook continues to be buoyed by proximity to a dynamic China, which buys large quantities of Australian resources, particularly abundant iron ore and coal. China also offers many new market opportunities for various sectors. Maintaining flexible markets, while ensuring that the burden and gains of adjustment are fairly distributed, would facilitate the implied structural changes. As a supply response in world coal and iron ore may permanently reverse some of the terms of trade gains in the future, it is crucial to ensure that conditions for a broader-based sustainable growth are reinforced. In this context, reversing the sharp downturn in productivity gains since the end of the 1990s is important.

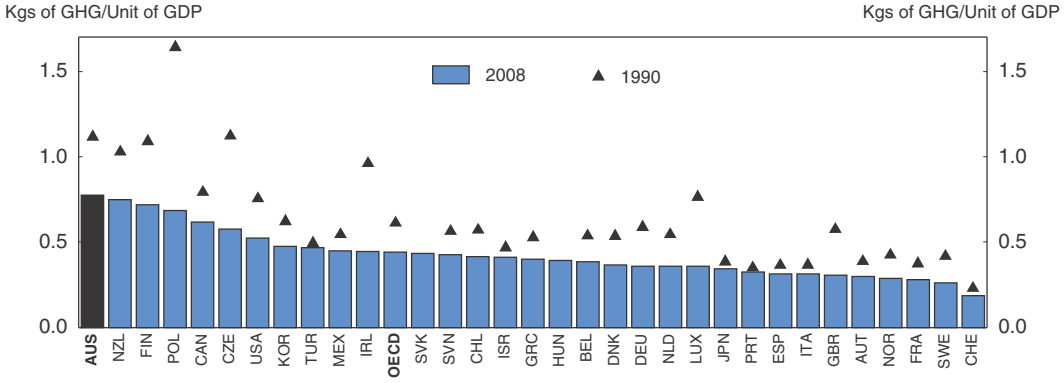
Recent efforts to improve environmental outcomes are welcome and should continue

One key to sustained growth in Australia is efficient environmental policy, especially in the areas of greenhouse gas emissions (GHG) and water management. Although Australia's GHG emissions account for only 1.5% of global emissions, their intensity per unit of GDP is higher than in other OECD countries due to widespread coal use, energy-intensive mining and heavy road transport (Figure 1).

To de-link emissions from economic growth, the government adopted in November 2011 the Clean Energy Legislative Package marking a decisive step forward in Australia's policy on climate change. The authorities intend to bring GHG emissions to 80% below their 2000 level by 2050, and have unilaterally committed to a 5% reduction by 2020. This latter commitment, which means cutting these emissions by 23% compared to a business-as-usual scenario (Figure 2), complements the previously approved goal of generating 20% of electricity supply from renewable sources by 2020. The Clean Energy Package is based on the following principles:

- Introduce a fixed price for carbon, for three years, set initially at AUD 23 per tonne, followed in financial year (FY) 2015/16 by a flexible price, based on an emissions trading system linked to international markets. Use the resulting revenues to compensate

Figure 1. **GHG emission**[1, 2]

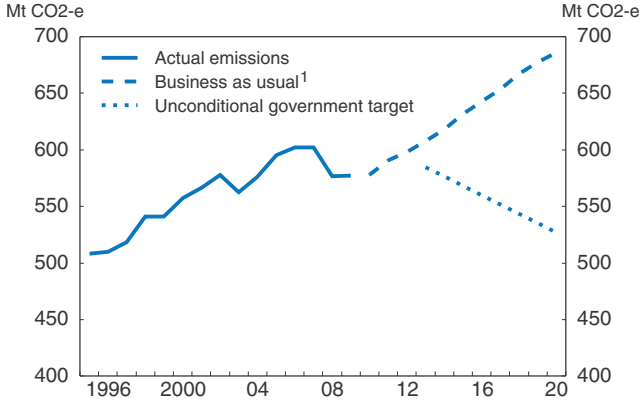


1. Data include CO_2 from fuel combustion, fugitive, industrial processes and other; CH_4 from energy, agriculture, waste and other; N_2O from energy, agriculture, industrial processes and other; HFC, PFC and SF_6 from industrial processes.
2. Gross direct emissions including emissions or removals from land-use change and forestry (LULUCF).

Source: OECD, *Demography and Population Database* and International Energy Agency (IEA), *Energy Database*.

StatLink http://dx.doi.org/10.1787/888932736718

Figure 2. **Australia's emissions trends**



1. Emissions without carbon pricing or CFI (Carbon Farming Initiative) abatement.

Source: Australian Department of Climate Change and Energy Efficiency, *Australia's emissions projections 2010* and Treasury estimates from the report by SGLP (2011), *Strong Growth, Low Pollution, Modelling a Carbon Price*, Commonwealth of Australia.

StatLink http://dx.doi.org/10.1787/888932736737

households for increased energy costs by reducing taxes and increasing pensions on a permanent basis, and to support energy-intensive trade-exposed enterprises through temporary allocations of free emission permits.

- Promote innovation, commercialisation and investment for renewable energies and energy efficiency, with financial support from the Clean Energy Finance Corporation and the Australian Renewable Energy Agency, funded respectively with budgets of AUD 10 billion and AUD 3.2 billion.

The use of these market mechanisms to reduce GHG emissions, together with accompanying measures, should drive structural change in the economy, moving resources towards and encouraging investment in clean energy and less emission-intensive technologies. Moreover, accompanying measures should limit the

macroeconomic consequences of this reform. Apart from an estimated one-off price hike of ¾ per cent in FY 2012/13, the impact on the growth of national income per capita is projected to be around 0.1 percentage point per year to 2050 (SGLP, 2011). The adverse impact on firm competitiveness of the relatively high carbon price retained by Australia compared with the international market carbon prices, currently at AUD 10 per tonne, will be moderated by significant assistance measures initially granted in the form of free emission permits. Moreover, the recent decision to remove the previously announced carbon price floor, in the wake of the August 2012 agreement linking Australian and European emission trading systems as of July 2015, should limit future risks for competitiveness should the international carbon price remain permanently depressed. A lower-than-planned carbon price will have a budgetary cost unless household subsidies are reduced. However, their structure will make them difficult to unwind. According to some estimates, this fiscal cost would be relatively limited since a carbon price at AUD 15 in FY 2015/16 instead of the expected AUD 29, would reduce the budget balance by only around AUD 3 billion (less than 0.2% of GDP) (Priest, 2012; Bartos, 2012).

Better water pricing is also needed to improve economic efficiency and environmental outcomes. The water sector still faces obstacles to efficient allocation and use of water resources. In the rural sector, the over-allocation of ownership rights to use water resources leads to undercharging for irrigation water and hence to over-exploitation and poor investment decisions. To reduce over-allocation, water pricing should ensure full cost recovery, including environmental costs, and barriers to water trade should be removed. The National Water Initiative (NWI), Australia's blueprint for water reform, aims to price water efficiently through trading of water entitlements and removing barriers to trade. Best practice water pricing – including a user-pays principle – is a key element of the NWI. However, implementation has been slow, although it varies across jurisdictions. Government subsidies to irrigation infrastructure should be removed, even if they are transitory, as they confound efforts for an efficient pricing of water. Action taken by the government to address the problem of over-allocation through direct market purchases of privately held water entitlements is welcome.

Reform is also urgently needed in urban water (PC, 2011). Water security at the lowest cost would require the exploitation of all supply-side options, including rural-urban trade and water recycling, currently restricted by state regulations (OECD, 2008; IA, 2010). Rapid progress in implementing the NWI is essential in this regard. The extended drought has also made a case for more flexible pricing schemes, which are responsive to changes in water availability. A scarcity-based pricing scheme can be successful as long as it is accompanied by improvements in metering and a higher frequency billing to ensure that price signals are effectively transmitted to water users (PC, 2008).

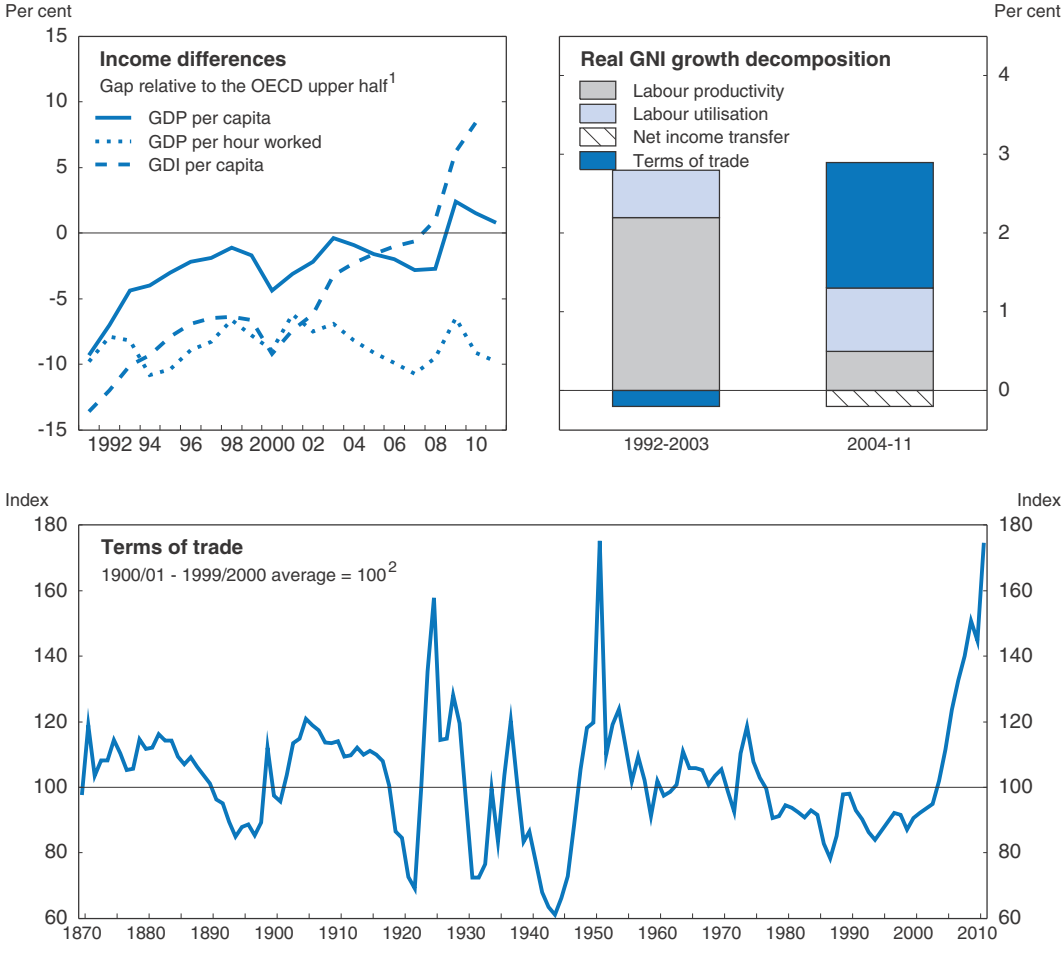
Most importantly, however, urban water prices are distorted by the focus on social objectives, which implies that water customers do not face the full cost of water services. Social objectives would be better pursued through the tax-transfer system. Additional concerns arise about the potential distortive impact on urban water prices from state subsidies which are likely to affect infrastructure decisions, even if the support is of short term and intermittent (OECD, 2010a; NWC, 2011). Ensuring that tariffs reflect the cost of providing water would also reduce the need for state subsidies to water companies.

Macroeconomic challenges and policy requirements

The mining boom has boosted growth since the early 2000s

Per capita income grew strongly over the past decade despite weakening of productivity growth and, by 2010, was 10% above the average level of the top half OECD countries (Figure 3) and only 5% below the US level. Growth has mainly been driven by the commodity price boom and a related rise in investment in new mining ventures. Indeed, since 2003 over half of the per-capita income growth has come from improvements in the terms of trade. The buoyancy also reflects a higher employment rate, promoted by successive structural labour market reforms over the past decades. Lastly, the exemplary handling of the global economic and financial crisis helped avoid a recession in 2008-09. Thanks to prudent macroeconomic policies adopted in the years before the crisis, when the crunch hit, activity was supported by a prompt monetary policy response by the Reserve Bank of Australia (RBA) and a large, timely and targeted fiscal stimulus by the government.

Figure 3. **Key macrodevelopments**



1. Percentage gap with respect to the simple average of the highest 17 OECD countries.
2. Calendar year prior to 1900, financial year thereafter.

Source: RBA; OECD, *OECD Economic Outlook Database*; OECD (2012), *Economic Policy Reforms: Going for Growth*, OECD Publishing, Paris.

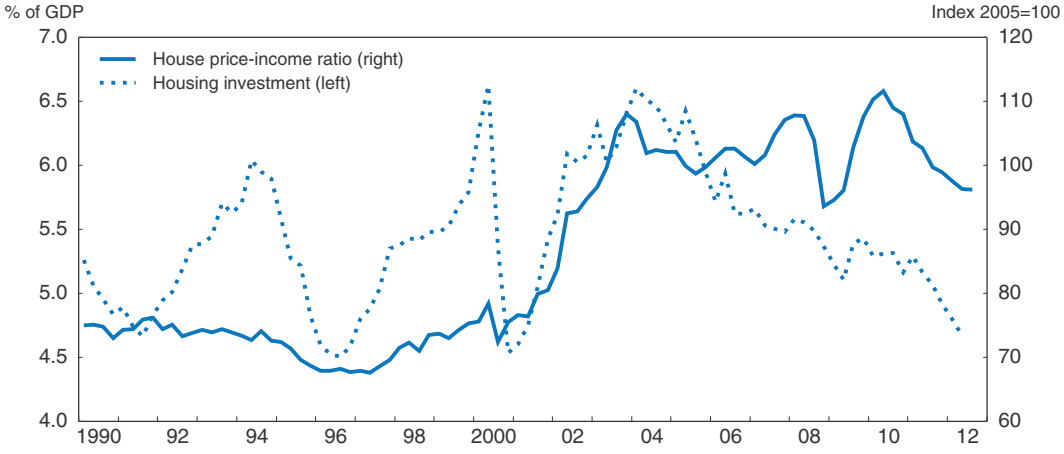
StatLink http://dx.doi.org/10.1787/888932736756

The economy has been temporarily weakened since the global economic crisis

Annual GDP growth, at 2¼ per cent on average in 2010 and 2011, was less vigorous than the OECD average, although it picked up in early 2012. Australia's relatively modest expansion reflects partly the fact that it had a relatively mild downturn during the global financial crisis (with no output decline) and partly a corresponding progressive withdrawal of the stimulus measures introduced in late 2008 and 2009, including a gradual increase of interest rates between October 2009 and end-2011. Output was also damped by major natural disasters that struck Queensland in early 2011 and disrupted coal exports. As in many other OECD countries, households, whose confidence has weakened, have become more prudent because of relatively high debt levels, declines in asset values and rising uncertainty (Stevens, 2011). Household savings rates have risen sharply since 2007, while demand for loans has slowed, penalising the retail sector.

The extended house price boom, which continued through the global crisis, is now cooling (Figure 4). Real house prices fell by more than 8% between their peak of mid-2010 and mid-2012, and have recently shown some signs of stabilisation thanks to monetary easing. In the absence of a significant economic downturn, house price adjustment is likely to remain orderly. Although the housing sector as a whole is still quite indebted, households appear well placed to meet their debt obligations, as shown by the low rate of non-performing housing loans, which has remained below 1%. Indeed, nearly 50% of owner-occupiers are repaying their mortgages ahead of schedule. This reduced appetite for housing debt seems motivated by a desire of households to bolster their wealth given the weakness in some asset markets. Growth in household income has exceeded the pace of increase in debt in recent years, which has also reinforced households' debt-servicing capacity. The risk of a house price bust is also limited by the fact that mortgage lenders have been refraining from easing lending standards (Ellis, 2012). In Australia, most mortgage lending is done by firms that are prudentially regulated by a single regulator.

Figure 4. **Housing investment and house price-income ratio**



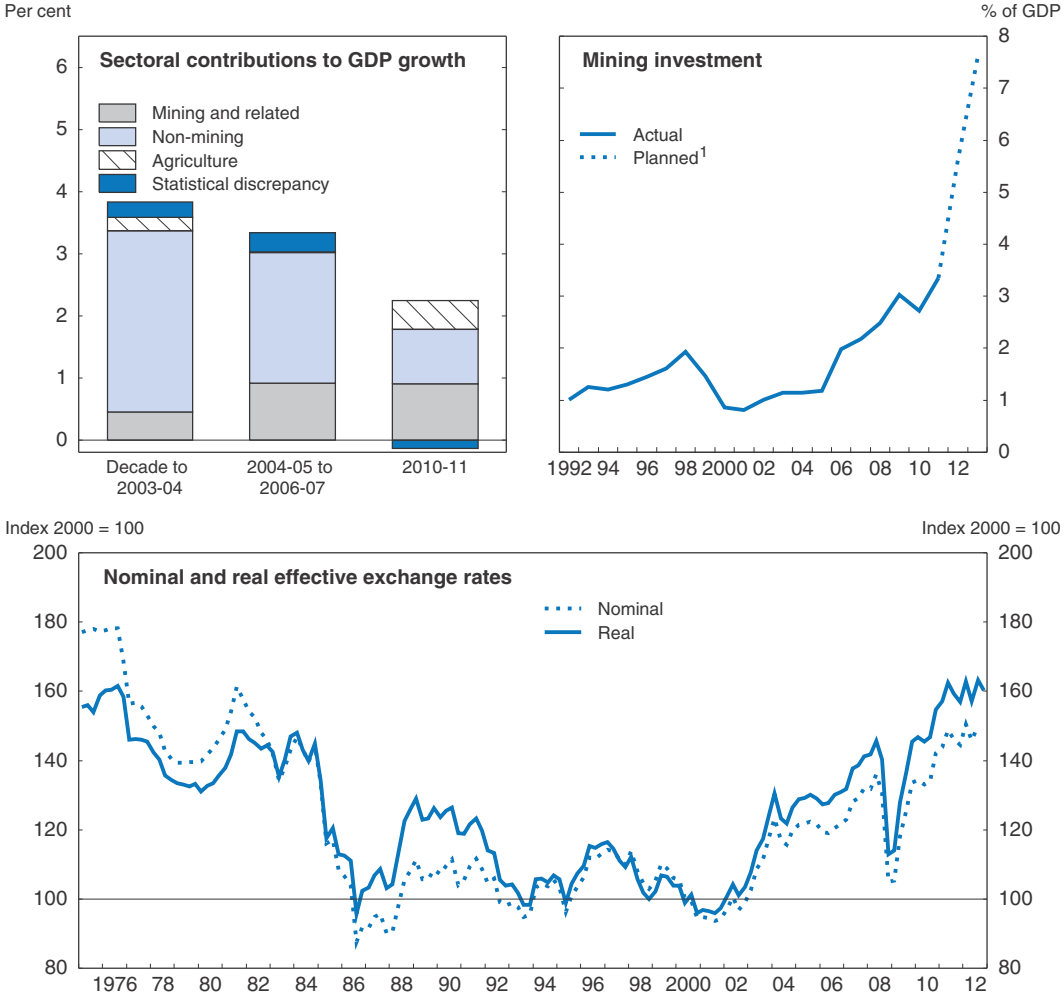
Source: ABS, Cat. No. 6416.0 and OECD, *OECD Economic Outlook Database*.

StatLink http://dx.doi.org/10.1787/888932736775

Since the mid-2000s growth has been built on rising mining revenues and capital expenditures, which had direct positive effects on the rest of the economy through, for example, purchases of local goods and services (Gruen, 2011; Connolly and Orsmond, 2011).

In 2010 and 2011, over half of non-agricultural GDP growth came from the expansion of the mining industry and related sectors, which together account for less than 20% of total GDP (Figure 5). The booming mining sector has also had wider, indirect effects on demand. Real household income is boosted by cheaper imports because of the stronger exchange rate, and job creation was solid between 2003 and 2010 in services and mining, despite the crisis.

Figure 5. **Growth has been uneven across sectors**



1. Survey-based expected capital expenditure corrected for the average realisation ratio.

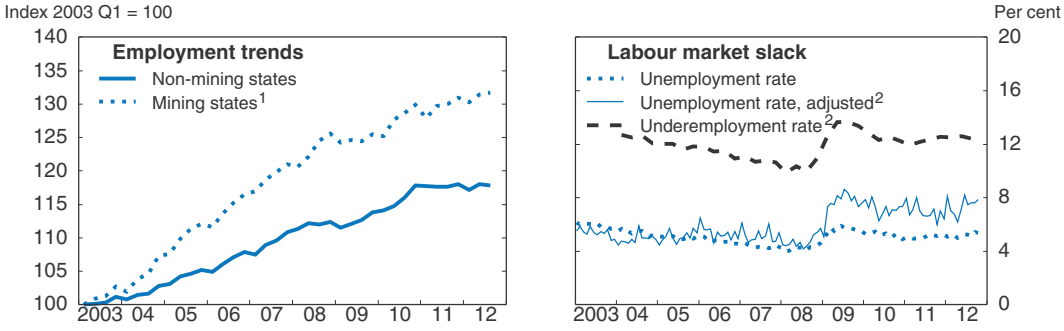
Source: ABS, *Cat.* Nos. 5204.0 and 5625.0; OECD, *OECD Economic Outlook Database*.

StatLink http://dx.doi.org/10.1787/888932736794

This buoyant demand has raised the real effective exchange rate, put pressure on other tradable sectors and changed the composition of demand. Higher mining investment has not yet been fully reflected in an expansion of export capacity. A growing number of firms, particularly in manufacturing, tourism and education, are facing problems of international competitiveness. The stronger exchange rate together with capital-goods investment have increased imports and thus widened the current account deficit.

The slowdown in job creation, which has been more visible in the non-mining states since 2012, largely reflects the weakening of the service sector (Figure 6). Although

Figure 6. **Labour market indicators**



1. Western Australia, Queensland and Northern Territory.
2. The adjusted unemployment rate takes into account the change in the number of hours worked. It is computed assuming that the people in the labour force would be willing to work the same numbers of monthly hours as, on average between January 2001 and October 2008. Underemployment rate includes employed persons aged 15 and over who want, and are available for, more hours of work than they currently have.

Source: ABS, Cat. No. 6202.0.

StatLink http://dx.doi.org/10.1787/888932736813

unemployment has remained stable near its structural level of 5% up to mid-2012, some slack has persisted in the labour market, as shown by the high underemployment rate. Hours worked, which had decreased during the crisis, have only slowly recovered, as firms have aimed to retain labour and forestall potential skill shortages, which have occurred in the past. Overall, the output gap is estimated to be slightly negative, at around 2%, although there is considerable uncertainty in such estimates. Against this background, wages rose only moderately and inflation remained contained because also of falling import prices. Despite the introduction of carbon price in July 2012, headline and core inflation increased respectively by 2 and 2½ per cent in the third quarter of 2012.

Australia should continue to benefit from the mining boom but faces strong sectoral disparities

Growth, which strengthened in the first half of 2012, is expected to decelerate from 3¾ per cent in 2012 to 3-3¼ per cent in 2013 and 2014, *i.e.* slightly below the estimated potential (Table 1). The tightening of fiscal policy should dampen the domestic demand especially in FY 2012/13. Activity will remain tepid in many sectors facing pressures to adjust to the strong dollar. Moreover, the boost to demand provided by the resources investment boom is expected to fade in 2014 because of the fall in commodity prices, which reached almost 20% through the year to the third quarter of 2012, while the production costs have increased relatively rapidly in the mining sector. These forces will be partly offset by the more accommodative monetary stance adopted by the RBA and easier financial conditions, reflected by the recent upturn in housing prices, the rise in share markets and lower long-term interest rates. Resource investments will also remain very robust in 2013 with the share of mining investment in GDP projected to double compared with 2011 given plans announced in the sector (Figure 5). In addition, export growth should pick up thanks to the gradual enlargement of capacities of the resource sector and the recovery in foreign coal sales after the Queensland floods of 2011. With the expected progressive dissipation of global uncertainties and the gradual strengthening of the international environment over time, these offsetting forces should help the economy grow closer to its potential rate in the second half of 2014. With a still negative output gap and unemployment rate projected to hover around 5½ per cent, inflation should remain low at 2¼-2¾ per cent.

Table 1. **Short-term projections**

	2008	2010	2011	2012	2013	2014
	Current prices AUD billion	Percentage changes, volume (2009/2010 prices)				
GDP	1 232.4	**2.4**	**2.3**	**3.7**	**3.0**	**3.2**
Private consumption	668.6	2.9	3.3	3.9	2.6	3.1
Government consumption	213.3	3.4	2.5	2.6	0.1	1.1
Gross fixed capital formation	355.4	4.6	7.2	8.6	7.3	5.0
Final domestic demand	1 237.3	3.4	4.2	4.9	3.5	3.3
Stockbuilding[1]	3.5	0.6	0.4	-0.1	-0.2	0.0
Total domestic demand	1 240.8	3.7	4.7	4.9	3.3	3.3
Exports of goods and services	277.0	5.4	-1.3	5.6	5.6	6.1
Imports of goods and services	285.4	14.3	11.1	7.1	6.6	6.6
Net exports[1]	-8.4	-1.8	-2.5	-0.2	-0.3	-0.2
Memorandum items						
GDP deflator	_	5.7	4.1	-0.3	1.7	2.3
Consumer price index	_	2.9	3.4	1.8	2.8	2.3
Private consumption deflator	_	2.7	2.5	2.0	2.8	2.3
Unemployment rate	_	5.2	5.1	5.2	5.5	5.5
Output gap		-1.2	-2.0	-1.5	-1.9	-2.2
Household saving ratio[2]	_	8.9	9.9	8.9	8.7	9.0
General government financial balance[3]	_	-4.7	-4.0	-2.8	0.0	0.5
General government gross debt[3]	_	23.5	26.7	29.3	28.9	28.0
Current account balance[3]	_	-2.9	-2.2	-3.8	-5.0	-5.2

Note: National accounts are based on official chain-linked data. This introduces a discrepancy in the identity between real demand components and GDP. For further details see *OECD Economic Outlook Sources and Methods* (*www.oecd.org/eco/sources-and-methods*).

1. Contributions to changes in real GDP (percentage of real GDP in previous year), actual amount in the first column.
2. As a percentage of disposable income.
3. As a percentage of GDP.

Source: OECD, *OECD Economic Outlook 92 Database*.

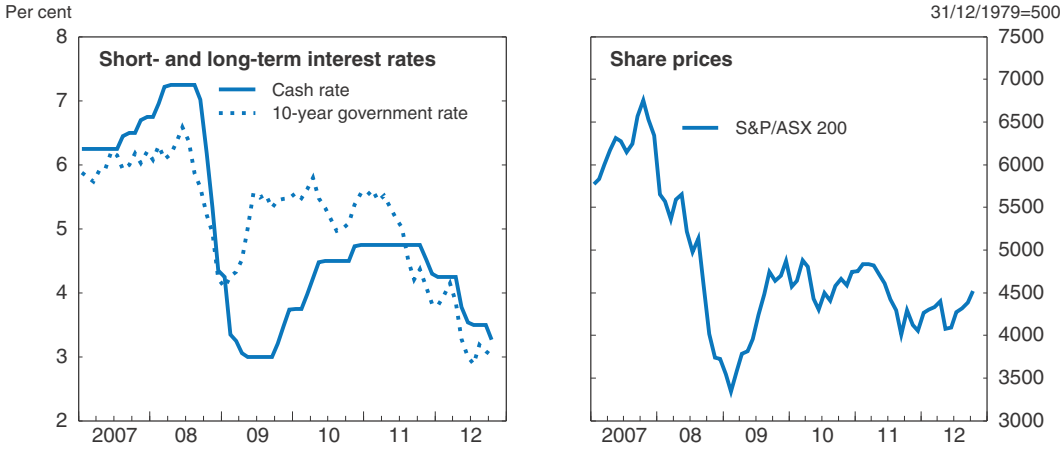
The main risks to these projections stem from the external environment and, in the first place, a potential worsening of Europe's sovereign debt crisis. Although Australia will likely be less vulnerable to such a scenario than many other OECD countries due to its low exposure to Europe, it is exposed to the risk of a substantial weakening of China and other Asian countries. A sharper-than-expected slowdown in this part of the world would reduce exports, the terms of trade and, most likely, the real exchange rate. Increased supply of resource production might also place downward pressure on commodity prices. The structural shifts towards resource sectors are also a source of uncertainty and may affect employment, confidence and growth, which could further weaken real estate prices.

The boom complicates short-and medium-term monetary and fiscal policy

The monetary easing is welcome

The flexible exchange rate and credible inflation target have facilitated adjustment to the mining boom so far. The appreciation of the dollar has eased the pressures of increasing demand on limited short-term supply. Unlike previous mining shocks, growth has remained relatively robust, unemployment low and inflation contained. In the absence of inflationary pressures, the RBA cut its cash rate by 1½ percentage point, to 3.25%, in five steps between November 2011 and October 2012, consistently with its inflation targeting framework (Figure 7). While bank funding costs remain elevated (Box 2), monetary policy

Figure 7. **Interest rates and share prices**



Source: RBA.

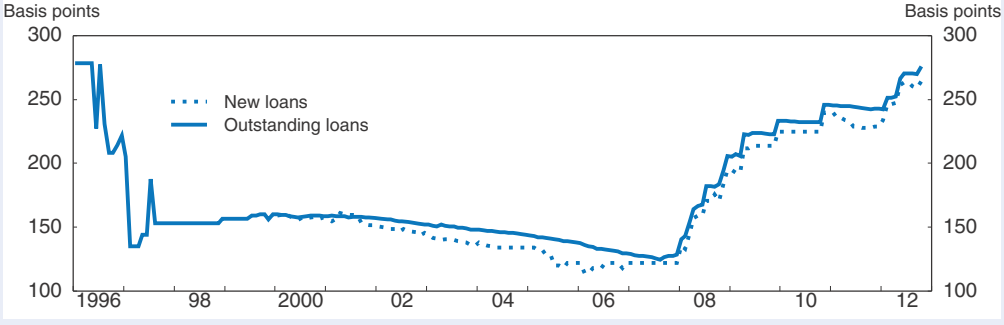
StatLink http://dx.doi.org/10.1787/888932736832

Box 2. **Bank funding costs have fallen more slowly than the cash rate**

The cash rate set by the RBA is a key factor, but not the only determinant of bank lending rates, which are also affected by other influences such as the level of competition in the financial sector and movements in risk premiums. Since the crisis, the spread between the cash rate and lending rates has increased by 1.20-1.30 percentage points, reversing the downward trend noted between the end of the 1990s and 2007 (Figure 8).

The main reason for the growing spread between banks' lending and cash rates is the increase in funding costs (Debelle, 2012). These costs reflect the higher costs of wholesale funding, the rise in deposit rates caused by heightened competition among banks, and a general shift from short-term to more stable financing sources. At the beginning of 2012, deposits supplied 52% of banks' overall funding, compared with 40% in 2007. Conversely, the share of funding source from short-term international markets dropped from 15% to 12%.

Figure 8. **Spread between the cash and mortgage rates**



Source: RBA.

has become accommodative. Long-term interest rates also fell from mid-2011 and financial asset prices have tended to stabilise since end-2011, which has lessened the impact of the strong dollar on financial conditions.

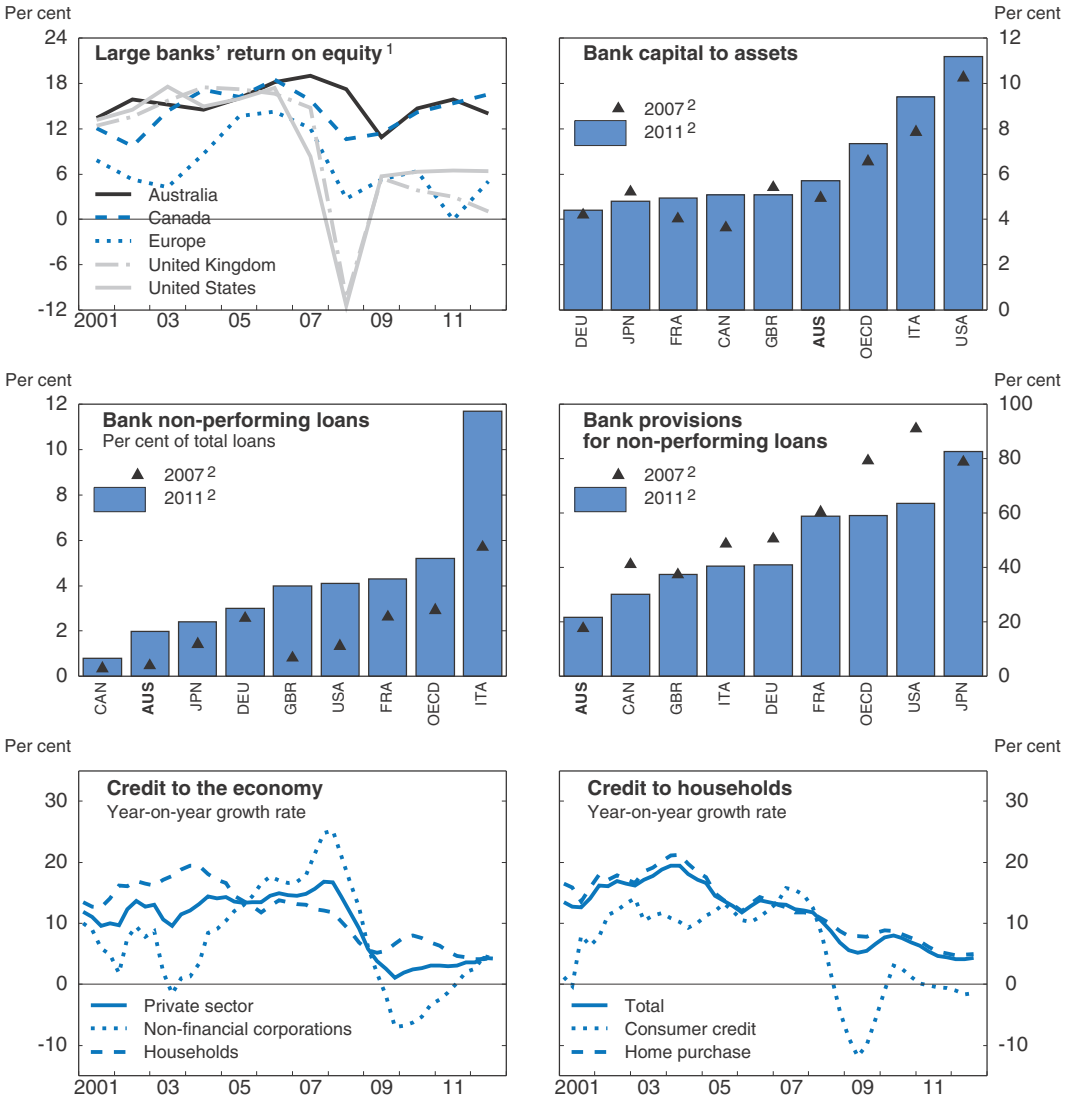
The cut in RBA rates, together with planned fiscal consolidation, is part of a rebalancing of the fiscal-monetary policy mix following the return to more normal times. The rebalancing of the policy mix implies less pressure on interest and exchange rates, thereby alleviating adjustment difficulties for the exposed non-mining sector (Corden, 2012). More broadly, the return to a more medium-term-oriented fiscal management after the events of the crisis, and to the pre-eminence of monetary policy to steer demand, is also appropriate. Despite its limitations, monetary policy is still the best available tool to flexibly manage the current economic situation, which is hard to decode because of the lumpiness of mining investments, uncertain delays concerning the expected pick-up of commodity exports and other structural changes.

Monetary conditions currently seem to be appropriate, but the RBA should be prepared for further loosening if the international environment deteriorates. The conduct of monetary policy needs to cope with the conflicting pressures on the currency. Recently, Australian dollar assets have attracted safe haven flows as sovereign funds and foreign central banks have diversified their portfolios by buying Australian government bonds, bringing their yield down to a 60-year low (Lowe, 2012). Partly reflecting carry trades, the fall in the terms of trade from their 2011 third-quarter peak did not, for example, bring about a drop in the Australian dollar. A lower sensitivity of the currency to falling commodity prices might require stronger cuts in the cash rate to support demand.

Another factor that may complicate monetary policy is shifts in bank funding costs which has been hampering monetary policy transmission mechanisms. Until recently, these developments have not affected monetary policy, as they are taken into account by the RBA when setting the cash rate. New increases in funding costs in the event of renewed turmoil in global financial markets would limit the scope for the Bank to ease monetary conditions through cash rate cuts. Nevertheless, the RBA's room for manoeuvre to cope with potential negative shocks remains substantial in comparison with other main central banks, especially as it has not expanded its balance sheet to ease monetary conditions so far.

The financial sector has continued to perform well. The banking system weathered the 2008-09 crisis well, and the larger banks are now less reliant on wholesale funding as deposit growth substantially exceeds the increase in loans. Australia's leading banks, unlike those in many other countries, have managed to keep profitability close to pre-crisis levels and have maintained a strong financial position, as in Canada (Figure 9). They continue to be viewed relatively favourably by the international rating agencies. Direct exposure to the euro area, especially to those countries facing the strongest financial stress, is low. The banking sector has limited exposure to the mining sector with most major investment projects financed by retained earnings or direct borrowing from capital markets (Connolly and Orsmond, 2011). As discussed in the previous *Survey*, banks' vulnerability to external funding is also mitigated by the fact that almost all these borrowings are hedged back to Australian dollars (d'Arcy *et al.*, 2009; OECD, 2010a). Moreover, overall loan impairment is still limited, especially compared with levels experienced in many other OECD countries, despite some increase in impairment for business loans since the crisis (RBA, 2012). Australian banks, which are adequately capitalised, also issued a sizeable amount of bonds in early 2012 to cover their wholesale funding requirements for the year, which has put them in a solid position to cope with possible renewed funding strains.

Figure 9. **Banking sector indicators**



1. After tax and minority interests.
2. Or nearest available year.

Source: RBA, *Monetary and Credit Statistics* and IMF, *Financial Soundness Indicators*.

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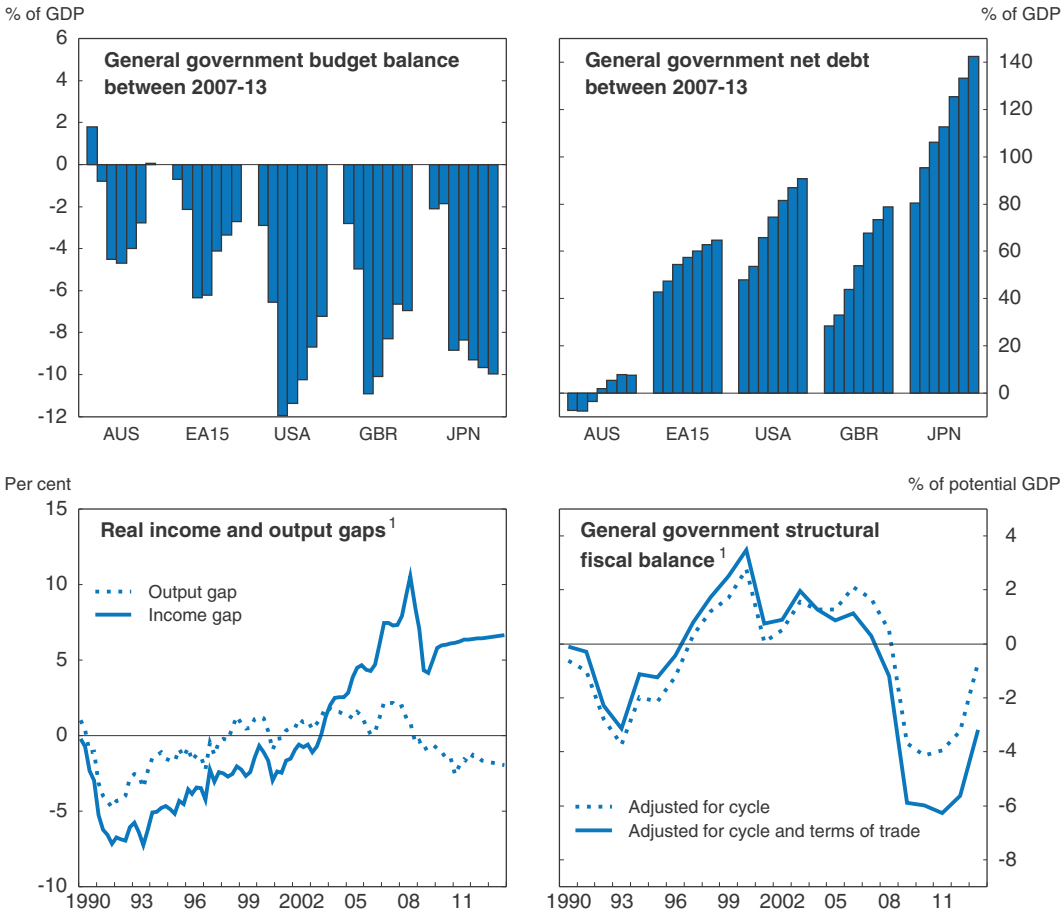
The priority for financial policies is to preserve a strong and stable banking sector. The recent behaviour of banks reflects in part stronger competition to attract deposits, which favours saving and is part of the general trend towards re-evaluating financial risks, which were underestimated before the crisis. Maintaining large, well capitalised and profitable banks also facilitates the access to international capital markets that the country needs. This should not prevent continued efforts to promote an adequate balance between stability and competition in the financial sector, where large banks tend to be favoured relative to smaller ones as a result of the government's implicit or explicit guarantees. To this end, the introduction since February 2012 of a permanent guarantee on deposits up to AUD 250 000 and applying it to all banks, which is relatively generous by international standards, constitutes a useful step to the level playing field for banking competition. The

new scheme will fully protect 99% of deposit accounts in Australian banks. However, the problem associated with the risk of failure of systemically important financial institutions remains. This needs to be addressed by continued tight supervision. Moreover, as suggested by a recent Treasury discussion paper (Australian Government, 2012a), there might be a need to review the power of the Australian Prudential Regulation Authority to intervene pre-emptively in financial institutions facing material deterioration of their performance that could put depositors' money at risk.

Short-term fiscal policy is appropriate but should be ready to react to the substantial risks to the outlook

Australia's public finances are in much better shape than those of many OECD countries. The general government deficit, at around 4% of GDP in 2011, is less than half the level in the United States, Japan or the United Kingdom (Figure 10). Above all, net public debt, at around 5% of GDP in 2011, was 50 to 100 percentage points below the level

Figure 10. **Fiscal policy indicators**



1. The structural indicator adjusted for the terms of trade takes into account the cyclical fluctuations of the budget on the basis of the gap in real income rather than the gap in real output by including the impact in the terms of trade relative to their long-term level (Turner, 2006). It assumes that the terms of trade would eventually stabilise to their average value between FY 1985/86 and FY 2010/11.

Source: OECD, *OECD Economic Outlook 92 Database;* Turner, D. (2006), "Should Measures of Fiscal Stance be Adjusted for Terms of Trade Effects?", *OECD Economics Department Working Papers*, No. 519, OECD Publishing, Paris.

StatLink http://dx.doi.org/10.1787/888932736889

in these countries and in the euro zone, in part due to the Future Fund (valued at AUD 77 billion or 5¼ per cent of GDP in March 2012), which is to offset public sector employee pensions from 2020 onwards. Australia is also well prepared to cope with the consequences of population ageing, thanks to its compulsory funded private pension system. Pressure on public finances in the coming decades will however arise from growth in health outlays, essentially for non-demographic reasons. Even so, net debt is projected to rise to only 20% of GDP in 2050, which should be easily sustainable (Intergenerational Report, 2010).

The underlying health of the public finances has however significantly weakened in recent years. OECD estimates the structural deficit at about 3½ per cent of GDP in 2011, at a time when the terms of trade were close to their historical peak. However, the high terms of trade raise income and tax revenues, especially in the resource sector where profits have soared and in the mining states. Adjusting for these effects, and assuming a terms of trade equal to its average between 1985 and 2010 widen the underlying fiscal deficit to 6% of GDP in 2011 (Figure 10). This deterioration reflects not only the impact of the crisis-induced fiscal stimulus, but spending of a large part of the pre-crisis mining-related revenues through permanent tax cuts and expenditure increases. To deal with this adverse trend, several savings measures have been introduced that will steadily build over time, providing ongoing improvements to the budget position. These measures include increasing the pension age, means testing the private health insurance rebate, reforms to family tax benefits, and reducing superannuation concessions for high income earners.

The federal government aims to return to a surplus as of FY 2012/13. This implies a sharp tightening of 3% of GDP in one year. It would strengthen the national savings rate, thereby limiting the country's dependence on foreign capital to meet its high investment needs. This strategy should help retain the top (AAA) grade awarded to Australia by the credit rating agencies, and to keep down the costs of banks' access to international financial markets. Above all, a low unemployment rate, growth prospects close to potential and still-high terms of trade constitute favourable conditions for restoring fiscal space. Therefore, now is an opportune time for fiscal consolidation. Maintaining a solid government balance sheet offers valuable protection against large-scale shocks, as the 2008-09 crisis demonstrated.

Measures have been chosen to reduce the impact of the consolidation on GDP, including small shifts in the timing of outlays and rescheduling of tax cuts, with little impact on the economy. Expenditure cuts in defence and international aid are predominantly spent abroad or stimulate imports. Some measures are designed to redistribute resources in favour of lower-income social groups with a high propensity to consume, thereby cushioning the negative effect of the measures on demand (Parkinson 2012). Moreover, the economy will be supported by the monetary easing underway. Eslake (2012) estimates that the 3% of GDP deficit cut will reduce growth by less than 1%.

However, flexibility is required if negative risks to the outlook materialise. Given the traditional medium-term focus of fiscal policy, the authorities should let automatic stabilisers work in case of a sharper-than-expected cyclical weakening, even if this postpones the return to a budgetary surplus. While monetary policy should be the first line of defence, if a new full-scale global crisis were to break out, the authorities should be ready to intervene in a prompt manner to support activity, as they did in 2008-09.

The medium-term fiscal strategy should take better account of structural changes and be more cautious

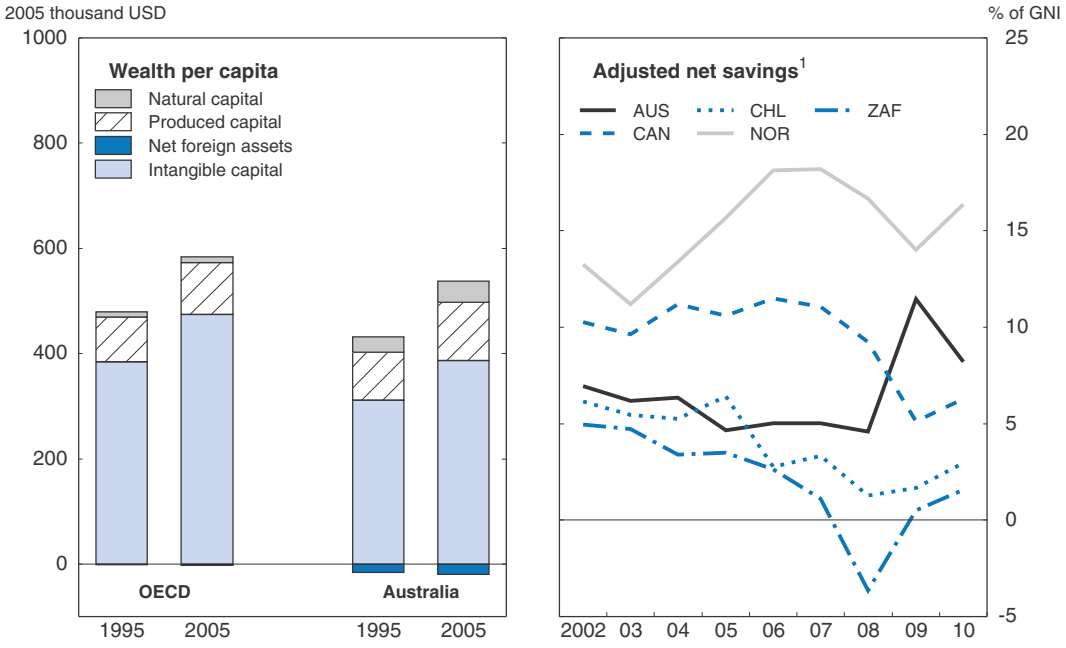
The medium-term fiscal plan is to achieve a small increase in the surplus by 2015 (from 0.1% to 0.3% of GDP between FY 2012/13 and FY 2014/15). The authorities have committed to restrict the real increase in public spending to below 2% per annum until a surplus of 1% of GDP is reached and while the economy is growing at/or above trend. This is consistent with the Australian medium-term fiscal framework which seeks to maintain a small surplus on average over the medium term, without increasing the tax-to-GDP ratio above its FY 2007/08 level, on average, and thereby improving the government's net financial worth over the medium term. However, the plan presumes that the terms of trade will remain relatively high, although it assumes a cumulative medium-term decline of around 10%. Should the terms of trade return to their lower longer-term average value (estimated on the basis of the average level over the 1985-2011 or 1985-2003 period), this would imply instead a 40% to 50% fall. In this case, the slight federal budget surplus as of FY 2012/13 could turn into a deficit of 2% to 3% of GDP, counting only the direct effect of lower fiscal receipts induced by lower commodity prices. A sharper fiscal deterioration might occur if the fall in the terms of trade resulted in a cyclical downturn as well.

In this perspective, it would be prudent to consider building a larger buffer against the risks of future commodity price declines. Having to reverse higher permanent spending commitments because of falling revenues would be costly, and could entail a pro-cyclical fiscal contraction. As discussed in the 2008 *Survey,* during the first phase of the mining boom, between FY 2002/03 and FY 2007/08, the federal government redistributed the bulk of the incremental tax revenue derived from terms-of-trade gains, even though a comfortable budget surplus of 2% of GDP was maintained (OECD, 2008). The creation of a stabilisation fund would help insulate the budget from swings in resource-based revenues and thereby protect the economy from increasing volatility as it shifts to a greater dependence on the resource sector. Such a fund would be a useful device to accumulate public revenues from mining taxes when they are unusually high. It would de-link public spending decisions from revenue changes caused by shifting terms of trade, which would be consistent with the rationale underlying the current budgetary strategy. The issue is not only to use the unusual revenue windfall to raise national savings, but also to mobilise these resources promptly in a downturn.

The pace at which the revenues accruing to the public sector from mining exploitation are recycled into the economy deserves an open and transparent debate to take into account society's risk tolerance given the volatility of these revenues and society's preference for the timing of their use (Kearns and Lowe, 2011). According to the authorities, this question does not need to be settled urgently, since the targeted budget surplus should first be reached and the net debt wiped out. Also, the current medium-term fiscal framework has worked well so far. Moreover, the difficulties in establishing such a fund with an appropriate fiscal rule should not be underestimated.

In contrast to other countries such as Norway however, Australia does not need to permanently accumulate assets in a reserve fund (Gruen and Garton, 2012). Despite depletion of subsoil assets, Australia's natural resource wealth has continued to increase, including as a result of new discoveries and relative price changes. Net savings data adjusted for the depletion of natural assets from the World Bank suggest that gross savings in Australia along with investments in human capital have been sufficiently large to increase national wealth over time (Figure 11).

Figure 11. **Expanded wealth measures**



1. Adjusted net savings take into account gross savings for investments in human capital, for the consumption of physical capital and the depletion of natural capital, including estimates of damage generated as a result of carbon dioxide and particulate emissions.
Adjusted net savings = Gross national saving + education expenditure - consumption of fixed capital - energy depletion - mineral depletion - net forest depletion - damage from carbon dioxide emissions - damage from particulate emissions.

Source: World Bank (2010), *World Development Indicators* and *Global Development Finance*.

StatLink http://dx.doi.org/10.1787/888932736908

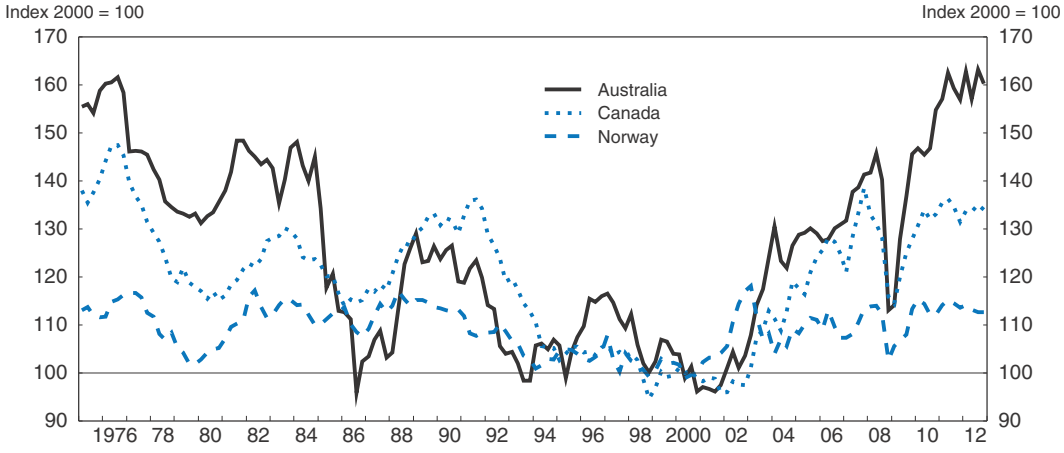
Box 3. **Recommendations for macroeconomic policies**

- The current shift in the policy mix is appropriate. If the cycle weakens, ease monetary policy and let the automatic stabilisers work. While monetary policy should be the first line of defence, if a full-scale global crisis of similar magnitude as in 2008-09 erupts, be ready to adopt prompt fiscal expansion.
- Consider creating a stabilisation fund to better insulate public spending decisions from revenue changes caused by volatile terms of trade.

Renewed structural adjustment to foster economic performance

China's sustained strong growth opens new opportunities for Australia, but will impose significant strains. Adjustment to the mining boom so far has produced favourable results, thanks to the robust macroeconomic policy framework and the largely decentralised wage setting system (Battellino, 2010; Parkinson, 2012). The country's approach to coping with the shock however contrasts with the experience of Norway which has saved a large part of the additional demand generated by its terms-of-trade gains and has broadly stabilised its real exchange rate (Figure 12). Australia remains potentially well placed to continue benefiting from robust Chinese growth due to complementarities between the two economies. It produces a broad range of goods and services in agriculture, mining, education and tourism for which Chinese and Asian demand is strong and likely

Figure 12. **Real effective exchange rates**



Source: OECD, *OECD Economic Outlook Database*.

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to grow. More broadly, Australia is likely to share in the benefits from the gradual shift of the world economy's centre of gravity towards Asia. While the cost represented by the country's remoteness from major markets as measured by per capita GDP was estimated at more than 10% in 2005 (Boulhol and de Serres, 2008), that handicap could drop by 3 percentage points by 2050, according to OECD estimates.

A smooth reallocation of resources within the economy is needed to take full advantage of the new opportunities

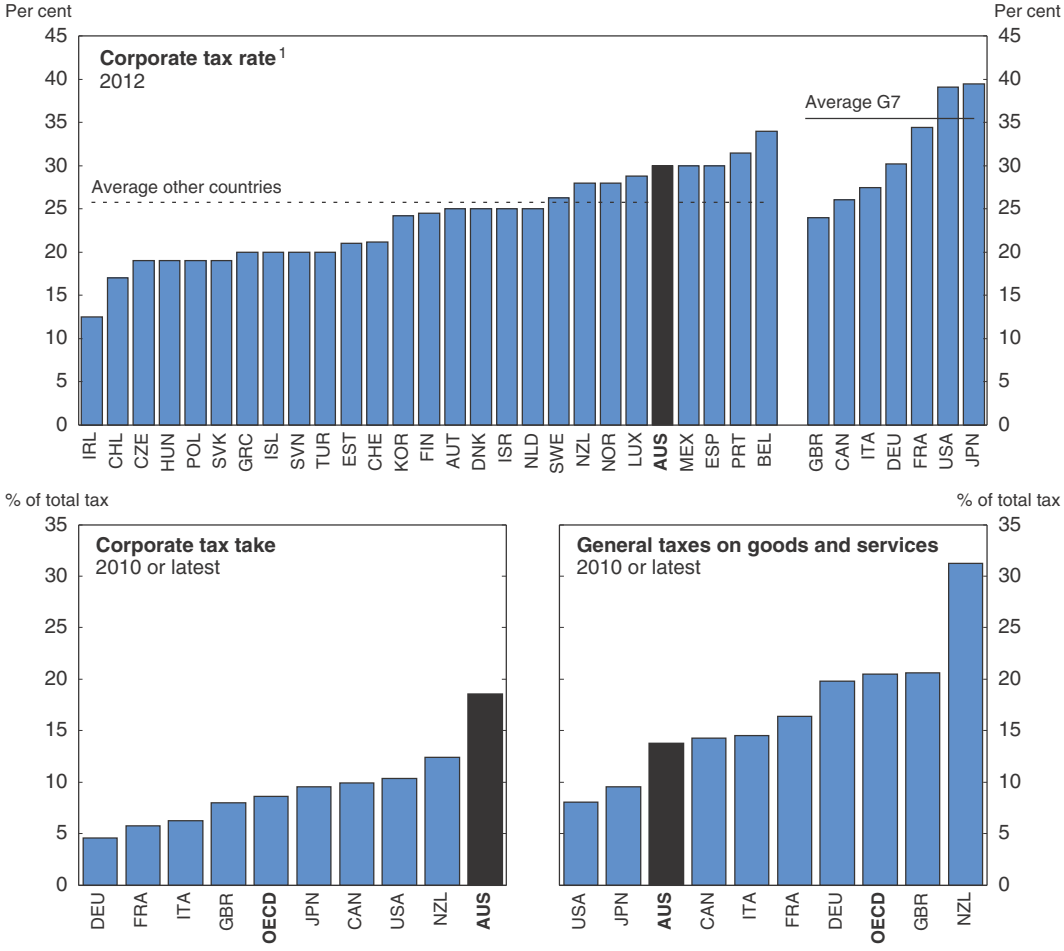
Beyond measures needed to guarantee macroeconomic stability, the best economic policy response in present circumstances would be to maintain and, if possible, reinforce the economy's flexibility. From this perspective, the authorities' efforts to improve public information on the implications that Asia's development holds for Australia are welcome and should be pursued. The many ramifications of the adjustments that the country is bound to face should be explored and explained so that society will accept them more readily.

Australia should not try to resist the changes imposed by this transformed environment. These changes are the result of a mutation of the world economy, which is probably not a temporary phenomenon and is more likely the source of a permanent shift in Australia's comparative advantage, rather than an example of "Dutch disease" (Gruen, 2011). It would be inappropriate then to try to preserve an industrial structure that has in fact been constantly evolving. Using public subsidies to keep resources in sectors adversely affected by such changes, such as the automotive industry, would likely prove futile and expensive and imply lost opportunities elsewhere. It will force stiffer adjustments on sectors that do not benefit from such special support, and over time become a drag on living standards. It is also important not to procrastinate in making these adjustments, for they are easier to undertake in current circumstances, when the economy is growing strongly and resources are available to ease the transition and to compensate the "losers" from the adjustment process. As underlined by the authorities, there is a case for help to smooth the transition, but not preventing it, when its pace and scale make it difficult to absorb, for instance at the regional level.

Tax reforms have a useful role to play in facilitating ongoing structural adjustment

The mineral resource rent tax (MRRT) and tax cuts for SMEs aim to distribute mining boom proceeds more fairly and help firms adapt to the changes underway. Shifting the tax burden from capital, the most mobile factor of production, towards non-renewable resources is justified on efficiency grounds, particularly because the corporate tax rate is relatively high for a "small", capital-importing country like Australia (Figure 13). These reforms go in the right direction, but could usefully be refined in some instances as in the case of the MRRT, even if there is currently little political support for modifying the design of this tax.

Figure 13. **Selected characteristics of the tax system**



1. The use of effective rather than statutory tax rate would provide a more accurate international comparison of corporate tax rates. However, the calculation of homogeneous effective corporate tax rates, taking into account the large diversity of tax deductions in the various tax systems, is not readily available.

Source: OECD (2012), *Tax Database*.

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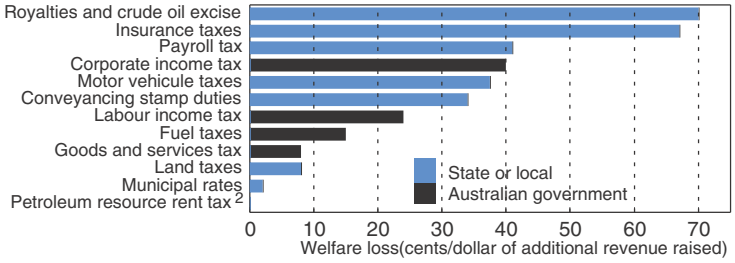
The MRRT in its current form will not eliminate distortions caused by state-levied mining royalties, especially for low-return projects where they are heaviest. Consideration should be given to replacing the royalties with a mining rent tax modelled on the federal approach, leaving the states with the option of setting their own tax rate. This change should be accompanied by broader MRRT coverage, which is limited to iron and coal mining and excludes small firms. Once lessons have been drawn from this new scheme,

mineral resource levies could be raised further if, as appears likely, they remain low on the private rent extracted.

There have also been some welcome steps to ease the tax burden on businesses, and on SMEs in particular, including through simplified and more generous amortisation rules and the possibility to "carry back" losses to offset past taxable income. This latter measure reduces the asymmetry of current taxation rules concerning corporate profits and losses and should not only boost the level and quality of investments but may also reinforce the economy's relatively weak automatic stabilisers. To enhance the benefits of this measure, the authorities might consider expanding its coverage, which is currently confined to incorporated firms, which accounts for only 28% of all small- and medium-sized enterprises (SMEs). The benefits of a possible extension of this provision to unincorporated entrepreneurs are, however, likely to be lower than for corporate firms, since individual entrepreneurs can already set their business losses against incomes from other activity.

The authorities' goal of reducing company taxation by cutting the corporate tax rate, which at 30% is around 5 percentage points above the OECD weighted average, is welcome to help firms adjust their business models to the ongoing structural changes. Promoting new investment, including from abroad, is needed especially in the exposed non-mining sector to boost productivity and competitiveness in a high exchange rate environment. In addition, a lower corporate tax rate would reduce the impact of the significant distortions generated by this tax (Figure 14).

Figure 14. **Marginal welfare loss from a 5% increase in selected taxes**[1]



1. Based on the KPMG Econtech MM900 general equilibrium model of the Australian economy, the welfare loss is defined as the loss in consumer welfare per dollar of revenue raised for a small (5%) increase in each tax, simulated individually. It is measured as a satisfaction (utility) at its original level, once the revenue raised by the tax has been returned to the consumer as a lump sum transfer. The extent of such compensation reflects the distorting effect of the tax in the economy.
2. The petroleum resource rent tax is modelled as a pure rent tax giving rise to a zero welfare loss. In practice, a small increase in this tax could be expected to induce some welfare loss because it is not a pure resource rent tax with full loss offset. However, it would be expected to rank as one of the most efficient taxes in the chart.

Source: KPMG (2009), *Econtech*.

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However, the potential room for lowering this tax could be restrained by the plan to fund it from within the business tax system, as suggested by a report released by a Business Tax Working Group in November 2012. The authorities should instead consider corporate tax reform in a broader context, which would both foster the structural adjustments and bring in budgetary savings. This includes cuts in subsidies for the automotive sector and irrigation infrastructure in rural areas, which are a costly alternative to government repurchase of water user rights. Budgetary room can also be found by eliminating inefficient fossil fuel subsidies as agreed by the G20. With carbon pricing for large industrial emitters now in place, Australia should review the fuel tax credits and exemptions provided to fuel used in sectors

like agriculture, forestry and fishing to ensure that an effective carbon price also reaches these sectors. Austria and the Netherlands, for example, have announced that as of 2013 they will eliminate tax reductions for fuel used in agriculture.

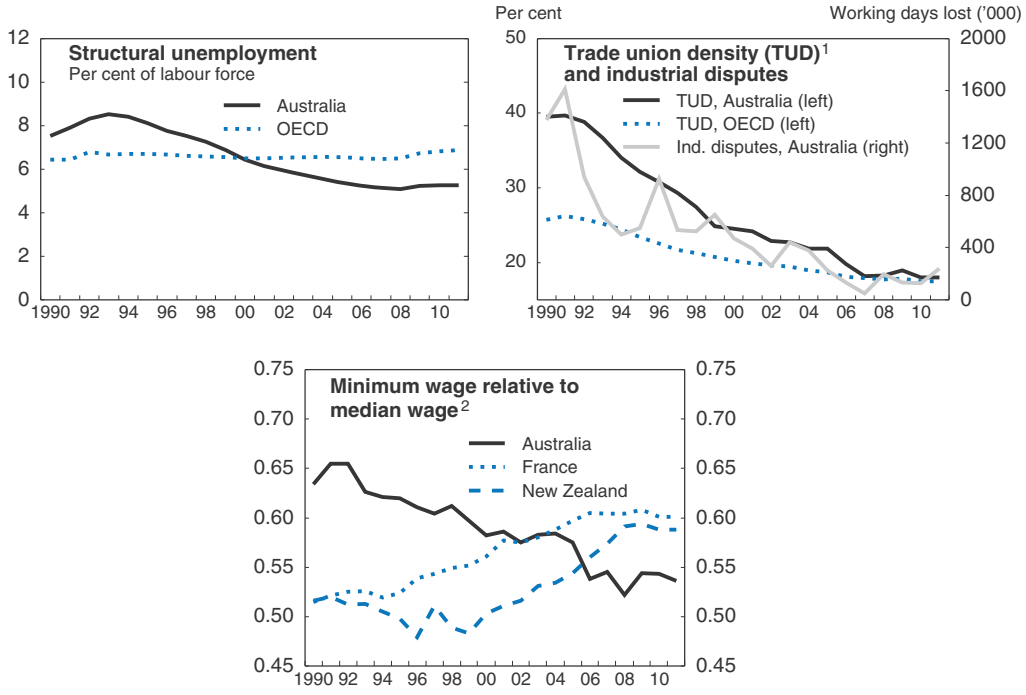
As stressed in the last *Survey*, longer-term tax reform efforts should also be pursued along the lines suggested in the Henry report to stimulate productivity and enhance the economy's capacity to adapt to its changing environment (OECD, 2010a; AFTS, 2010). New steps have recently been taken in this direction, including the raising of the personal income tax threshold in the FY 2012/13 budget as a counterpart to the introduction of carbon pricing in July 2012. One priority should be to rationalise the tax systems of the states, which rely on too many inefficient taxes with high administrative costs, imposed on housing in particular (Figure 14). A cut in conveyance duties, as was recently decided by the Australia Capital Territory, would reduce property transaction costs and encourage labour mobility. The progressive nature of the state land tax, which places a particular burden on large property developers, should also be eliminated to boost the rental of apartment buildings, which is currently low in Australian cities (OECD, 2010a). Such changes could be financed by a hike in the 10% GST rate, which is low in international comparison, by cuts in subsidies for first-home buyers or by broadening the state land tax base through the suppression of the exemption for owner-occupiers. Alternatively, there are also some significant tax expenditures that could be reduced or eliminated, such as exemptions from GST, including on fresh food, medical services and school supplies (OECD, 2010a).

A flexible labour market, taking account of equity concerns, remains essential for adjustment

Australia's labour market has performed remarkably well compared to most other OECD countries. The implementation of a new industrial relations system in 2009 via the *2009 Fair Work Act* strengthened bargaining at the enterprise level, widened the minimum conditions safety net and restored protection against unfair dismissal for employees in SMEs. A recently completed independent review of the Fair Work Act found that since the Act came into force important economic outcomes (*e.g.* wages growth, employment growth, industrial disputation) have been favourable to Australia's continuing prosperity (Australian Government, 2012b). The Fair Work Act has made the system more employee-friendly – in terms for example of a slightly higher relative minimum wage and unionisation rate – with little effect so far on labour market performance and productivity (Borland, 2012) (Figure 15). Nevertheless, business has been concerned that the Act impedes productivity growth by eliminating individual statutory agreements, increasing the scope of matters that can be included in enterprise agreements and restoring the requirement for agreements for genuinely new businesses (greenfield agreements) to be negotiated with a union (a requirement which has on some occasions made it difficult to reach agreement within a reasonable time frame).

The development of labour market institutions since 1990, together with other factors, including rising demand for skilled workers resulting from technological change, have widened income inequalities among the working age population (OECD, 2011a) (Figure 16). While income inequality may be better addressed with tax and transfer policies, a fair industrial relations framework that the Fair Work Act reform has aimed to put in place, can play a role. The objectives of the Act include providing "a balanced framework for co-operative and productive workplace relations that promote national economic prosperity and social inclusion for all Australians". The recently completed Fair Work Act Review

Figure 15. **Structural labour market indicators**



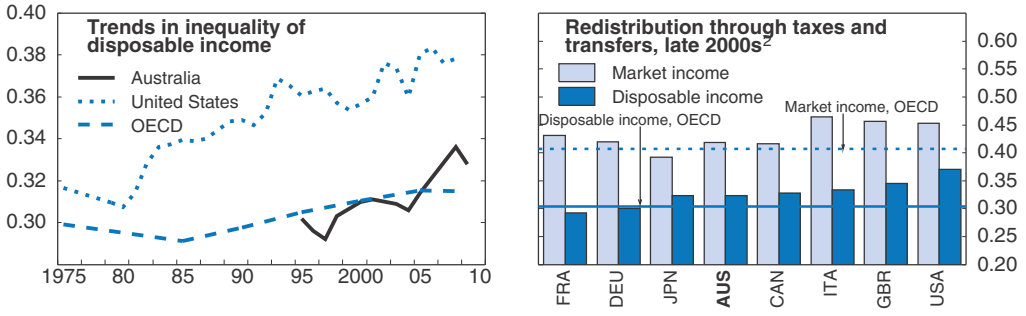
1. Number of wage and salary earners that are trade union members, divided by the total number of wage and salary earners.
2. Of full-time workers.

Source: OECD, *Trade Union Density Database; Minimum Wages database; OECD Economic Outlook Database.*

StatLink http://dx.doi.org/10.1787/888932736984

Figure 16. **Income inequality**

Gini coefficient[1]



1. The Gini coefficient ranges from 0 (when all people have identical incomes) to 1 (when the richest person has all the income). Market incomes are labour earnings, capital incomes and savings. Disposable income is market income plus social transfers less income taxes. Incomes are adjusted for household size. Data refer to the working-age population.
2. Late 2000s refer to a year between 2006 and 2009.

Source: OECD (2011), *Divided We Stand: Why Inequality Keeps Rising*, OECD Publishing, Paris.

StatLink http://dx.doi.org/10.1787/888932737003

found that the effects of the legislation have been broadly consistent with this objective (Australian Government, 2012b). A review of modern awards (which set minimum terms and conditions of employment in particular industries or occupations) by Fair Work Australia (FWA) is currently underway and is due to be completed by 31 May 2013.

As suggested by the Fair Work Act Review, major changes do not seem warranted at this stage. The Review found that existing framework of direct and decentralised bargaining between employers and employees still seems to be yielding good results. The costs of adjusting to frequent regulatory changes both for workers and employers also militate against frequent major reforms in the absence of evidence of a problem (Borland, 2012). Consequently, this independent review did not suggest any fundamental modification to the legislation but proposed some technical amendments to further encourage flexibility and the equity within the system.

These amendments would, for instance, promote easier use of individual flexible arrangements and reduce the risks of improper recourse to unfair dismissal procedures. In addition to these welcome proposals, the distribution of litigation costs of unfair dismissal claims borne (mostly) by the employers could be somewhat rebalanced to reduce the financial incentives to abuse them, while avoiding creating a barrier to industrial justice for workers. Moreover, to facilitate the agreements in the case of negotiations for new businesses (greenfield agreements), the authorities could consider allowing non-union rather than only union to bargain with employers (as is possible for all other agreements), rather than extending the arbitration role of FWA, as is suggested by the review.

The ongoing confrontational debate opposing the business sector and unions on the functioning of the industrial relations system may eventually undermine industrial peace in a period of important structural adjustment. More co-operative approaches to industrial relations in firms would favour employment-driven innovation based on workers' experience and human capital, which would stimulate productivity and competitiveness. To support a more co-operative climate, the Fair Work Act Review has suggested that FWA plays a more active role, for example, by identifying best practices productivity enhancing provisions in agreements and making them more widely known. In addition, encouraging a more collaborative approach might be helped by investigating sector-specific working conditions that influence negotiated flexibility and equity issues. The Productivity Commission recently performed such an investigation for the retail sector. Improving information on particular flexibility needs and equity issues in other sectors might help move forward the efficiency fairness debate by focusing it on practical questions, which can be solved through negotiations.

A well-functioning employment service can play an important role in mitigating the social costs of adjusting to structural changes. Employment services (Job Service Australia, JSA) compare favourably with those in other OECD countries, and the authorities do not intend to reform JSA in the near future, as it depends on private providers financed by the federal government with the current contracts running until 2015. Nevertheless, the delivery of these services is fraught with excessive bureaucracy and incentive problems. To improve effectiveness the funding of employment services could be more closely linked to job seekers, possibly by introducing a voucher system, letting them, at least to some extent, shop among competing providers for services that meet their needs. It may also be useful for many disadvantaged job seekers to take an active role in preparing themselves to integrate the labour market, even though they should continue to comply with strict job-search requirements and not be allowed to arbitrarily change providers. Consideration should be given to further reducing *ex ante* control on service providers' activity and more tightly linking their remuneration to the "Star Rating" (which the Employment Department uses to assess the relative performance of service providers), which requires a close monitoring to minimise risks of statistical bias. In particular, achieving employment

outcomes for less disadvantaged workers should not be given a too low weight within the performance management system.

Employment services could also be reorganised to offer standardised employment services for job seekers with no particular disadvantage, and separate individualized services for the currently or potentially long-term unemployed. Such a system, which would encourage more specialisation among service providers, could mean greater efficiency.

Box 4. **Recommendations for facilitating the structural adjustment to the mining boom and Asian development**

Tax reform

- Pursue business tax reforms including reducing the corporate tax rate and a possible extension of the carry back loss scheme to unincorporated firms.
- In pursuing tax reform promote the use of less-distorting untapped fiscal resources, including cuts in subsidies to irrigation infrastructure and the automotive sector. Review tax credit for business for excise taxes on fossil fuels in sectors not covered by the new carbon tax.
- Broaden the mineral resource rent tax (MRRT) coverage. Consider replacing state royalties by a mining rent tax modelled on the federal approach, allowing states to set their tax rates.
- Rationalise other state taxes: reduce or remove conveyance duties and the progressivity of the state land tax; broaden the state land tax base by eliminating exemptions for owner-occupiers; cut subsidies to first-home buyers; broaden the base of the GST and consider increasing its relatively low rate.

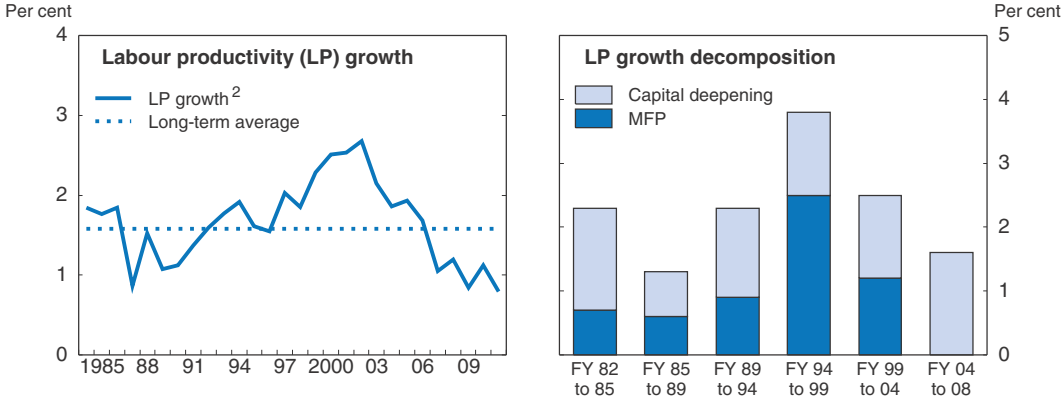
Labour market reform

- Preserve the existing framework of direct and decentralised bargaining as it has yielded good results so far. Avoid substantive changes to the framework to minimise the costs of adjusting to frequent regulatory changes.
- Consider minor changes to the industrial relations framework including allowing employers commencing a genuinely new business to negotiate collective agreements both directly with potential future employees and/or unions.
- Rebalance the distribution of litigation costs of unfair dismissal procedures between employees and employers to reduce incentives to abuse them.
- Investigate sector-specific working conditions affecting the flexibility and equity issues negotiated between employers and employees to help move the efficiency/fairness debate forward and focusing it on practical questions that are potentially easier to solve through negotiations and compromises.
- To improve the effectiveness of employment service, link funding of employment services more closely to job seekers, possibly by introducing a voucher system. Consider linking the remuneration of service providers more tightly to their outcomes measured by the "Star Rating" performance evaluation system.
- Specialise Job Service Australia, with standardised services for job seekers with no particular disadvantage, and individualised services for the currently or potentially long-term unemployed.

Enhancing productivity is critical for boosting future living standards

Australia's labour and multifactor productivity growth has slowed from the record levels achieved in the 1990s (Figure 17), and this weakening has been more pronounced in Australia than elsewhere, although it is very broadly in line with the experience of some other resource-rich countries (Figure 18). There is no single explanation for the decline in productivity, which seems to reflect a combination of factors ranging from special developments in a few key industries to more systemic factors. Regardless of the reasons explaining the slowdown, lifting productivity is crucial for maintaining Australia's trend growth of living standards of the past two decades.

Figure 17. **Productivity trends**[1]



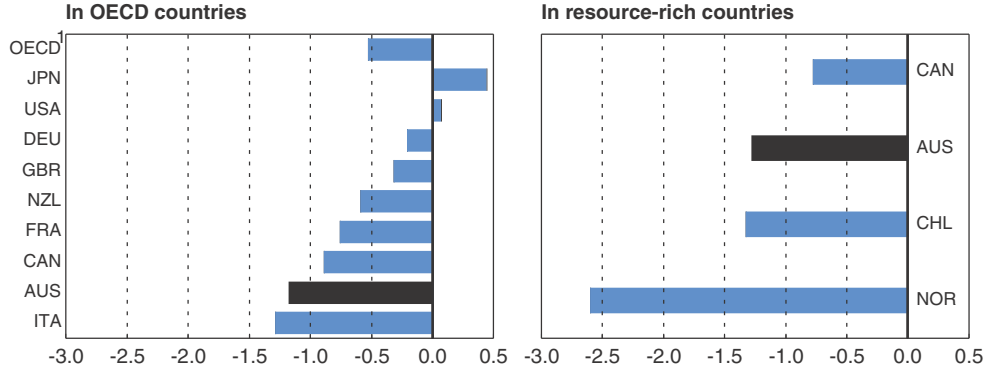
1. Whole economy for left panel and twelve-industry market sector for the right panel. Only complete productivity cycles are shown.
2. Five-year moving average.

Source: ABS, Cat. Nos. 5204.0 and 5206.0.55.002.

StatLink http://dx.doi.org/10.1787/888932737022

Figure 18. **MFP growth slowdown**

Difference of MFP average growth between the 1990s and the 2000s



1. The OECD aggregate includes only 18 members for which data are available.

Source: OECD, *Productivity Database* and The Conference Board, *Total Economy Database*, January 2012, *www.conference-board.org/data/economydatabase/*.

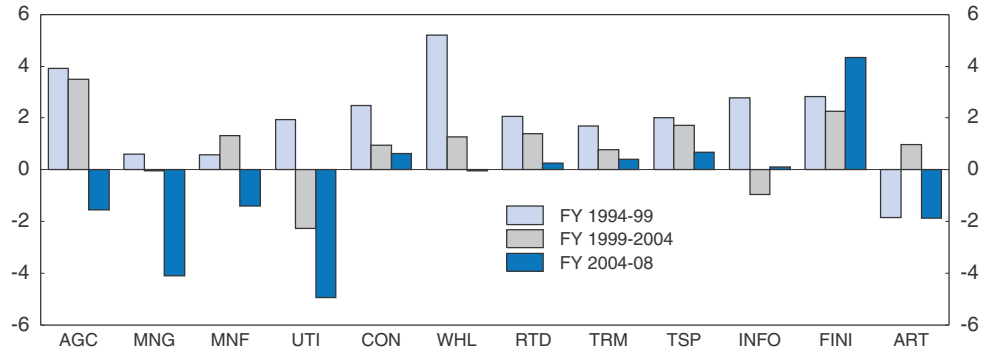
StatLink http://dx.doi.org/10.1787/888932737041

Much of the multifactor productivity (MFP) decline is explained by the mining boom and concomitant structural adjustment of the economy

Productivity was affected by special circumstances in some sectors (Figure 19). In mining, soaring profits have led to massive investment. However, due to often long lags between investment in new capacity and full production, the strong input growth has led to a sharp decline in productivity. As production comes fully on line it could be expected to have a positive impact on productivity. The exploitation of more marginal resource deposits made possible by higher commodity prices is an additional explanation. Productivity in agriculture and utilities (electricity, gas, water and waste services) has been influenced by drought. At the same time, a growing demand for energy has induced major investments to increase capacity, but again lags between installation of new capacity and full production show up in lower productivity. OECD estimates suggest that the contribution of these three sectors accounted for about half of the productivity slump over the past decade.

Figure 19. **MFP growth by industry**[1]

Annual average growth in log changes



1. Twelve-industry market sector. AGC: agriculture; MNG: mining; MNF: manufacturing; UTI: utilities; CON: construction; WHL: wholesale trade; RTD: retail trade; TRM: accommodation & food services; TSP: transport; INFO: information and technology; FINI: finance and insurance; ART: art & recreational services. Only complete productivity cycles are shown.

Source: ABS, Cat. Nos. 5204.0 and 5206.0.55.002 and unpublished ABS data.

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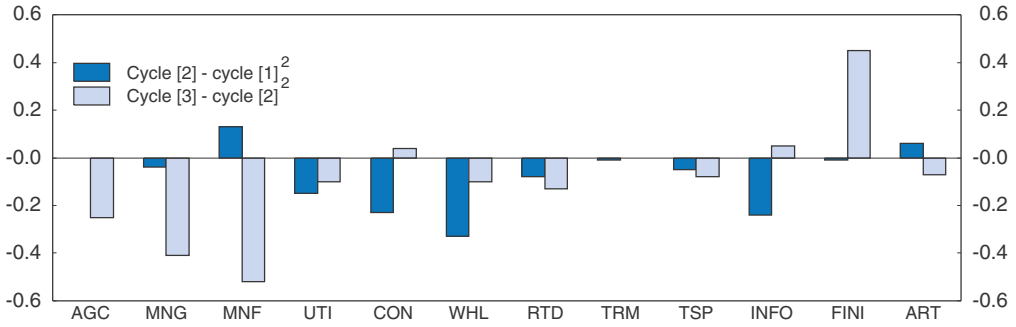
The manufacturing sector contributed about a third of the MFP slowdown between the last two complete productivity cycles, following the appreciation of the dollar, which has affected competitiveness (Figure 19, Figure 20). Manufacturing output has remained broadly unchanged since the onset of the mining boom in 2003, while the inputs, specifically productive capital stock, have increased, resulting in a decline in MFP growth.

However, other factors apart from the resource boom also appear to be at work. The impact of the comprehensive structural reforms in the 1980s and 1990s may have faded, and/or incentives for productivity-enhancing reforms may have fallen with increased complacency with the economic success. This is reflected in the deteriorating ranking in OECD product market regulation (PMR) between 2003 and 2008. Australia also faces capacity constraints due to long lasting economic expansion (Dolman, 2009; Eslake, 2011). Productivity developments may also reflect policy settings or the need for reform in certain areas, including in relation to the regulation of roads, water and electricity. In addition, longer-term drivers of productivity, namely skills, innovation, and infrastructure spending

Figure 20. **Industry contributions to MFP slowdown**[1]

Annual average growth in log changes



1. Twelve-industry market sector. AGC: agriculture; MNG: mining; MNF: manufacturing; UTI: utilities; CON: construction; WHL: wholesale trade; RTD: retail trade; TRM: accommodation & food services; TSP: transport; INFO: information and technology; FINI: finance and insurance; ART: art & recreational services. Only complete productivity cycles are shown.
2. Cycle [1]: FY 1994-99; cycle [2]: FY 1999-2004; cycle [3]: FY 2004-08.

Source: ABS, Cat. Nos. 5204.0 and 5206.0.55.002 and unpublished ABS data.

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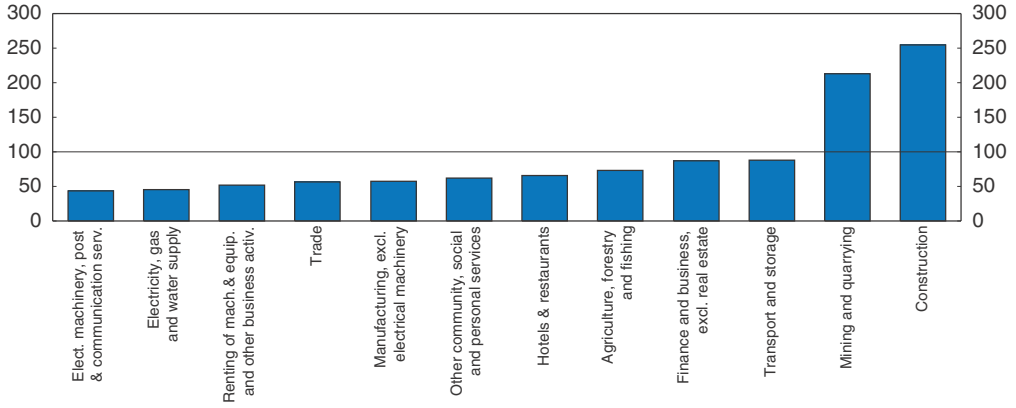
have received attention more recently, as they will be important for future productivity growth.

Boosting long-term drivers of productivity to sustain future living standards

Even if part of the slowdown is temporary, efforts are needed to raise productivity above its long-term trend if living standards are to continue to grow strongly as in the past two decades, especially if the strong terms-of-trade decline over time. Ultimately, lifting overall productivity performance hinges upon the performance of individual firms. Policies could influence such performance through initiatives to enhance "capabilities" and "incentives", in addition to increasing flexibility in responding to the structural adjustment underway (PC, 2009). There is scope for Australia to approach best practices in several sectors (Figure 21).

Figure 21. **MFP gap relative to the United States**

2007 data, USA = 100



Source: EU KLEMS, *Growth and Productivity Accounts*: November 2009 Release, updated March 2011; Groningen Growth and Development Centre, *GGDC Productivity Level Database*; OECD calculations.

StatLink http://dx.doi.org/10.1787/888932737098

Enhancing human capital is at the core of productivity growth

To boost productivity and sustain growth, education and training systems need to provide the skills required for the rapidly changing economy, although the impact of reforms in this area might take some time to materialise. Previous *Surveys* highlighted the scope to increase the capacity and responsiveness of the vocational education and training system (VET). Current VET completion rates are low with a potential adverse impact on the overall supply of qualifications, in addition to waste of public funds. Better approaches to training content and delivery are critical in this regard (PC, 2012). A more flexible apprenticeship system hinges upon effective implementation of competency-based apprenticeships, and less cumbersome and more frequently updated training packages (Hoeckel *et al.*, 2008; Expert Panel, 2011). Recent steps in this direction are welcome.

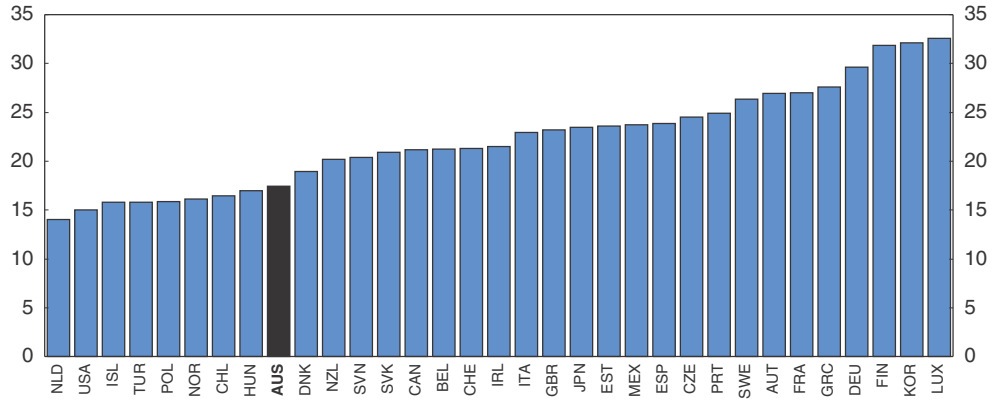
The skill reform agenda agreed in April 2011 by the Council of Australian Governments (COAG) paves the way for a more competitive and client-driven VET, with important potential productivity gains from the increase in the pool of skilled workers (PC, 2012). Enabling public providers to compete more effectively in the new environment would increase the responsiveness of the training system. Efforts to improve the quality of VET, including through an independent national regulator for the sector and the development and piloting of independent validation of assessment, are welcome and should continue. Better information flows for prospective students on the quality and outcomes of courses is also essential. The development of the *MySkills* website is a right step forward. The reskilling of the labour force and improvements in foundation skills would add to productivity gains, allowing workers to adjust better to ongoing structural changes, and current policy efforts towards this direction are welcome.

Australia's higher education system has a target that 40% of young adults hold university degrees or above by 2025. To achieve this, the cap on undergraduate student numbers was lifted in 2012. A critical challenge in the new demand-driven system, following the uncapping of places, is to maintain high quality outcomes. This increases higher education opportunities, but there is a risk that retention and completion levels may decline, raising concerns about the quality of learning outcomes. The establishment in mid-2011 of the Tertiary Education Quality and Standards Agency (TEQSA), with powers to register and evaluate the performance of higher education providers against national standards, is an important step toward quality assurance. The additional funding for universities to improve access to courses and enhance completion rates for students from less advantaged backgrounds, who tend to have lower entry scores, is also welcome. Better information for students is indispensable for the quality and efficiency of a demand-driven system and initiatives to this end are welcome.

Providing the right skills required by a rapidly changing economy is another key challenge facing the higher education sector. The cost of course delivery would need to match the funding more closely to ensure an effective supply of student places in the new demand-driven system (Lomax-Smith *et al.*, 2011). A more responsive price setting mechanism based, for example, on more frequent funding reviews or a university-driven increase in tuition fees above their current maximum level set by the government, while closely monitoring participation effects, could be considered (The University of Melbourne, 2011; Norton, 2012). It is too early to assess the potential impact of the new system on skills outcomes but some areas of under-supply, especially in science and engineering, raise concerns given their important role in boosting innovation capacity (Figure 22). Recent budget measures to address the issue are welcome (Australian Government, 2012c).

Figure 22. **Science and engineering degrees**

As a percentage of total new degrees, 2010[1]



1. Or latest available year.

Source: OECD, *Education Database*.

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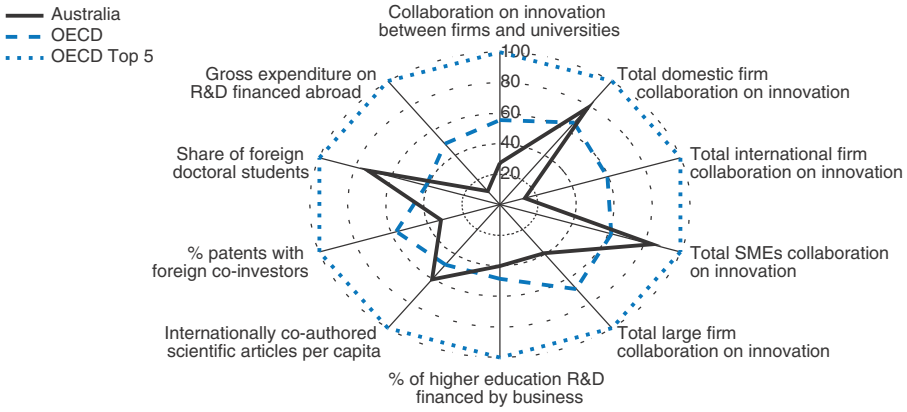
Better innovation performance is key for productivity

Australia's framework conditions for innovation, including the functioning of capital markets and market competition, rank high internationally. The innovation system compares well with other OECD countries on a number of indicators, but falls short of best practice on critical dimensions, such as investment in intangibles and "new to the market innovations". Although the low rates of "creative" innovation can partly be explained by Australia's distance from major markets and scarcity of seed/start-up venture capital, a critical weakness of the innovation system is low collaboration among large firms and firms and universities, and on an international scale (Figure 23). The former reflects the lack of a collaboration culture in Australian industry, but also shortcomings within universities. The tight links, for example, between promotion opportunities, teaching and publications can reduce incentives to do university research on industry needs (AIG, 2010).

Figure 23. **Collaboration and networks on innovation**

2010 or latest available data



Source: OECD (2012), *Main Science and Technology Indicators*; OECD (2010), *Measuring Innovation: A New Perspective* and *Science, Technology and Industry Outlook*; OECD (2009), *OECD Science, Technology and Industry Scoreboard*.

StatLink http://dx.doi.org/10.1787/888932737136

The low level of collaboration, by weakening knowledge sharing and dissemination, may contribute to the low patenting rates in Australia compared to other OECD countries. This could also be partly attributed to the large size of the services sector, where trademarks are more important (OECD, 2010b). It can also reflect the management of intellectual property (IP) by universities with a large variety of arrangements for transferring IP to firms, often within the same university, that raise transaction costs especially for SMEs (PC, 2007).

The government has set a target to double the level of collaboration between researchers and business over the next decade, supported by a number of policy initiatives. Boosting the demand side capacity of SMEs to apply and commercialise more research, is a focal point. To be effective, collaboration-enhancing initiatives need to be simple and flexible in governance and management (Commonwealth of Australia, 2008). The authorities could also consider, fiscal needs allowing, further measures to increase collaboration, such as well-designed innovation vouchers in academic contracting, as a complement to their comprehensive approach to facilitate effective connections and outcomes. To be successful, innovation vouchers need to be simple and straightforward, effectively advertised and promoted and have efficient brokering (OECD, 2010c).

In an important step forward, in 2011 the government changed the nature of the R&D regime from tax deductions to tax credits. The new system reduces complexity and aims to encourage innovation that would not otherwise occur (additionality) through a better targeting of support. A clear administrative interpretation of the new eligibility criteria and frequent evaluation of the achieved outcomes are crucial for a successful implementation (PKF International, 2011). The adoption of the Clean Energy Futures Plan in 2011, aiming to boost green innovation, is also a welcome initiative towards new commercialisation activity.

The Australian government also supports the development of venture capital which is appropriate given the market failure. The dearth of seed/start-up venture capital remains an important barrier to innovation (ABS, 2012). Obstacles to a well-functioning venture market include the limited scale of the existing venture capital industry and lack of a strong record of attracting international funds (PC, 2007). Ongoing assessment of the effectiveness of current support programmes is welcome. Overall, however, cross-country evidence suggests that there are limits to venture capital in addressing the financing gap for innovation (Hall and Lerner, 2009).

Achieving better outcomes in infrastructure will help productivity and sustainable growth

In addition to increasing the capital stock, private or public infrastructure investment can boost MFP indirectly by acting as a "vector" for the diffusion of new technologies embodied in capital (PC, 2009). Australia faces a shortfall of infrastructure which may get worse with the strong demand generated by the mining boom and expected population growth (OECD, 2010a). Well targeted and efficiently financed infrastructure projects, combined with efficient maintenance and use of existing infrastructure, are essential to meet growing demand and boost productivity. While recent reforms to enhance capacity-building are welcome, the efficiency of infrastructure development and use still have room to be improved.

Governance of the infrastructure sector is complex, with weak inter-governmental co-ordination, especially of planning at the national level (IA, 2008; OECD, 2010a). The recent establishment of Infrastructure Australia is meant to address these issues and to provide advice to governments on nationally significant infrastructure priorities and reforms, on the basis of rigorous cost-benefit analysis. The establishment in 2011 of Infrastructure New South Wales (INSW) and the Tasmanian Infrastructure Advisory Body (TIAB) should help identify and prioritise critical public infrastructure at state level. But the co-ordination and provision of infrastructure projects remain complex (IA, 2011; IA, 2012). Further initiatives at the state level to improve infrastructure frameworks, along the lines of INSW and the TIAB would be welcome. A more effective planning, focusing on strategic issues and better prioritisation of proposed projects are also important.

The need for fiscal consolidation in the coming years will constrain growth of public infrastructure investment, heightening the importance of maximising the pool of potential financing sources. This could also ensure a more efficient sharing of investment risks and promote greater productive efficiencies and innovation (Chan *et al.,* 2009). The Infrastructure Finance Working Group (IFWG) has recently called for a comprehensive approach to address the issue through an overhaul of infrastructure funding, including privatisation of selected public assets, better planning to provide a deep pipeline of infrastructure projects to boost industry certainty, and more flexible and efficient markets that attract private investment, including superannuation funds (IFWG, 2012). Attracting such funds to invest on infrastructure would require removing a number of impediments, including uncertainty with the number and size of upcoming national infrastructure projects and high bid costs (IFWG, 2011). Moreover, certain conditions for privatisation, in particular appropriate regulation, need to be in place to ensure efficiency.

Recent policy initiatives to attract greater private participation with detailed information on upcoming projects are welcome, but further reform efforts are needed. Superannuation funds could give consideration to the establishment of experienced teams of investment professionals to assess opportunities for smaller funds. Finding ways to break down large and illiquid infrastructure projects into more manageable investments could also help. Building investor capability is also essential to create the right incentives for asset managers to better look after the long-term interest (Della Croce *et al.*, 2011).

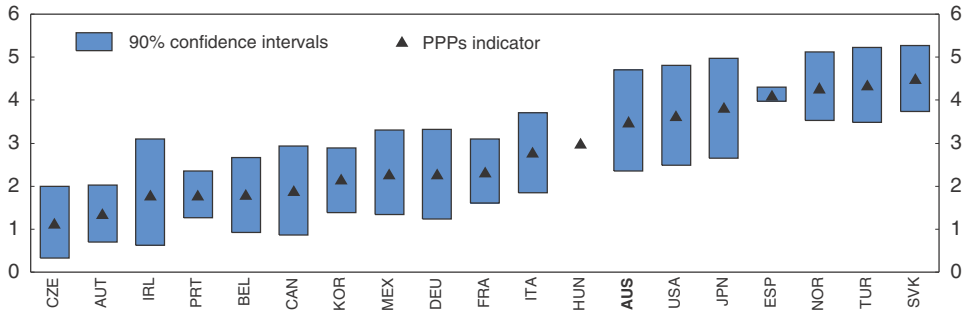
There is also scope for improving policy settings and expanding the use of Public Private Partnerships (PPPs) to finance public infrastructure through improvements in the policy setting (Figure 24). Removing remaining barriers to competition and efficiency in the procurement of PPPs, arising for example from excessive information and documentation requirements, would help (KPMG, 2010). Ongoing reform efforts to enhance the effectiveness of PPP processes (including through standardisation of contractual requirements) and improve approaches to managing forecasting and demand risks should continue. A more flexible approach to the allocation of risk between public and private sectors, as suggested by IFWG, would help in making infrastructure more attractive to the private sector. It needs to make sure, however, that such an approach is balanced and does not simply result in all project risks being ultimately transferred to taxpayers.

Efficient pricing for infrastructure services is essential for boosting competition, productivity and sustainability

The application of user charges in the transport sector should be broadened. The current charging regime for heavy vehicles, which involves registration fees and fuel-based

Figure 24. **Indicator values of PPP policy settings**[1]

Indicator scale index of 0-6 from most to least conductive to efficient investment



1. The indicator is calculated for the 19 countries that provided a sufficient number of answers on PPPs in an *ad hoc* OECD questionnaire on infrastructure investment. The figure gives the average indicator value and 90% confidence intervals, which are calculated using random weights.

Source: Ad hoc OECD Questionnaire on infrastructure investment, cited in OECD (2010), *Economic Policy Reforms: Going for Growth*, OECD Publishing, Paris.

StatLink http://dx.doi.org/10.1787/888932737155

charges for road use, inhibits the efficient use and investment in the road network. The charges do not accurately reflect actual road wear arising from the mass, distance travelled or types of roads used by a vehicle (CRRP, 2011a). This results in significant cross-subsidies between various types of vehicles and infrastructures. Findings of a feasibility study for introducing more direct pricing options supports a staged move to charging heavy vehicles for road use, with the initial focus on biggest vehicles (CRRP, 2011b). Progress to introduce location-specific and time-varying congestion charges for road infrastructure has made little progress so far. Reducing the levels of transport congestion in large cities would increase productivity and promote greener growth. Infrastructure Australia suggests that small shifts in traffic levels of around 6-7% could have an appreciable impact on congestion levels (IA, 2011). Critical for the successful implementation of congestion charges is to get the policy accepted. Developing public transport would be important in this regard.

Enhancing the efficiency of the energy market would boost growth, while preserving the environment. Price controls remain an important area of unfinished business in energy reform, with all jurisdictions, apart from Victoria, continuing to cap electricity tariffs for households and SMEs. Faster progress towards removing retail price regulation would encourage consumers to respond to the true production costs, as the effectiveness of any carbon price signal is conditional on its reaching consumers (Hepworth, 2010). Swifter progress towards installing advanced metering infrastructure ("smart meters") is also critical, as it would allow better demand management through time-of-use pricing (CRC, 2011).

A major regulatory issue in the energy sector regards the development of an electricity transmission network capable of facilitating increases in renewable energy. The electricity rules were amended in June 2011 to help potential investors making informed decisions. Some analysts expressed doubts, however, as to whether the new provisions address the shortcomings of the current framework, as high costs of network extension will continue to act as an obstacle to investment (Wright, 2012). It is still too early to evaluate the impact of the new provisions.

Swift implementation of regulatory reforms is required

Regaining momentum with regulatory reforms has also a large potential for boosting productivity. The Council of Australian Governments (COAG) has agreed in 2008 to a wide-

ranging regulatory reform to deliver a seamless national economy and increase productivity. Implementation has moved forward with three quarters of the entailed reforms being "on track" by the end of 2011 (CRC, 2011). Some areas of reforms however lag behind, including in the energy sector. Regarding business regulation, much scope for harmonisation across the states remains in areas such as legal professions and occupational licensing. Such reforms could result in significant reductions in the cost of red tape according to Productivity Commission estimates (PC, 2012). In April 2012, COAG announced its priorities for a new regulatory and competition reform agenda to be supported by a national productivity compact between governments and businesses. The aims include streamlining state and federal environmental approval processes as well as major development approvals and further energy market reform. Swift endorsement and implementation of the agreed plan would be desirable. Further improvements to regulatory harmonisation, mutual recognition and institutional co-operation between Australia and New Zealand, under the Closer Economic Relations agreement and the Single Economic Market agenda, could yield additional economic gains (OECD, 2011b). A joint study to be conducted by the Productivity Commissions of the two countries will identify options for further reforms which could boost efficiency, increase competitiveness and strengthen further economic integration.

Box 5. **Recommendations for enhancing productivity performance**

- Implement competency-based apprenticeships in line with the skills strategy. Proceed with efforts towards developing strong quality assurance mechanisms for training.
- Ensure improved information for prospective tertiary students on course quality and outcomes. Monitor completion rates and learning outcomes in higher education following the uncapping of places in universities. The funding arrangements in the new system should ensure an effective supply of student places.
- Programmes to support collaboration and networking between universities and businesses should be simple and flexible to reinforce their impact on innovation.
- Consideration should be given, fiscal savings allowing, to further measures to increase collaboration between researchers and business, such as the provision of well-designed innovation vouchers for contracting academic research as a complement to government's comprehensive approach to facilitate effective connections and outcomes.
- Improve infrastructure outcomes by reducing the complexity of governance and provision of infrastructure investment and ensuring a more effective planning. Remove barriers to private participation in financing investment infrastructure. Continue efforts to increase the effectiveness of public-private partnership processes and improve approaches to managing risks of such projects.
- Broaden the use of road user charges. Introduce location-specific and time-varying congestion charges for road infrastructure in large cities. Move towards more cost reflective prices in the water sector. Install advanced metering infrastructure ("smart meters") for electricity to promote energy-efficient consumption choice.
- Implement fully the agreed reforms under the COAG agenda for a seamless national economy. Move towards a national approach to developing and paying for transmission networks. Harmonise regulation for legal and other professions and occupational licensing. Intensifying the trans-Tasman relationship would reduce spatial transaction costs and facilitate carrying out increasingly complex regulatory functions through greater economies of scale.

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ANNEX A.1

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* (November 2010)
Labour markets	
Raise the participation 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.	Reforms have included further reduction of personal income tax for low income earners in the 2012-13 budget, phasing out of tax offsets for dependent spouse since July 2011, changes in income support for single parents as from 2013.
● Introduce tighter eligibility criteria for existing recipients of Disability Support Pension (DSP) and Parenting Payments, in line with those introduced for new applicants in July 2006. Tighten participation requirements for access to Parenting Payments for parents with young children.	Since July 2012, the Government has introduced participation requirement for DSP recipients aged under 35 years with an assessed work capacity of 8 hours or more per week and increase the number of hours recipients can work and remain eligible for DSP. There are also higher wage subsidies for employers hiring people with disability.
● Proceed with the announced introduction of paid parental leave scheme in 2011.	The Paid Parental Leave scheme provides financial support to eligible working parents of children born or adopted from 1 January 2011.
● Make the child care benefit more conditional on employment or job search of parents, except when children face multiple disadvantages.	Child Care Benefit (CCB) is available to families for up to 24 hours' approved care per child per week, without a participation requirement. Providing 24 hours care per child per week without a participation requirement helps low-income and disadvantaged families access care. However, to claim CCB for more than 24 hours of child care per week, the family must be undertaking at least 15 hours of work, study, training or job search activities per week.
● The new system of employment services needs to provide balanced incentives for service providers to place unemployed clients from all streams. The training programmes need to be frequently monitored.	The new employment service system (Job Service Australia), introduced in 2009, identifies needs of the job seekers at the outset and steers them upon their arrival to one of the four level of assistance offered.
● To improve the safety net for the unemployed, consider raising, the Newstart Allowance for a limited-duration, the fiscal situation permitting. Maintain job-search requirements for benefit eligibility, with credible sanction regime in case of non compliance. .	In recent budgets additional assistance has been provided to those on Newstart, including a new Supplementary Allowance, and Clean Energy Advance payments. Recipients with earnings may also benefit from increase in tax-free threshold. There has also been increased support for recipients with children through increased family payments.
Maintain labour market flexibility:	
● Ensure that labour market reforms preserve collective bargaining at the firm level and that the new industrial relations system maintains adequate wage differentiation by not extending collective bargaining beyond the company level.	A review of the Fair Work Act 2009 released in August 2012, did not propose any changes to the level at which collective bargaining occurs. While finding that the Fair Work Act was broadly operating as intended, the Review made a series of recommendations, some of which are aimed at improving workplace productivity and others to increase workplace equity, consistent with the objectives of the legislation. The Government has undertaken to consult widely in developing its response to the Review.

Recommendations	Action taken since the previous *Survey* (November 2010)
• Consider introducing a system of employment-related benefits in parallel with more moderate minimum wage increases to avoid exclusion of vulnerable and low-skilled workers	Minimum wage increases have been moderate. Low income earners have benefited from recent increases in tax-free threshold and there is a new wage subsidy for VLTU.
Address supply constraints through migration:	
• Ensure adequate use of immigrants' human capital. Reduce the complexity of the current assessment and recognition of overseas qualifications.	The marked shift towards demand-driven migration since 2009 seems to have contributed to reducing the incidence of over-qualification of immigrants, especially non-English speaking migrants from OECD countries.
Taxation	
• Lower the high effective marginal tax rate on low-income households by increasing the tax-free threshold. • Proceed with the rationalisation and simplification of the income support system to avoid cascading and cumulating multiple withdrawal rates. • Further reduce the corporate tax rate. • Royalties should be eliminated rather than credited to mineral resource rent tax (MRRT) payers. Broaden the MRRT coverage to all commodities and all companies, irrespective of their size. • Reduce subsidies to the automotive industry and to the farm sector which are ineffective and encourage poor management practices. • Streamline and reform state-federal taxation. Consider either reducing substantially or removing payroll taxes, and insurance levies. Lower conveyance duties to a level that covers registration costs to reduce transaction costs. • Broaden the land tax by ending existing exemptions on owner-occupied housing and. remove its progressivity. • Review the cost effectiveness of the deductibility of mortgage interest payments against income ("negative gearing"), for stimulating rental supply and new constructions • Consider raising the yield for the GST by increasing its rate and broadening its base.	Household income tax threshold has been raised since July 2012 as a counterpart to the introduction of carbon pricing. To ease the tax burden on businesses and SMEs, in particular, the authorities have introduced more generous amortization rules and the possibility to "carry back" losses to offset past taxable income. The authorities have committed to reducing the corporate tax rate. A Business Tax Working Group will release a report by end-2012 concerning the potential room for lowering this tax with proposed offsetting measures to fund it within the business tax system.
Macroeconomic policy framework	
• Proceed with the creation of an independent Parliamentary Budget Office, (PBO) with a clear mandate, adequate resource, access to information and accountability. • Disconnect public spending decisions from fluctuations in tax revenues caused by commodity price movements. Consider creating a reserve fund endowed with all resource tax revenues, which would be used on a sustainable basis.	An independent PBO with a staff of some 25 to 30 persons is operational since July 2012. Its main function is to evaluate the costs of proposals put forward by political parties during elections, put price tags on MPs' suggested reforms outside of electoral periods. The PBO has access to Treasury's information and statistical resources and can publish its own research Provisions have also been made to ensure that the PBO is accountable for its evaluations.
Relax barriers to foreign direct investments	
• Apply to other countries the lighter screening procedures granted to the United States. Involve specialist agencies (*e.g.* national security) in the screening procedure to enhance transparency.	No action taken.
Boost housing supply	
Each State and Territory Government should: • adopt more transparent, harmonized and less restrictive zoning and planning regulations across jurisdictions. Consider adopting special rules to fast-track land-release mechanisms and development assessments in local housing markets with excessive pressures. • rationalise infrastructure charges with nationally consistent principles to improve their transparency. Existing "betterment" taxes should be eliminated. • phase out subsidies to housing demand benefiting first-home buyers.	Some measures have been taken to boost housing supply. Some states (*e.g.* Victoria and South Australia) have accelerated the release of greenfield land in 2010 and 2011. To streamline the land development process Most states have established a centralised authority, which is acting as a coordinator between the multiple government agencies and the infrastructure providers involved. In some areas (*e.g.* Sydney and Brisbane) efforts have been made to cap infrastructure costs financed by developers. Some states (New South Wales and Queensland) have agreed to abolish First Home Owners Grants for the purchase of existing dwellings.

Recommendations	Action taken since the previous *Survey* (November 2010)
Product market competition	
Improve competition and regulation:	
• Address the unfinished business of the National Competition Policy agenda as planned in the National Reform Agenda. • Speed up the harmonisation of regulations between the states and strengthen mechanisms for mutual recognition of regulatory standards.	According to the COAG Reform Council's assessment of the *National Partnership Agreement to Deliver a Seamless National Economy* reforms for the period 2008-09 to 2010-11, 37 components of the regulatory and competition reforms are on track, but 12 are at risk. In April 2012, COAG announced its priorities for a new regulatory and competition reform agenda, to be supported by a "national productivity compact" between governments and businesses, aiming among other reforms to streamline state and federal environmental approval processes and deliver further energy market reforms.
Expand the supply of freight services and improve co-ordination and use of infrastructure:	
• Further 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. • Extend AusLink Nation Building Program to the port sector. • Implement a road freight pricing scheme that takes into account the intensity of network use and place of use. • Consider reforming arrangements for managing and funding road infrastructure. Give more financial responsibility and adequate resources to the local jurisdictions to cover the operating costs and investment needs of their road networks. • Introduce location-specific and time-varying congestion charges in large cities. Use the resources collected to improve public transports	Single national regulators will be operational for rail safety and investigation, maritime safety and the heavy vehicles by 2013. The 2010-11 budget included investments in ports. A national ports strategy released by Infrastructure Australia and has been signed off by COAG in April 2012. A feasibility study for introducing a new road freight pricing system and on the future funding arrangements for roads was considered by COAG out of session in July 2012.
Promote competition in postal services.	
Develop a nation-wide energy market responsive to environmental objectives:	
• Harmonise safety regulations across states and eliminate legal obstacles to exploration and development of gas deposits.	A review of derogations in energy market legislation is intended by June 2014. The development of a nationally harmonised energy supply industry safety framework is underway.
• Pursue the privatisation of companies still under government control.	Legislation that will privatise New South Wales power generators is set to pass through Parliament in 2012.
• Remove the ceilings on retail electricity prices rapidly.	
• Install "smart meters" for electricity more widely to improve demand management.	Smart meters are being rolled out in Victoria, with the installation process expected to be completed by 2013. Trials are also being conducted in most other states. A national framework to support the use of smart meters is under development.
• Clarify the measures to reduce greenhouse gas emissions.	The government introduced a carbon pricing in July 2012, with a fixed price, for three-year period, followed by a flexible one, based on emissions trading system linked to international markets.
Expand and improve the supply of broadband Internet access:	
• Consider a functional separation between the management of broadband access infrastructure and marketing activities.	In February 2012, the Australian Competition and Consumer Commission approved the structural separation of Telstra between the management of its copper network and its other commercial activities.
Improve water management:	
• Continue work aimed at defining homogenously the concept of sustainable exploitation across states. Correct over-allocation of water entitlements. Lift the quantitative restrictions on trades in permanent water rights. Publish transaction prices. Abolish the exit fees limiting trading between districts. Lift barriers to trade between rural and urban areas.	Ongoing water reforms, underpinned by the National Water Initiative (NWI), aim to tackle over-allocation in Murray-Darling Basin (MDB), including through a AUD 3.1 billion buyback of water entitlements. The 4% annual upper limit on out-of-area trade of water entitlements is scheduled to be removed in 2014. Exit fees (tied to entitlement sales) are no longer permitted in MDB.
• Continue the reforms of water charging to ensure full cost recovery, including management and planning costs. Abolish subsidies to infrastructure projects.	The NWI aims to price water efficiently, including through best water pricing, which entails consumption based pricing and full cost recovery for water services. Implementation varies across states.
• Consider putting an end to the public monopolies of urban water management.	Steps were taken to enhance competition in the supply of urban water and related services, including through increased competitive provision of inputs and increased information on service performance.

Recommendations	Action taken since the previous *Survey* (November 2010)
Public infrastructure	
• Further improve infrastructure selection process by: publishing systematically the outcomes of cost/benefit analyses; making independent evaluation mandatory for investment projects exceeding a certain amount; and creating a reference centre able to help agencies involved in the analyses to shore up their works.	The 2011-12 budget requires the publication of IA cost-benefit analyses and the evaluation of projects funded by the federal government after their completion.
• Improve the regulatory framework for private investment through a detailed assessment of the implementation of the national access regime.	COAG agreed in August 2011 on a review of the national access regime, commencing the latest by end-2012.
Education and training	
Early Childhood Education and Care (ECEC):	
• Move towards a more integrated ECEC system. Reform the current staffing regime, bridging the split for pre-school teachers and staff for child care. Proceed swiftly with the development of a more streamlined accreditation system.	A National Quality Framework commenced in January 2012, applying a single set national quality standards for ECEC. It provides a formal base comparable to the other sectors of education, including curriculum development and improved staff to child ratios.
• Enhance access to ECEC services, while ensuring quality. In the longer term, fiscal circumstances allowing, consider extending universal access to three year-olds, focusing initially on disadvantaged groups, and increasing the duration of services.	The government committed to provide access to quality early childhood education program for all children before formal schooling by 2013. This education will be delivered for 15 hours a week, 40 weeks a year. In the longer term, the government also considers expanding early childhood programs to the 3-year olds.
School education:	
• Broaden the secondary school curriculum to reduce the risk of early school leaving and integrate the vocational education and training sector better.	The delivery of the Trade Training Centres in Schools Program is providing more secondary students with access to vocational education and training. The implementation of the National Trade Cadetships program will further integrate vocational education in the school curriculum.
• Develop and implement a national curriculum. Adopt a common final certificate and eliminate differences in the basic structure of schools.	The development of the Australian Curriculum from Foundation to Year 12 is progressing. The 2012-13 budget provided funding over the next four years for the Australian Curriculum, Assessment and Reporting Authority for curriculum development, monitoring and evaluation.
• Continue strategies to counteract disadvantage, including reforming the school funding mechanisms to better take into account the impact of students' socioeconomic background.	The Smarter Schools National Partnerships target additional resources to the most disadvantage schools. The government has also announced the introduction of a new national school funding system that will be phased in between 2014 and 2019. It will be based on individual student needs and be tied to improving standards. Relevant legislation is set to be submitted to Parliament by end-2012.
• Move towards a less centralised management and governance structure for schools.	The National Plan for School Improvement envisages greater powers for principles to set budgets and select staff. This will build on the existing Empowering Local Schools initiative which is supporting increased and more effective local decision-making in 927 government and non-government schools.
• Change the system of teacher career progression to help keep the best teachers. Create appropriate incentives to re-allocate high quality teachers where they are needed most.	The Smarter Schools National Partnerships help to ensure that highly performed teachers are recognised and rewarded in schools in low socioeconomic areas. The Rewards for Great Teachers National Partnership seeks to recognise those teachers who achieve certification at the highest levels of the National Professional Standards for Teachers with a one-off reward payment.
Vocational Education and Training (VET):	
• Update training packages regularly to meet changing skill needs. Lift the completion rates of VET.	Recent reforms of the Australian Apprenticeship System include a restructuring and streamlining of Training Packages.
• Train and upskill persons already in work, particularly older workers.	Steps were taken in the 2011-12 budget to support a greater uptake of competency-based progression in apprenticeships and for mentoring. The National Partnership Agreement on Skills Reform (NPASR), agreed by COAG in 2012, places an increased emphasis on lifting VET completion rates. Skill Connect service links enterprises with a range of skills and workforce programs and funding. The creation of the National Workforce Development Fund will support employers to provide training. Oversight will be provided by the new Australian Workforce and Productivity Agency formed on 1 July 2012, replacing and expanding the role of Skills Australia.

Recommendations	Action taken since the previous *Survey* (November 2010)
• Move towards a more commercial governance model for the institutes of Technical and Further Education (TAFE). • Reform the funding mechanism of VET to foster competition among providers.	Most of the States are engaged in reviewing public VET governance arrangements. NPASR, promotes a more competitive and client-driven system by allowing students to enroll to the course or institution of their choice.
Higher education:	
• Remove barriers to higher education for students from disadvantaged socioeconomic backgrounds.	The Higher Education Participation and Partnerships Program provides funding to universities to implement strategies that improve access to higher education for students from low socio-economic backgrounds.
• Make the higher education system more responsive to labour market needs and more demand oriented, with financing following students. • Improve quality of teaching and learning.	From 2012 Commonwealth support will be available to all domestic undergraduate students accepted into an eligible higher education course at a public university.
• Reduce the complexity in regulation arising from share responsibilities for the sector of Commonwealth and state governments.	The Office for Learning and Teaching aim to enhance academics' teaching skills. The Tertiary Education Quality and Standards Agency, in operation since July 2011, registers and evaluates the performance of higher education providers against national standards.
Health care, disability and social services	
• Increase resources for preventive medicine. Improve the supply structure for elderly care and care for mental illness. Reduce hospital costs by promoting primary care interventions. Consider bolstering the federal government's monopsony power over hospitals in areas where competition is possible between multiple health care providers.	Initiatives in the 2011-12 budget aim at improving access to primary health care for people with mental illness and increase the accountability and transparency in the mental health system. The 2012-13 budget entailed further funding for mental health care as part of a Ten Year Roadmap for Mental Health Reform.
• Improve disability services, especially for people with mental illness. Reduce the fragmentation and complexity of the system. Develop a national system of quality assessment. Move swiftly to a person-centred approach to disability services • Adopt an individualised approach to the provision of services for people with multiple disadvantages. Improve co-ordination among the various groups responsible for the delivery of such services. Engage the disadvantaged groups at an early stage of process to adequately respond to their demand. • Continue efforts to reduce homelessness. Shift to a system of market rents and income-related rent-subsidies in public housing. Consider increasing the generosity of rent assistance.	The National Disability Insurance Scheme, announced in the 2012-13 budget, will provide individualised care and support based on a person's need and increase formal care services including in home support and early intervention services.

Chapter 1

Adjusting to the mining boom and Asian development

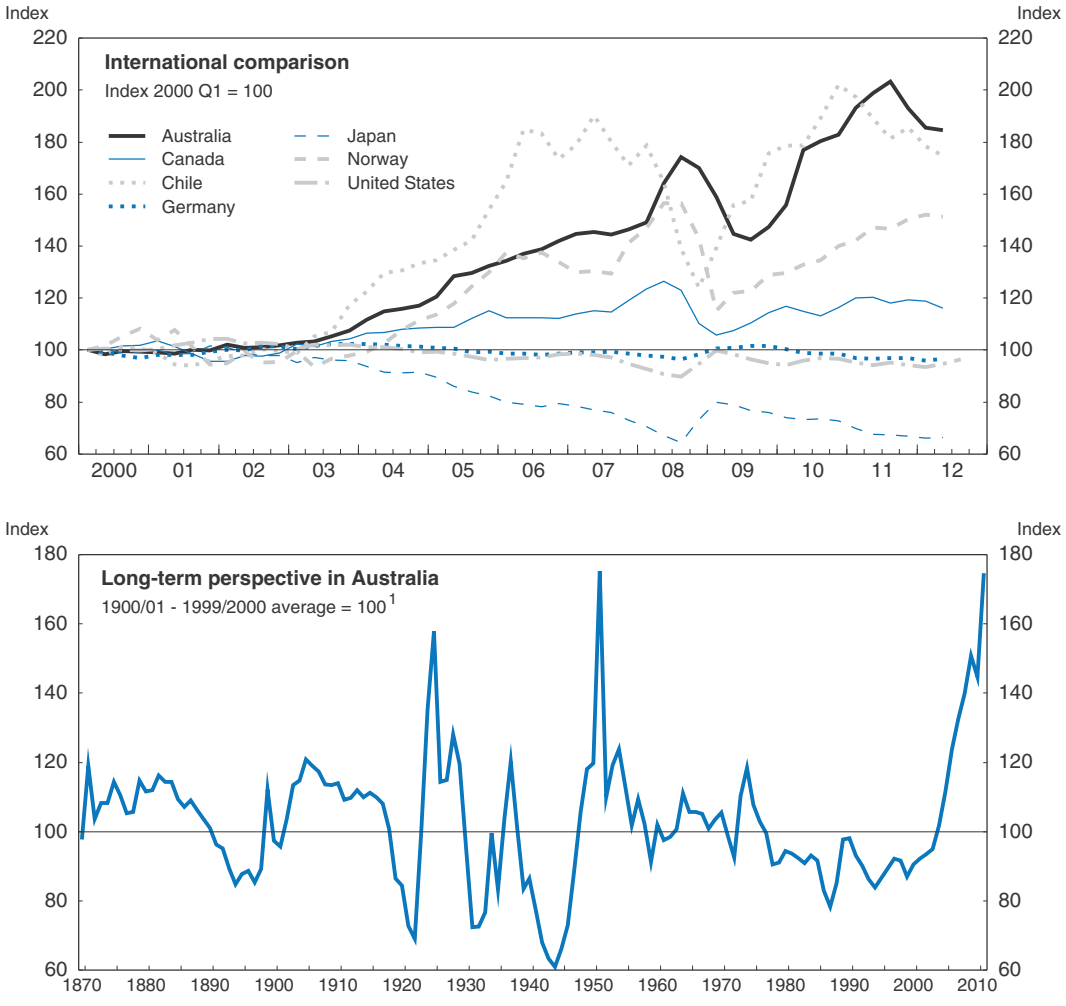
Australia has been adjusting to substantial economic structure changes linked to historically strong terms of trade, the boom in the mining sector and a very high real exchange rate. All these developments are linked to rapid growth in Asia, especially China, and the resulting demand for raw materials. They have had far-reaching effects on the economy through sharp income growth, strains on productive capacity that could affect macroeconomic stability and substantial structural changes, both sectorally and regionally, due to the geographical concentration of mining activities. Since the beginning of the recent mining boom, the challenges of the so-called multi-speed economy have taken centre stage in the Australian economic debate.

The country's adjustment to the mining boom has so far produced favourable results, even as it has imposed significant strains, in particular in the non-mining tradable sectors. The development of Asia offers challenges and opportunities beyond terms-of-trade developments, as the gradual emergence of a huge middle class with potentially large demand to be satisfied will expand markets and open new ones. To take full advantage of these ongoing changes, a smooth reallocation of resources in the economy should be encouraged. The medium-term fiscal strategy should take better account of the likely increase in the economy's volatility and its greater dependence to the fluctuations of the terms of trade. Tax reforms have a useful role to play in facilitating the ongoing structural adjustments, while it is essential to maintain a flexible labour market.

The effects of and response to the shock

The shock to the economy from the rising terms of trade is large, not only from a historical standpoint but also in comparison with other countries (Figure 1.1). This is the third sharpest terms-of-trade increase for an OECD country since 1960, after those of Chile (between 2001 and 2011) and Norway (between 1998 and 2008). Moreover, the rise would appear longer-lasting than similar episodes in Australia in the past. While boosting income and output growth, the shock is also a potential source of strains, both in terms of macroeconomic management and the impact on resource allocation.

Figure 1.1. **Terms of trade**



1. Calendar year prior to 1900, financial year thereafter.

Source: RBA and OECD, *OECD Economic Outlook Database*.

StatLink http://dx.doi.org/10.1787/888932737174

The macroeconomic effects of the shock were well managed

The global commodity price boom has increased Australia's comparative advantage in the resource sector. The most immediate direct effect was a boost to mining export revenues and a shift of Australian exports from the United States and Europe towards Asia, and in particular China. Capital expenditure in the mining sector has tripled since 2003, to about 4% of GDP in 2011, and it is expected to double again to more than 8% of GDP in FY 2012/13 (ABS, 2012). As a result, export capacity can be expected to expand by 50% by 2015 for iron ore and by 20% by 2013 for coal (Christie *et al.*, 2011). A tripling of export capacities in the liquefied natural gas (LNG) sector, which accounted for half of aggregate mining investment projects at end-2010, is also expected (Connolly and Orsmond, 2011).

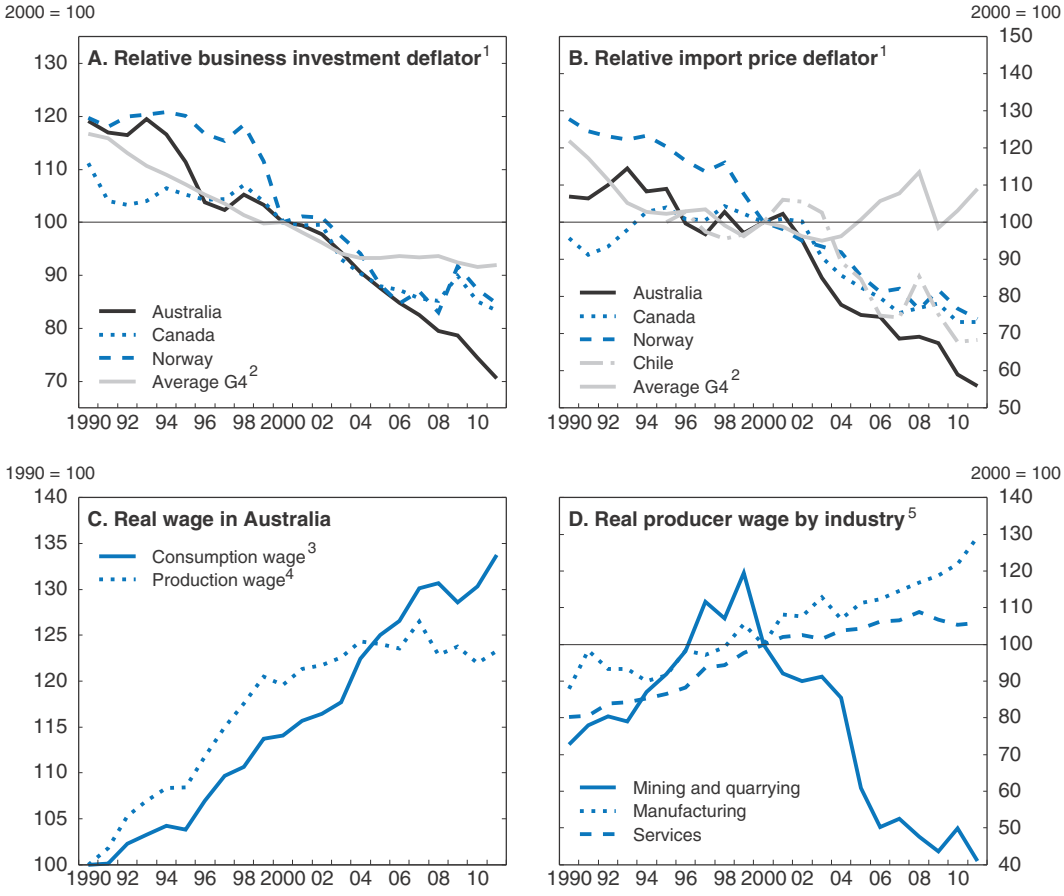
The commodity price boom also had substantial repercussions on the overall economy through rising incomes, and through spending by the mining sector and by states rich in natural resources. Roughly half of the increase in income and capital investment by mining firms benefited the economy directly, for example, through purchases of local goods and services (Connolly and Orsmond, 2011). However, this was concentrated sectorally, since the sectors that benefited directly from the expansion of the mining industry and, in particular from the investment boom, accounted for about 7% of GDP in FY 2010/11 (Gruen, 2011). Coupled with the high exchange rate, this has deepened sectoral growth disparities, thereby accentuating the potential for a two-speed economy. The mining industry and related sectors, which represented around 17% of GDP in 2011, contributed 12% on average to non-farm GDP annual growth before the boom, which increased to 27% between 2004 and 2007, and over 50% in FY 2010/11.

The boom also had spillover effects on the economy. Incomes are boosted by lower import prices and exchange-rate appreciation (Figure 1.2, panels A and B). *A second effect* is related to the fiscal policy, because of an immediate redistribution through tax cuts or new public expenditure of most of the additional tax revenue derived from the terms-of-trade gains, especially during the first phase of the boom between FY 2002/03 and FY 2007/08 (OECD, 2008). *A third effect* was massive job creation in the service sector. As predicted by theory, this has been the sector most favoured by the combination of domestic demand generated by higher incomes and the substantial changes in relative prices, including weaker growth of real production wages (Figure 1.2, panels C and D).

A growing number of firms in the tradable non-mining sector, from manufacturing, tourism and education sectors, need to adapt, primarily because of their declining competitiveness and rising real exchange rate (Figure 1.3). Manufacturing export growth has come to a standstill since 2000. The comparison of production performance in this sector between Australia, Canada and Norway shows the differentiated influence of exchange-rate movements in these countries since the beginning of the mining boom. The real effective appreciation of the Australian and Canadian currencies has contributed to a more rapid decline in the manufacturing sector than in Norway, where the real exchange rate has remained stable. Moreover, growth in employment and capital investment has weakened in manufacturing relative to the rest of the economy since 2007, suggesting that strains on this sector have intensified (Figure 1.3).

While the appreciation of the real exchange rate has imposed significant pressures on some sectors, it is unclear how its level compares with equilibrium, which depends on the fundamental determinants of the currency and is difficult to measure in practice (Garton *et al.,* 2012). On the one hand, purchasing power parity indicators show that, in 2011, the

Figure 1.2. **Relative price changes**



1. Deflated by the GDP implicit price index.
2. France, Germany, Japan and the United States.
3. The consumption wage is defined as the compensation per employee deflated by the private consumption price index.
4. The production wage is defined as the compensation per employee deflated by the GDP implicit price index.
5. Sectoral wages divided by industry output prices.

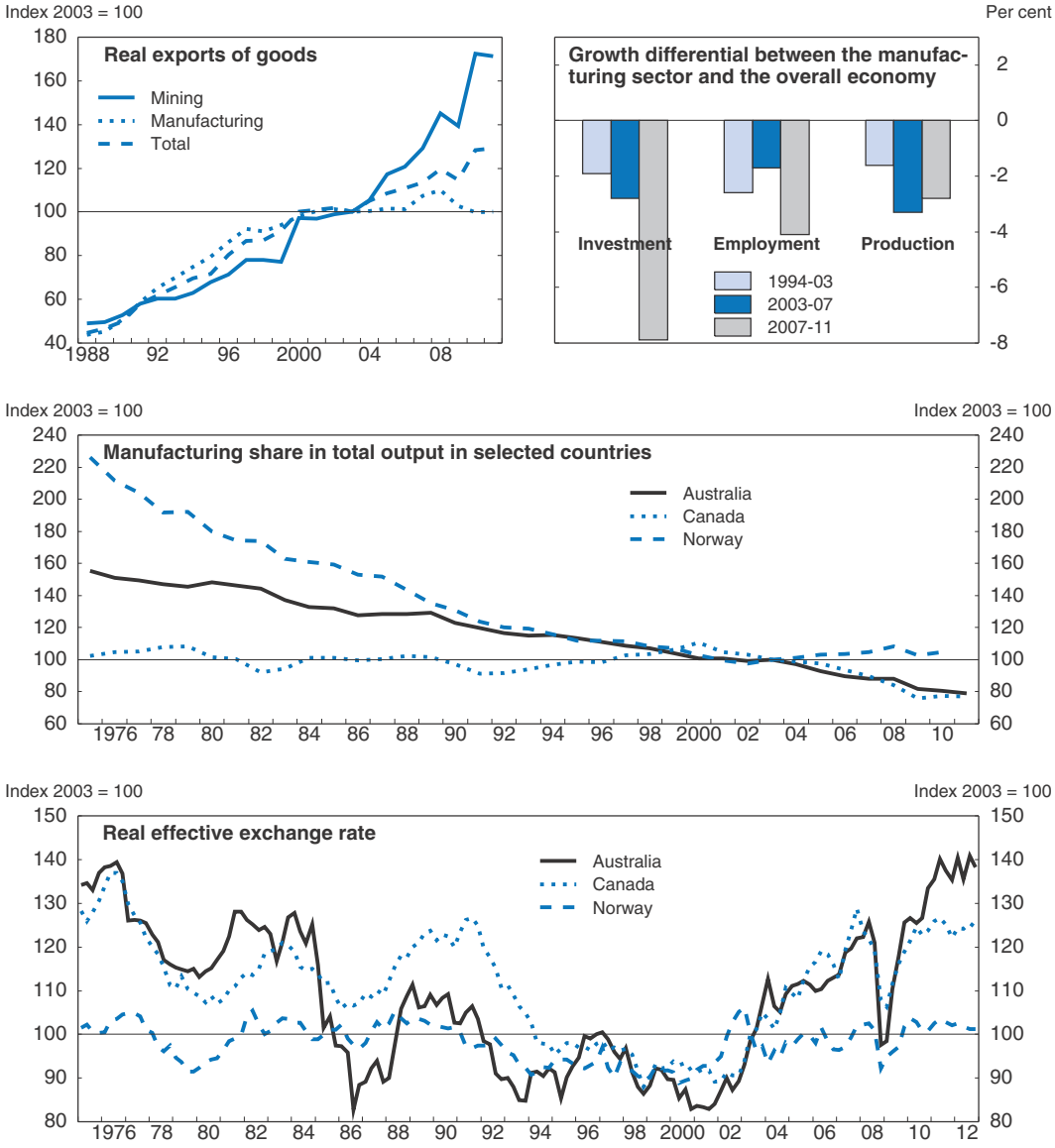
Source: ABS, Cat. No. 5204.0; OECD, *OECD Economic Outlook and STAN Databases*.

StatLink http://dx.doi.org/10.1787/888932737193

price level (measured by the GDP deflator) was the third highest in the OECD after Norway and Switzerland, about 50% above the area average. IMF's estimate also suggests a possible overvaluation of the Australian real effective exchange rate by 10-20% from a medium-term perspective based on external sustainability and macroeconomic balance approaches (IMF, 2011). However, these estimates are subject to considerable uncertainties, as recognised by the IMF itself.

According to the RBA, the Australian dollar is somewhat overvalued, but not substantially so judging by the good overall performance of the economy (RBA, 2012). The real exchange rate equilibrium has most likely increased to absorb the additional demand which is generated by the higher terms of trade and the exceptional mining boom. This appreciation is also consistent with the higher rate of return on capital investment in the resource sector. Additional factors which have boosted the currency include the change in perception of risk-adverse investors who seem to view the Australian dollar as a safe haven at a time when interest rates are higher than in many other OECD countries (see below).

Figure 1.3. **Manufacturing sector performance**



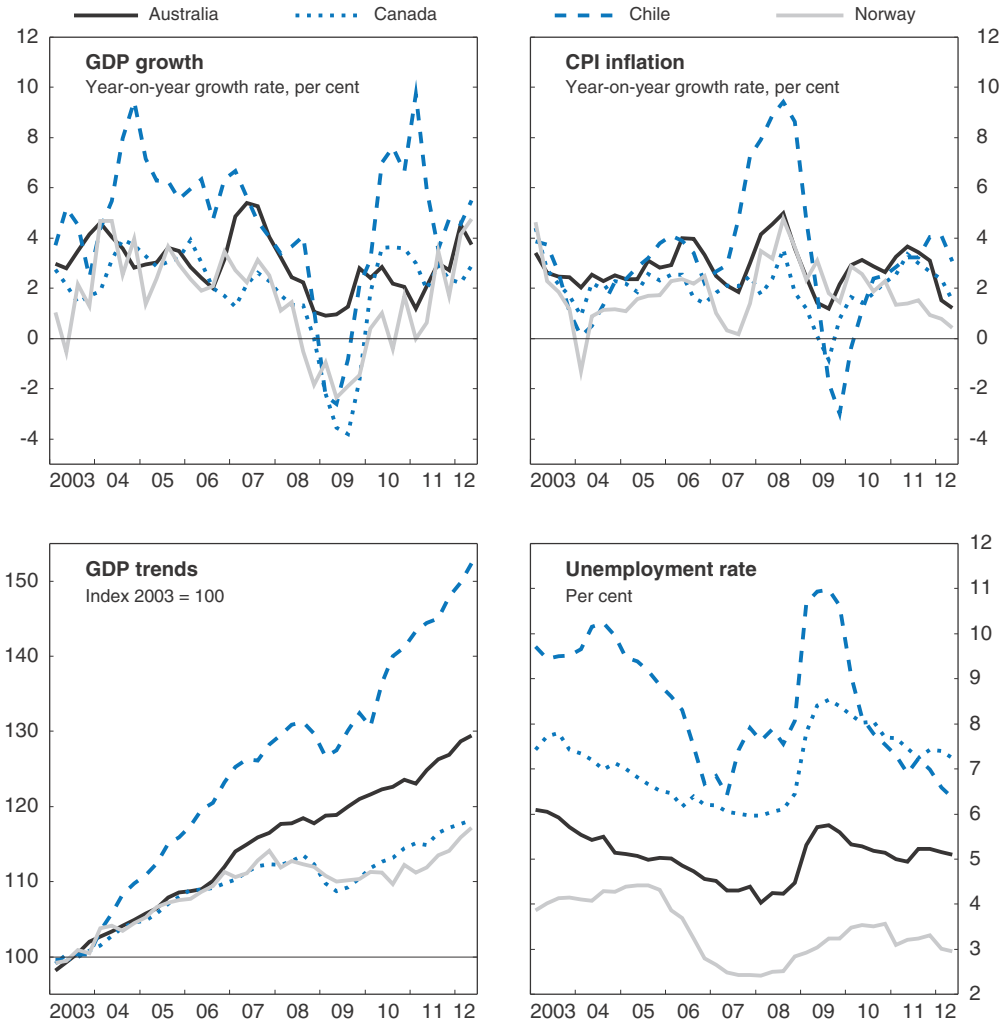
Source: ABS, Cat. Nos. 5204.0 and 6202.0 and OECD, *OECD Economic Outlook Database*.

StatLink http://dx.doi.org/10.1787/888932737212

Thanks to the robust macroeconomic policy framework, including the flexible exchange-rate mechanism in force since 1984, the nominal exchange rate appreciation has curtailed the pressures exerted by stronger demand on relatively rigid short-term supply. This powerful stabilising force, together with flexible labour and more competitive product markets, contained inflation, maintained solid and stable growth and kept unemployment low. Overall, the macroeconomic effects of the recent terms-of-trade shock have thus been better managed than during similar past episodes, which were characterised by macroeconomic instability and higher inflation (Gruen, 2011).

The volatility of growth, unemployment and inflation has also been on average lower than in other OECD mining countries (Figure 1.4). Australia, Canada, Chile and Norway were subject to a similar terms-of-trade shock, albeit of varying intensity, but did not

Figure 1.4. **Economic performance of resource-rich OECD countries**

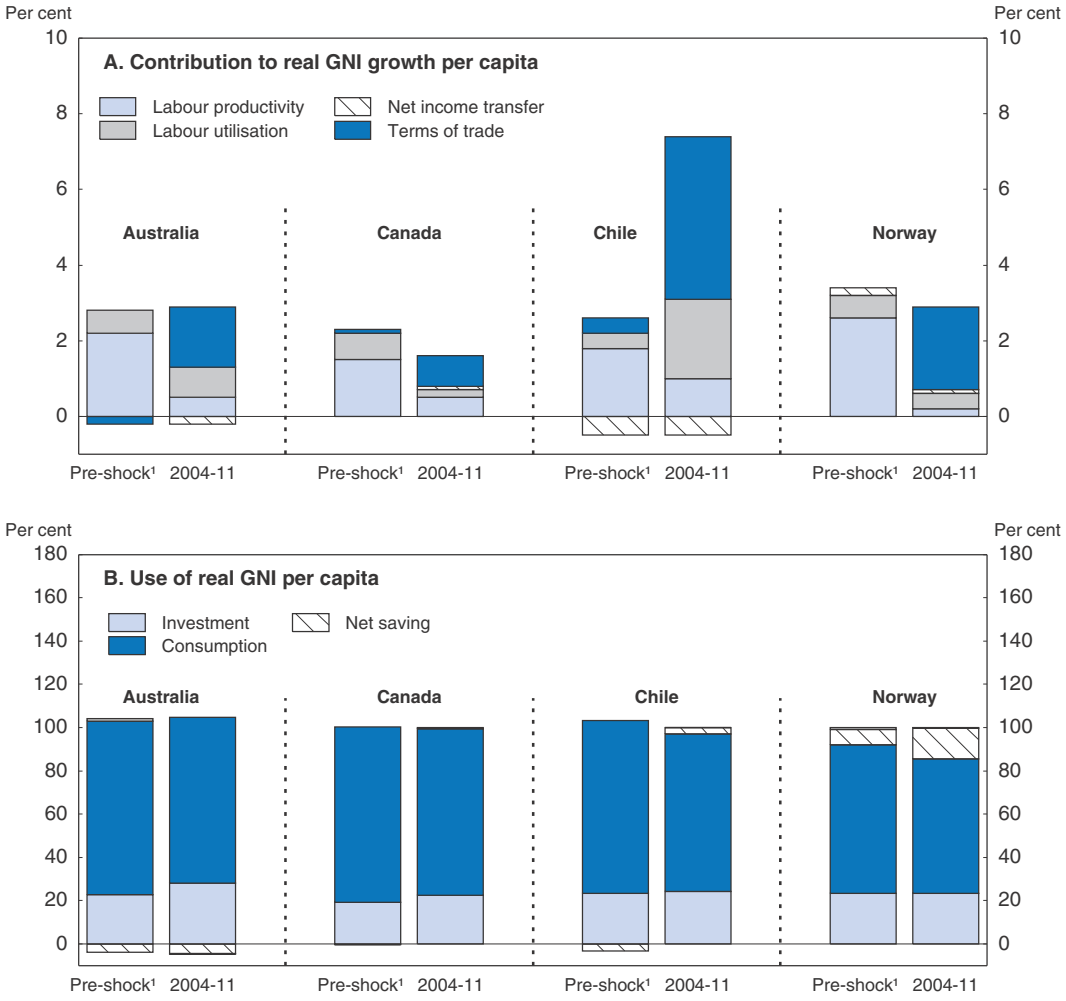


Source: OECD, *OECD Economic Outlook Database.*

StatLink http://dx.doi.org/10.1787/888932737231

manage the shocks in the same way (Figure 1.5). Australia and Canada, and to a lesser extent Chile, recycled the bulk of the additional income derived from terms-of-trade gains into the economy, whereas Norway saved a substantial proportion of it – over 14% of the gross national income (GNI) per year – in its sovereign fund (Figure 1.5, panel B). The greater stability of the Norwegian currency in effective terms is a remarkable phenomenon that contrasts with the appreciation of the Australian and Canadian currencies. The slight accumulation of net savings in Chile after 2004 (approximately 3% of GNI per year), in the wake of the creation of a sovereign fund in the early 2000s, also seems to have limited the currency's appreciation in comparison with those of Australia and Canada, despite Chile's sharper increase in the terms of trade. It is nevertheless difficult to fully establish a link between the volatility of the macroeconomic performance and the management of the mining boom of these countries, due to different exposures to the multiple shocks that have affected the world economy since 2003, as well as other factors.

Figure 1.5. **Gross national income and its use**



1. 1992-2003 for Australia, Canada and Norway; 1997-2003 for Chile.

Source: ABS, Cat. Nos. 5206.0, 6202.0 and 3101.0; OECD, *OECD Economic Outlook Database*.

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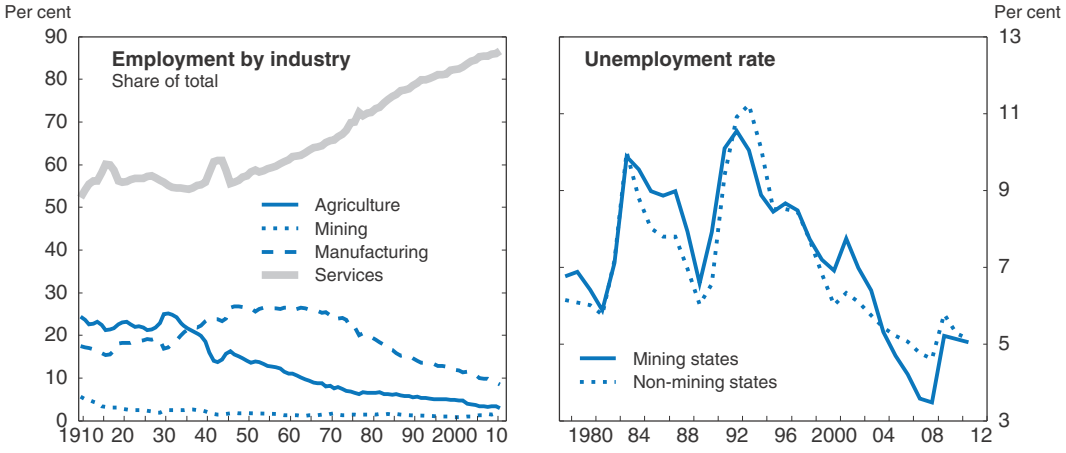
Put in historical perspective, ongoing structural adjustment at the sectoral and regional level seems manageable

The sectoral employment adjustments triggered by the mining boom are neither unusual nor pronounced compared with massive past changes in labour allocation (Figure 1.6, left panel). Direct adjustments may remain slight over the next few years because the mining sector employs relatively few workers. However, employment restructuring in the exposed non-mining sectors may accelerate as efforts firms are forced to enhance competitiveness. The labour market vitality recorded in the initial years of the terms-of-trade shock and the immediate aftermath of the global financial crisis has indeed lessened since end-2010. Not all of this is due to the terms-of-trade shock: it also reflects weaker retail and housing sectors in the wake of households' greater caution following the decline in their stock of assets and rising global uncertainty (Stevens, 2011a).

The widening of the performance gap between mining and non-mining states, although quite moderate, may have reinforced the perception of the existence of a two-

Figure 1.6. **Sectoral and regional labour market indicators**



Source: RBA; ABS, Cat. Nos. 6202.0 and 6291.0.

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speed economy, even though this phenomenon is not new in Australia (Garton, 2008). During the decade preceding the commodity boom, mining areas were already exhibiting more vigorous growth than the rest of the country, because of faster population increase and a catch-up in living standards relative to New South Wales and Victoria (Table 1.1). Between 2003 and 2011, the growth differential between mining and non-mining areas has increased only slightly compared with the period prior to the boom. This partly results from the divergence of economic developments between the two main mining states, which have been much more favourable to Western Australia than Queensland. Queensland is far less specialised in the mining industry and its coal output was disrupted by natural disasters in 2011. This state was also struck by a substantial decline both in its large tourism sector, due to the high exchange rate, and in its real estate sector because of a shift in the behaviour of households and the region's relatively high house prices (Davies *et al.*, 2012).

Much of the incremental demand in mining areas has also been satisfied by the other states and by foreign imports, as indicated by the sharp growth differentials in these regions between final demand and output. Labour demand in mining states has, for instance, been satisfied to a sizeable, but hard-to-quantify, extent by proliferation of fly-in fly-out commuting arrangements from non-mining cities, implying that the income earned in the mining sector has been spent in non-mining areas (Parkinson, 2011). Mining and non-mining states thus experienced a similar acceleration in employment growth on average over this period and regional unemployment disparities have remained low (Figure 1.6, right panel).

Great uncertainties surround future terms-of-trade trends

The form and extent of the transformations to come will depend on changes in the external environment, which are subject to multiple sources of uncertainty. First and foremost is uncertainty regarding commodity price trends, as the authorities acknowledge. They have adopted a relatively cautious attitude since the beginning of the mining boom, generally factoring a decline in the terms of trade into their budget projections, even if those terms are expected to remain significantly higher than in past decades. The latest

Table 1.1. **Economic performance in mining and non-mining states**

Average annual growth rate

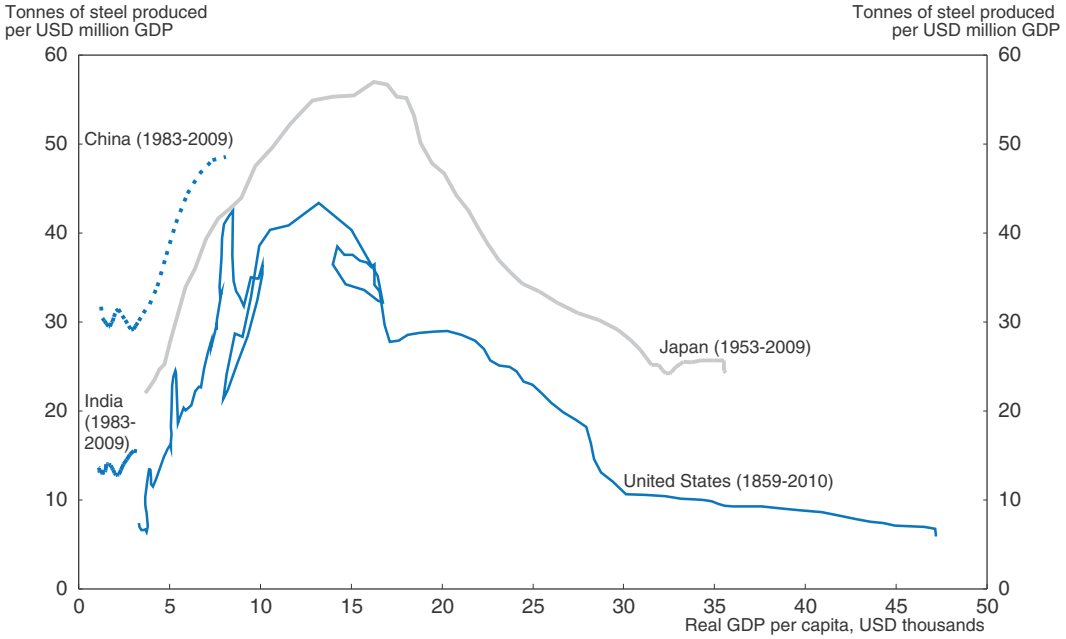
	A	B	B-A
	Before the mining boom	After the mining boom	Difference
	1990-2003	2003-11	
Mining states			
Gross State Product	4.3	4.1	-0.2
Population	1.9	2.3	0.4
GSP per capita	2.3	1.8	-0.6
Employment	2.3	3.1	0.8
State final demand	4.1	5.6	1.5
Real gross domestic income per capita	1.6	3.4	1.8
Real household disposable income per capita	1.9	3.3	1.4
Consumer price index	2.3	3.2	0.9
Non mining states			
Gross State Product	2.8	2.4	-0.4
Population	0.9	1.3	0.4
GSP per capita	1.9	1.1	-0.8
Employment	1.1	2.0	0.9
State final demand	3.2	3.3	0.1
Real gross domestic income per capita	1.4	2.3	1.0
Real household disposable income per capita	1.6	2.3	0.8
Consumer price index	2.3	2.8	0.5
Mining/Non-mining state gap			
Gross State Product	1.4	1.7	0.3
Population	1.0	1.0	0.0
GSP per capita	0.4	0.7	0.2
Employment	1.2	1.1	-0.1
State final demand	0.9	2.3	1.4
Real gross domestic income per capita	0.2	1.1	0.8
Real household disposable income per capita	0.3	1.0	0.7
Consumer price index	-0.1	0.4	0.4

Source: ABS, Cat. No. 5220.0 and OECD calculations.

budget projections assume that the terms of trade will cumulatively decline by almost 11% by FY 2013/14 (MYEFO, 2012).

The uncertainties over commodity prices, mostly relating to the medium term, seem rather limited concerning the demand for mining products. In all likelihood, emerging countries, and especially China, are expected to maintain a robust demand. For instance, China's demand for mining products, which are vital to its industrialisation and urbanisation, could be expected to remain brisk despite likely short-term volatility, perhaps at least up to 2025, judging from the past experience of developed countries (Connolly and Orsmond, 2011; Findlay, 2011). Intensive demand for commodities tends to continue until households increase their demand for services, similar to what took place in the United States, for example, after World War II, and in Japan in the 1970s (Figure 1.7). Moreover, other Asian countries, such as India, Indonesia or Vietnam, may follow a similar trajectory to China's, with sharp growth in their demand for raw materials in the future (Hyvonen and Langcake, 2012). The mining boom could thus extend longer than the previous ones experienced by Australia, which generally did not exceed 15 years due to depletion of the natural resources in question (such as gold in the 1850s) or a weakening of the foreign demand that triggered the booms (Battellino, 2010).

Figure 1.7. **Steel production intensity and economic development**[1]



1. 2010 prices converted at 2005 PPP exchange rates; 5-year moving averages. US iron production intensity prior to 1897. Japan steel production is by JFY prior to 1980.

Source: Data provided by the RBA, based on The Conference Board's *Total Economy Database* (January 2011); IMF; The Japan Iron and Steel Federation; Johnston and Williamson (2010); Maddison (2009); US Bureau of Mines; US Geological Survey; World Steel Association.

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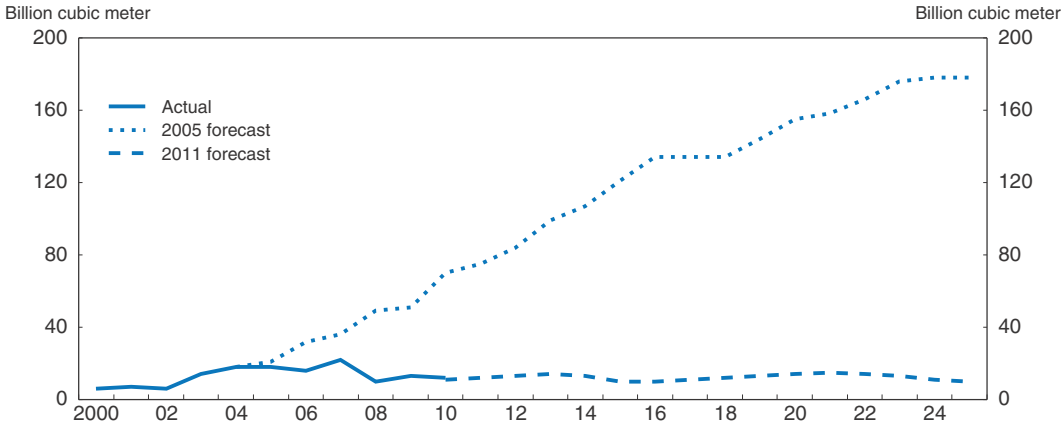
Australia is also in a good position to cope with the probable shift in commodity demand that might arise for environmental reasons (IEA, 2010). Expansion of its production of liquefied natural gas (LNG), which should soon hoist the country to second place among world exporters (after Qatar) ought to enable Australia to cope with a possible drop in demand for coal, which generates a lot of CO_2 (Jacobs, 2011). The LNG market has been expanding rapidly for several years.

Continued heavy demand for commodities is likely to result in global expansion of production, which will eventually reduce prices (OECD, 2010a). Supply has reacted vigorously in Australia, and numerous other countries are endeavouring to expand their capacity. Brazil has increased production of iron ore, which is not an especially scarce resource, and coal production is increasing in Indonesia, Colombia and South Africa (Connolly and Orsmond, 2011). Qatar could suspend its moratorium on developing gas fields which it adopted in 2009. Equilibrium in this market could also be altered by expanding production of non-conventional gas (coal seam, shale and tight gas). The United States has for instance become more than self-sufficient in natural gas, whereas just a few years ago it was expected to be a major LNG importer (Figure 1.8). Many other countries, including Australia and China, also have substantial non-conventional gas reserves that could be exploited, although methods for extracting these types of gas do pose environmental problems (Jacobs, 2011). Nevertheless, Australia's iron ore and coal reserves are abundant, diversified and of high quality, and its transport costs are low, which gives it an advantage for LNG. Moreover, Australia can guarantee a more secure supply than many other exporters which are less stable politically.

Figure 1.8. **US net imports of liquefied natural gas**



Source: Data provided by the RBA, based on the US Energy Information Administration *(www.eia.gov/forecasts/aeo/er/)*.

StatLink http://dx.doi.org/10.1787/888932737307

The pressure for structural adjustments is likely to intensify

Whatever the trend of commodity prices, economic development in China and elsewhere in Asia over the coming years will be a major source of challenges and opportunities for the Australian economy. The expected continued expansion of Asian economies will reduce the cost of Australia's remoteness from large economic markets. According to Quah (2011), the centre of gravity of global activity has shifted from the mid-Atlantic in 1980 to Bucharest in 2008, and it can be expected to lie between India and China by 2050. Although the large Asian markets will still be far away from Australia, they will be nearer than those of Europe or the United States, with positive effects on productivity and per capita GDP (Box 1.1). Apart from the raw materials sector, Australia should increasingly benefit from demand for its non-mining sectors as China, increasingly focused on bolstering domestic demand, generates a more diversified demand for goods and services

Box 1.1. **Is Australia's geographical handicap going to diminish?**

Because of its geographical remoteness from world markets, Australia suffers from an economic handicap relative to most OECD countries. This remoteness is reflected in trade flows and efficiency of businesses which, among other effects, are prevented from operating on an efficient scale and, more generally, from exploiting scale economies. In 2005, this handicap is estimated to have reduced per capita GDP by over 10%, as in New Zealand, compared with the average of other countries (Boulhol and de Serres, 2008). Moreover, this cost has diminished only slightly, because over time there has been scarcely any observable downward movement in freight costs in relation to goods prices.

However, the detrimental impact of this remoteness may decline, as the centre of gravity of world markets shifts eastward. These markets, although still very distant from Australia, will be nearer than those of Europe or the United States, so that according to Boulhol and de Serres (2008), the detrimental impact of this remoteness on the level of per capita GDP could decline by two percentage points by 2030 and by three points by 2050. This trend reflects the expansion of Australia's potential markets because of the sharp growth expected in China and the rest of Asia, according to OECD long-term projections (OECD, 2012a).

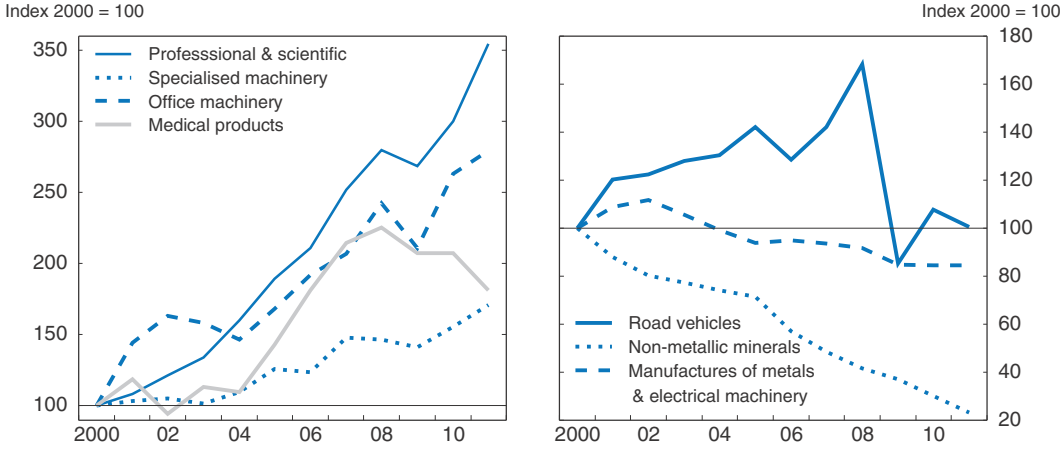
on behalf of an increasingly numerous middle class (Australian Government, 2011; Kearns and Lowe, 2011; Garnaut, 2011).

The rise in Asian countries' demand for tourism and education services in recent years attests to the emergence of such opportunities, but also to the need for adjustments to seize them. Exports of education services grew sharply between the late 1980s and the late 2000s, thanks to the vitality of demand from India and China, to become the third-ranking source of export income (after coal and iron ore) and made Australia the OECD's fifth-largest exporter of these services (Hall and Hooper, 2008). Similarly, tourism revenue from China and India doubled between FY 2000/01 and FY 2010/11, and will probably continue to grow strongly.

Nevertheless, a number of obstacles are impeding both of these sectors' capacity to take full advantage of these developments. These include real currency appreciation, rising competition, for example, the development of offshore education services by many Chinese universities, the adoption of more restrictive conditions on student visas since 2009, and the relative unsuitability of tourism facilities for the demand of the new Asian clientele, which is geared more towards large cities than rural areas (Hooper and van Zyl, 2011).

It is difficult to predict how Australian economy's comparative advantage will evolve, but shifts of resources, between major sectors and within sectors, seem inevitable. After the mining industry, it is possible that Australia will strengthen its comparative advantage in agriculture if demand for these products from large Asian countries increases as their living standards rise and/or their eating habits evolve (Jayasuriya and Panza, 2011). On the other hand, structural adjustments are necessary in manufacturing to preserve its international competitiveness and boost productivity (Chapter 2). Pressures exerted by countries with low labour costs on wide-scale production of standardised manufactured goods, such as automobiles or metallic construction materials should further intensify (Lowe, 2012). Accordingly, it is likely that preservation of a competitive manufacturing sector will hinge on its capacity to adjust by bolstering its high value-added segments, such as scientific instruments, medical products or specialised machinery, exports of which have been rising for several years despite the appreciating exchange rate (Figure 1.9).

Figure 1.9. **Manufactured export volumes**



Source: ABS, Cat. No. 5302.0, Table 103.

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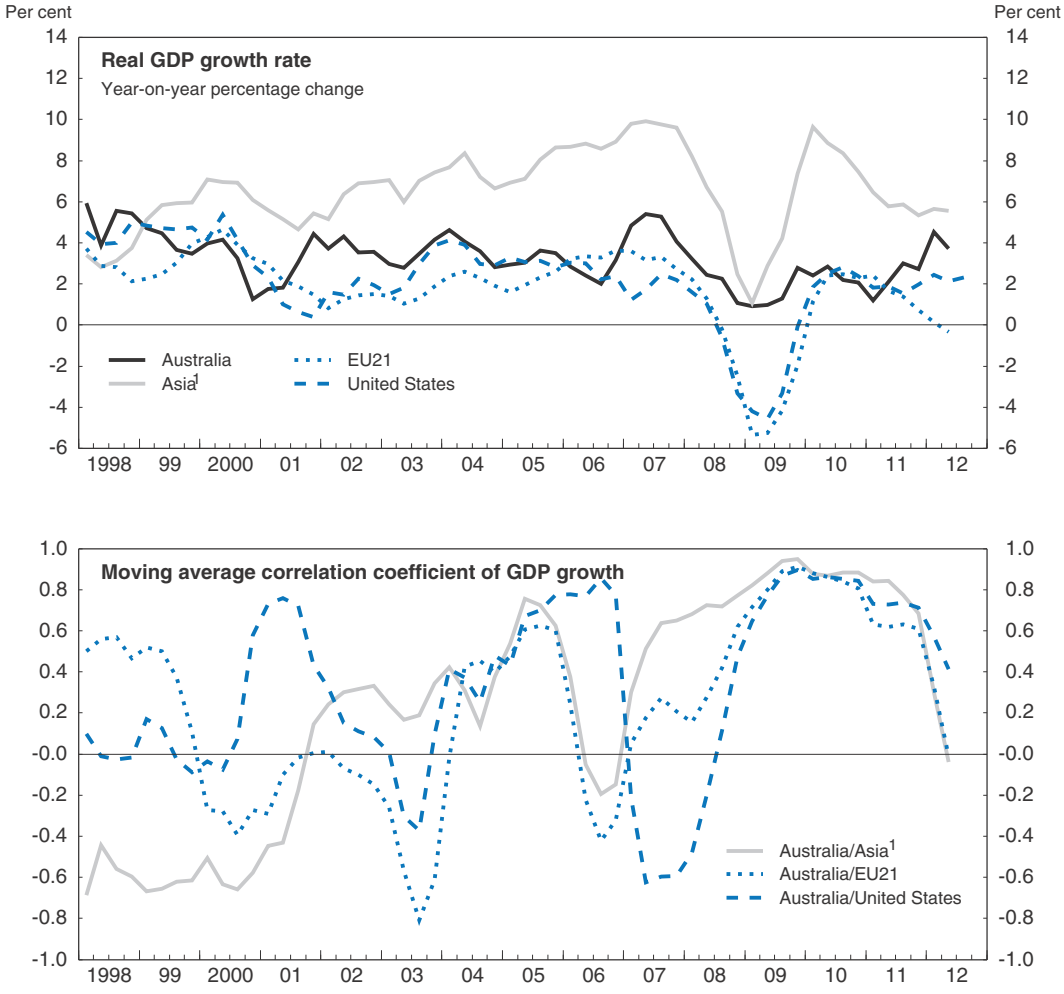
Australia could also preserve its comparative advantage in industries like food, beverage and tobacco and non-ferrous metals, both of which are closely linked to the natural resources of the country by including higher technology activities in these industries (OECD, 2012b).

The Australian economy is in its 21st year of uninterrupted growth, which reflects strong resilience to the sectoral shocks that followed the excesses of the information and communication technology (ICT) sector and real estate markets earlier in the decade. The reduced vulnerability to the 2008 shocks has also been aided by the growing trade links with Asia and particularly China, and the complementarity nature of these economies (Battellino, 2011). Moreover, Australia is less exposed than many other OECD countries to the competitive pressure exerted by emerging Asian countries because of the relatively small size of its manufacturing sector. In all, since the early 2000s there has been a growing synchronisation of business cycles in Australia and East Asia (Figure 1.10).

Figure 1.10. **Correlation of real GDP growth**



1. Asia aggregate is calculated using the 2010 nominal GDP weights at PPP rates of China, Japan, Korea and Dynamic Asia.

Source: OECD, *OECD Economic Outlook Database*.

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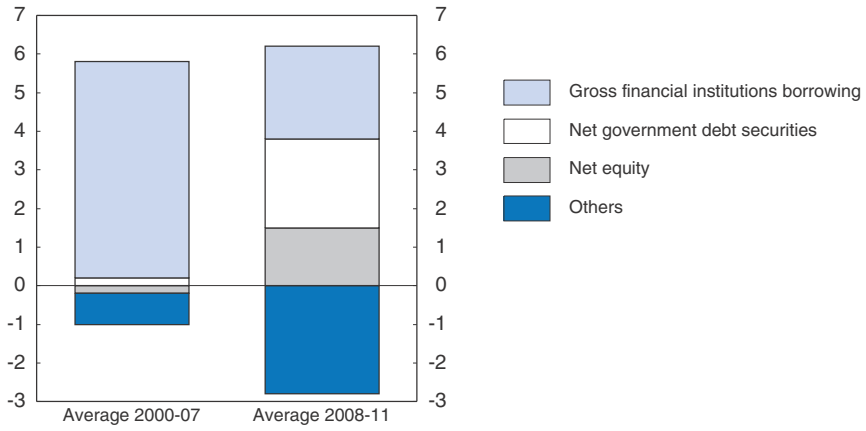
A second important consequence of the transformations underway will be to make the Australian economy more cyclical, due to the expansion of its mining sector. Commodity prices are intrinsically more volatile than the prices of many other goods and services because of the low short-term elasticity of supply for such products and the lack of substitutes, whereas their demand is closely tied to business cycles (Kearns and Lowe, 2011).

A third potential change in the country's medium-term economic development involves the movements and role of its exchange rate. Australia's good economic performance, its sound public finances and its favourable outlook have enhanced its appeal to international investors, as shown by the change in the financing of the current account deficit since the global financial crisis (Figure 1.11). Prior to the crisis, this deficit was covered almost entirely by bank borrowing abroad, whereas since 2008 there have been greater inflows of equity capital to finance mining investments and substantial purchases of government bonds (Eslake, 2012). Australia is in fact one of only seven countries in the world to have kept a triple-A rating for its sovereign debt. Although these developments stem partially from an intensification of carry trade operations, there are convergent indications suggesting that the purchases of government bonds also originate with sovereign funds and central banks looking to diversify their portfolios (Lowe, 2012). The fall in the terms of trade since their peak in the third quarter of 2011 did not much affect the currency, and yields on government bonds have decreased, falling to their lowest level since the late 1960s. Such a development, if continued, could contribute to a certain disconnection between movements of the Australian dollar and the terms of trade, which could reduce the exchange rate's stabilising effect on the economy.

Figure 1.11. **Current balance financing**

Per cent of GDP



Source: ABS, Cat. No. 5302.0, Table 1.

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The economic policy challenges of this adjustment process

Australia's history shows that mining booms are periods of profound economic change giving rise to complex economic policy challenges (Battellino, 2010). Macroeconomic stability needs to be maintained and inflationary pressures kept at bay. It is also essential to preserve the economy's flexibility and not to distort the allocation of resources. On the whole, outcomes so far have been positive, particularly when compared

with past experience. However, the challenges that lie ahead to sustain such outcomes and push ahead with the country's adaptation should not be underestimated. The shocks facing Australia are on the whole positive, but the economy's structure must continue to adjust so it can harness the new opportunities created by developments in Asia. These changes also imply difficult adjustments for many households and firms, as the costs and benefits of the current transformations are not shared evenly. Economic policy can facilitate this process. Moreover, it must prepare to face new risks that arise with the fundamental changes underway associated to uncertainties relating to external development, including on the terms of trade, and likely higher volatility of the economy.

As stressed by the authorities, it is essential, first and foremost, not to resist the long lasting changes brought about by transformations in the external environment, even if there are uncertainties as to how long the mining boom will last (Stevens, 2011b). Many of the changes underway are the result of a transformation of the world economy, which is not a temporary phenomenon but is more likely to lead to long-term changes in Australia's comparative advantage (Gruen, 2011). Asia's development is an irreversible trend with consequences that go far beyond the mining boom. Nevertheless, the extent and duration of the high terms of trade and strong real exchange rate are uncertain, which adds to the challenges of the adjustments ahead.

The key is smooth reallocation of resources in the economy

With this in mind, the authorities' efforts to improve public information on how Asia's development is affecting Australia are to be commended and should be continued. While the economic impact of China's strong growth seems to be positively perceived, it is important to address concerns raised by the changes underway, as shown by growing pressure in some sectors for protection against foreign competition and trade unions' calls for greater job security. The government has published a White Paper (*Australia in the Asian Century*) in 2012, which provides a better understanding of the economic, social and geostrategic consequences of these changes. Australia cannot escape the many adjustments that have been made necessary by the development of Asia, but their ramifications must be examined, explained and dealt with to facilitate the transition ahead and make the most of the opportunities created by these changes (Australian Government, 2012a). Public policy measures to ease the reallocation process of resources will have to ensure that the burdens and benefits of the adjustments are widely shared.

The best response is to maintain, and if possible reinforce, the economy's flexibility to grasp new opportunities that lie ahead and minimise adjustment costs. The complex nature of the transformations underway makes it hard to predict which economic sectors will benefit from the changes. It is thus more effective to help workers and firms adapt rather than to protect jobs or businesses in specific regions or sectors. Public subsidies to maintain sectors exposed to the appreciating exchange rate – as in the automotive industry – may be to no avail, forcing other exposed sectors to adjust even more and, in the long term, slowing improvements in living standards (Box 1.2). It is also important not to needlessly postpone the required adjustments, as these are easier to implement when the economy is buoyant and resources are available to help, and in some cases compensate, the "losers" in the adjustment process.

Macroeconomic and structural policies play complementary roles in facilitating the smooth reallocation of labour and capital. It is important to preserve a stable macroeconomic environment by keeping inflation under control. There are enough

Box 1.2. **Should protection of the automotive sector be maintained?**

One of the Australian industries most negatively affected by the mining boom is the automotive industry. The exchange rate appreciation has damaged its competitiveness and threatened employment. To alleviate these pressures, the authorities have recently extended and, in some cases, increased their support to this sector, which is to be temporary. This box examines the pressures on the Australian car industry, including those related to the changes underway at the global level.

The Australian car industry, which has historically been developed through foreign investment mainly from the United States and Japan, is relatively small, accounting for less than 5% of Australian manufacturing value added and about 0.4% of total GDP and employment in 2009-10 (ABS, 2011). It has been exposed to rising competition from emerging economies since the end of the 1990s. While emerging markets represented about 15% of global car production in the early 2000s, this share rose to almost 50% in FY 2010/11, driven by the expansion of Asia, particularly China (Figure 1.12, panels A and B). Demand has faced similar trends. This rapid transformation has been influenced by: excess capacity in many developed countries (Haugh *et al.*, 2010), swift expansion of consumption and car sales in emerging countries and a rising efficient scale of production with the development of new low-cost car producers (Baker and Hyvonen, 2011).

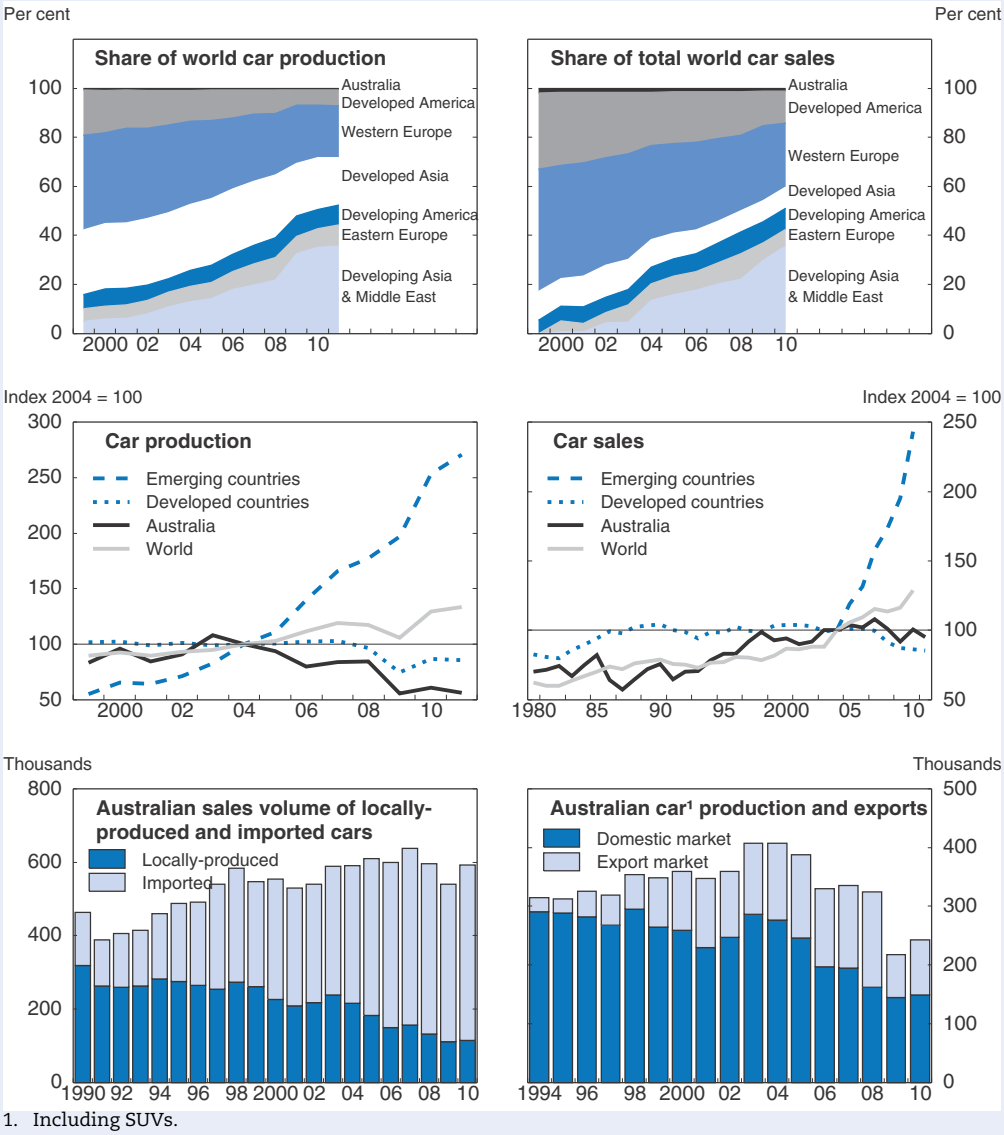
In Australia, cheaper imports together with a change in consumer preferences led to an increase in imported vehicles from 30% of sales in the 1990s to more than 80% in 2010 (Figure 1.12). Output and employment of the sector have steadily declined since the beginning of the mining boom, as efforts of Australian car makers to offset their shrinking local market share by increasing exports were thwarted by the currency appreciation. As a result, some car companies closed over the last few years (for instance Mitsubishi in 2008) while others sent warning signals of serious difficulties (DIISR, 2010; Peter, 2012).

The Australian automotive industry was protected by high tariffs until the mid-1980s. Since then a series of tariff cuts, which were coupled with assistance packages to help the adjustment, have been implemented. The last tariff reduction from 10% to 5% on new cars, in 2010, was associated with AUD 5 billion (0.4% of GDP) aid through the Automotive Competitiveness and Investment Scheme. This programme was replaced in 2010 by the Automotive Transformation Scheme which extended funding from 2015 until 2020, at an additional cost of AUD 2.5 billion. Taking into account net tariffs and budgetary assistance, the motor vehicles sector received AUD 1.1 billion in FY 2010/11, equivalent to an effective rate of assistance of 8.5% of its value added; the manufacturing average is 4.2% (PC, 2012). This assistance rate has declined over the last decade. However, there are other forms of support, such as the 33% luxury tax (applied mainly on imports), *ad hoc* state government financial assistance and government procurement favouring domestic cars over imports.

Pressures have recently mounted in favour of even higher assistance and potential reversal of the declining trend of protection to the car industry. One rationale for such pressures relies on the traditional "*Dutch Disease*" argument and the implicit assumption that the current currency appreciation is temporary. According to this argument, the industry would be squeezed out and unable to recover when the exchange rate eventually falls back to a more competitive level. According to the proponents of this thesis, the economic cost of car industry collapse would be considerable because of its high spin-off benefits in terms of output, employment and innovation given its leading and strategic position in the manufacturing sector. Tariff reductions are also seen as a disadvantage for the Australian industry, especially compared to other developing and developed countries that do not follow the same policy. Another line of reasoning recognises the rather small weight of the automotive sector in the economy as a whole, but underlines its greater significance to states like South Australia and Victoria and to particular cities and regions within them (PC, 2008). The closure of automobile plants could thus imply important social costs at the local level.

Box 1.2. **Should protection of the automotive sector be maintained?** *(cont.)*

Figure 1.12. **Automotive industry indicators**



1. Including SUVs.

Source: Australian Department of Innovation Industry, Science and Research; OECD, *Main Economic Indicators*; OICA (Organisation Internationale des Constructeurs d'Automobiles) and national automobile manufacturers sources.

StatLink http://dx.doi.org/10.1787/888932737383

International comparisons of the level of aid to the automotive sector are difficult to establish. However, whether or not Australia is assisting its car industry more or less than other countries are, they are substantial and hamper (indeed, they are designed to limit) the adjustment of scarce resources to flow to highest value activities in response to economic shocks. In the current circumstances, support to the automotive sector is likely to force larger adjustments on other exposed sectors, such as tourism and education, which do not enjoy similar support, by bidding up the prices of capital and labour and increasing their tax burden (Corden, 2012). Moreover, the future of the automotive sector looks difficult in many advanced countries, judging by current global overcapacity and past trends.

Box 1.2. **Should protection of the automotive sector be maintained?** *(cont.)*

The car industry produces spin-off benefits to the rest of the economy, but these should not be overestimated. According to OECD estimates, one dollar of automobile output (including vehicle repairs) generates approximately 31 cents of value-added from the automobile industry, 43 cents of value added from other domestic industries and 26 cents from imports.* Given its size, the automotive sector might thus generate about ½ per cent of GDP of additional activity in the economy. However, such an estimate is likely to represent an upper limit, as it takes into account automotive-related activities such as maintenance and retailing, which would remain even if all cars were imported. Moreover, R&D spillovers generated by assistance to the car industry may also be relatively low, as it generally involves industry-specific modification of existing products or processes rather than new technology development (PC, 2008).

A case can be made in favour of government assistance when the closure of automotive firms might produce a shock difficult to absorb at the local or regional level. Under such circumstances, assistance should however aim to smooth and help the adjustment process rather than prevent it, as seems to be recognised by the authorities.

* These parameters have been estimated on the basis on the 2007 input/output tables using a similar approach as used by Gruen (2011) for the analysis of the mining industry.

uncertainties stemming from the transformations underway not to add new ones about prices. Structural reforms guaranteeing adequate economic flexibility are also important for macroeconomic policy. A more flexible labour market, for example, will give monetary policy more room for manoeuvre and facilitate adjustment by easing the near-term dilemma between inflation and unemployment. A prudent fiscal policy reinforces monetary policy and provides room to react to severe adverse shocks, as was the case in 2008-09.

The medium-term fiscal strategy should take better account of structural changes and be more cautious

The potential increase in the Australian economy's volatility as a result of the mining sector's expansion, its growing dependence on the emerging economies of Asia and uncertainties surrounding the development of the mining boom militate in favour of a re-examination of the medium-term fiscal strategy. Until now, Australia has been served well by the strategy in place since 1996. This strategy aims to maintain a budget surplus, on average, over the medium term, refrain from increasing the aggregate tax burden (relative to its FY 2007/08 level) and increase the central government's net financial worth over the medium term. Unlike many other OECD countries, Australia has carried out a cautious fiscal policy that enabled it to eliminate its net debt in FY 2005/06, which gave it substantial leeway to adopt a far-reaching stimulus plan in FY 2008/09 and avoid the recession experienced by most of OECD countries.

The persistently rising terms of trade and the mining sector's growing importance nonetheless raise new questions about the role of fiscal policy in the future. These questions centre on two main topics: *i)* the appropriate use of revenue derived from the mining boom; and *ii)* the role of fiscal policy as a counter-cyclical instrument in this new environment (Kearns and Lowe, 2011). A number of analysts have been concerned by the risks of recycling into the economy too much or too rapidly the additional tax revenue

stemming from the mining boom (OECD, 2010a; Stevens, 2011b; Corden, 2012). As discussed in the 2008 *Economic Survey of Australia*, during the first phase of the mining boom, between FY 2002/03 and FY 2007/08, the federal government redistributed the bulk of the incremental tax revenue derived from terms-of-trade gains, even though a comfortable budget surplus of 2% of GDP was maintained (OECD, 2008). The terms-of-trade gains could be reversed more quickly than the authorities now assume and, even if they remain high, they are likely to undergo strong fluctuations as a result of the inherent volatility of commodity prices. Faced with similar situations, countries such as Norway and Chile have found it useful to create sovereign wealth funds (SWFs) to manage their mining and mineral revenue to avoid excess volatility or a Dutch disease.

Assessing the advisability of creating a sovereign wealth fund in Australia would entail clarifying what purpose the fund would serve. As the examples of Norway and Chile illustrate, sovereign funds can further three broad categories of objectives, depending on their characteristics and how they work:

- Make intergenerational transfers of resources and guarantee the long-term sustainability of public finances.
- Moderate exchange rate appreciation to ease pressures on the exposed non-mining sector.
- Maintain sound fiscal policy as a macroeconomic stabilisation tool to smooth consumption and protect public accounts from sharper-than-expected declines in commodity prices.

In Norway's case, the sovereign fund seeks to achieve all three objectives, while in Chile the primary goal is to ensure sound fiscal management. In both cases, the funds are combined with a fiscal rule promoting prudent use of resource-related public revenues by de-linking spending from the fluctuations of natural resource revenues (collected through taxes, royalties and so forth). In Norway, revenues from oil and gas resources are invested in foreign assets and accumulated in a SWF fund now amounting to about 130% of GDP. Part of the fund's resources (4% of its value, corresponding to the notional real return on the assets) is spent each year. The Chilean stabilisation fund is much smaller, representing 5½ per cent of GDP in 2011, down from 13% of GDP in 2008. To smooth the use of revenues from its copper resources and avoid the risks of pro-cyclical fiscal policy during mining booms, a budgetary rule targets the structural equilibrium of public accounts, corrected for cyclical variations and fluctuations in copper prices. To this end, the authorities distinguish between permanent and temporary mining-related tax revenues based on an independent estimate of long-term equilibrium raw materials prices (OECD, 2010b).

There are no overriding arguments for permanently accumulating assets in an SWF in Australia

By contrast with Norway, which anticipates a sharp falling-off in oil and gas production in the relatively near future, Australia's natural resources are expected to last much longer (Table 1.2). There is therefore much less need in Australia to smooth assets across generations. According to World Bank estimates, despite the depletion of natural assets, savings in Australia along with investments in human capital have been sufficiently large to increase national wealth over time (World Bank, 2010). Although Norway's fund is not legally dedicated to financing pension (despite its name: Government Pension Fund Global), the assets it holds could clearly be used for that purpose. In Australia, the private-

Table 1.2. **Reserves of key resources**[1]

Years of current production

	Resource life (years)	% of GDP	% of exports
Australia			
Iron ore	71	4	18
Black coal	98	3	15
Gold	33	1	4
Crude oil	12	1	4
Gas	55	1	4
Total resources		*10*	*45*
Weighted average	*70*		
Canada[2]			
Crude oil	147	3	10
Gas	11	1	4
Total resources		*4*	*13*
Weighted average	*110*		
Chile			
Copper	114	17	55
Weighted average	*114*		
Norway			
Crude oil	8	11	35
Gas	26	7	21
Total resources		*18*	*56*
Weighted average	*15*		

1. Export and GDP shares in 2010 for Norway, 2009-10 for Chile and 2010-11 for Australia. GDP shares are for commodity exports. Resource life is based on production in 2008 for Norway and 2009 for Australia and Canada.
2. 2009 data.

Source: Bureau of Resources and Energy Economics; Geoscience Australia;Norwegian Petroleum Directorate; ABS Statistics.

sector superannuation pension funds play this role (Gruen and Soding, 2011). The superannuation assets of Australian households represented 100% of GDP at end-2010 and they are expected to reach 160% of GDP by 2050 with the projected increase in pension contributions from 9% to 12% between now and 2020. The Australian pension system is underpinned by mandatory contributions (concessionally taxed) with restrictions in place to ensure that savings are not withdrawn until retirement age. Furthermore, the predominately defined contribution nature of the Australian system guarantees pension financing for future generations, irrespective of commodity price trends. In Australia, the redistribution of mining-sector income in the economy has not reduced national saving rate, which is higher than the average for the large OECD countries but lower than in Chile or Norway (Table 1.3).

Attempting to influence the exchange rate would be neither easy nor necessarily desirable in Australia

The best way to use natural resource revenues depends in part on their size relative to the economy. The mining sector (including oil and gas) accounts for approximately 20% of Norwegian GDP, but only 9% of GDP in Australia. Government revenue generated by the sector has totalled around a third of aggregate government revenue in recent years in Norway, versus 6% in Australia in FY 2008/09 (Gruen and Garton, 2012). Spending such

Table 1.3. **Saving and investment: an international perspective**

Per cent of GDP

	National saving			Investment		
	1994-2003	2004-07	2008-11	1994-2003	2004-07	2008-11
Australia	**24.0**	**25.9**	**28.0**	**25.0**	**27.8**	**27.6**
Canada	23.1	25.4	21.4	19.6	22.3	22.3
Norway	31.3	37.8	36.8	21.4	22.6	23.1
Chile	24.0	32.4	28.4	23.4	20.7	22.2
United States	16.9	14.6	12.3	19.4	20.1	16.1
Japan	27.2	24.2	20.8	25.8	22.7	20.6
Germany	22.6	23.8	23.2	21.0	18.1	17.8
France	20.0	19.8	18.0	18.3	20.5	20.3
Italy	22.6	21.4	18.9	20.2	21.5	20.1
United Kingdom	16.2	14.4	13.1	17.3	17.5	15.4
G6	20.9	19.7	17.7	20.3	20.0	18.4
Other mining countries	26.1	31.9	28.9	21.4	21.9	22.5

Source: OECD, *OECD Economic Outlook Database*.

revenue domestically would be highly destabilising in Norway, but less so in Australia, including in its effect on the exchange rate.

The example of Norway shows that a sovereign fund can be effective in avoiding appreciation of the real exchange rate that can accompany a boom in the terms of trade. However, it would be difficult for the Australian authorities to neutralise the appreciation of their currency as in Norway, if they wished so, because the government collects only a small portion of the mining rent exploited by the private sector. The Australian authorities collect less than one-fifth of the revenue from factors in this industry, a share unlikely to substantially increase despite the recent rise in resource taxation, versus approximately two-thirds in Norway due to a higher effective tax rate on mining resources. Given these differences, the budgetary savings required in Australia to stabilise the exchange rate would be large and should offset the redistribution of supplemental revenue generated by the mining boom carried out locally by private interests (Corden, 2012). According to Gruen and Garton (2012), to save the same proportion of the additional national revenue generated by the rising terms of trade as the Norwegians, a budget surplus averaging 4% of GDP would have been necessary over the past eight years. Without a larger government control on the mining rent, achieving a fiscal objective of this magnitude would impose considerable budgetary constraints, which would potentially be harmful for the economy and difficult to accept in political economy terms.

The terms of trade may also stabilise at a relatively high level in historical perspective, with long lasting effects on the economy given the large reserve of natural resource of the country, which contrasts with the Norwegian situation. Under such a scenario, insofar as exchange-rate appreciation is an equilibrium adjustment mechanism, efforts to resist it would only delay the required structural changes. Slowing the appreciation would protect some sectors from structural adjustment, but this would also mean lower investment because of reduced capital inflows (Corden, 2012). This would entail a cost in Australia, particularly in the realm of infrastructure, where more investments are needed (Chapter 2).

A stabilisation fund could help protect the budget against the volatility in natural resource revenues

An SWF could be used to smooth the distribution of resource revenues to the economy. Saving part of the public resources generated by the boom can help smooth government and private consumption. Combined with a shift in medium-term fiscal strategy, such a SWF would better protect the economy against shocks related to volatility of commodity price movements. As the previous *Economic Survey of Australia 2010* recommended, such risks could be avoided if the authorities were to draw on the experience of the Chilean fiscal management model by creating a budget reserve to accumulate public revenues from mining taxes when they are unusually high. It could be helpful to further de-link government spending decisions from revenue fluctuations caused by changes in those prices, for instance by introducing an expenditure rule. In all, creation of a stabilisation fund combined with a cautious budget rule would be consistent with the thinking behind the current fiscal strategy for a relatively modest cost – that of deferring and smoothing out the use of public mining resource revenues. A stronger fiscal buffer induced by the creation of a stabilisation fund could also be useful in a low inflation environment, where monetary policy might have too little scope for tackling large-scale shocks.

Efforts to enhance transparency of budget discussions and strengthen the fiscal framework should continue

Like many OECD countries, Australia has created an independent budget institution, which reports to Parliament, the Parliamentary Budget Office (PBO). This body has been operational since July 2012, with an annual budget of AUD 6 million and staff of some 30 to 35 persons headed by an independent officer appointed for a renewable four-year term. The PBO's main function is to provide independent and non-partisan analysis of the budget cycle and fiscal policy; evaluate the costs of proposals put forward by political parties during elections, to put price tags on MPs' suggested reforms (on a confidential basis, if requested) outside of electoral periods, and to respond to Parliamentary inquiry committees. The PBO, which has access to information and statistical resources held by Australian Government bodies, can also conduct its own analyses and its research which it will publish. Provisions have also been made to ensure that the Office is accountable for its work: it can be subject to independent review within a nine-months period after each federal election.

The PBO should play a useful role in improving information available about public finances and enhance the transparency of the already solid budget framework that Australia has instituted at the federal level. The features of this new body are consistent with good practices (Hagemann, 2010). Its initial years of operation will be important for establishing its credibility and the non-partisanship of its evaluations, following the lead of other key Australian institutions, such as the Reserve Bank and the Productivity Commission.

Once this step has been completed, the authorities should consider expanding its functions and responsibilities. For example, the PBO could help fill the information gaps regarding the public finances of the states, perhaps under the aegis of the Council of Australian Governments. With regard both to historical data and analysis of short-term fiscal policies or the long-term sustainability of public accounts, information about the states is fragmentary and unavailable on a consistent basis. This feature, which Australia shares with other federal countries, constitutes a handicap which ought to be fixed. A PBO

with extended powers would be useful for conveying an overall picture of the country's fiscal policy, incorporating analysis of the situations of the states. This body could also examine the efficiency of some government programmes in areas where there is overlapping responsibility between federal and state governments, with the risks of duplication and waste, as in the health care and education sectors (BCA, 2011). Another mission could be to supplement the Treasury's regular evaluations of sustainability of federal finances by preparing Intergenerational Reports covering all levels of government.

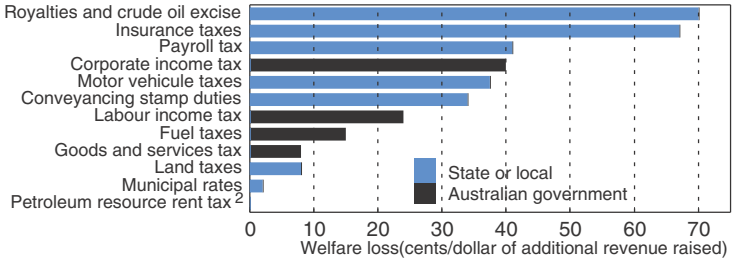
Tax reforms have a useful role to play in facilitating structural adjustment

The Australian Government has adopted substantial tax reforms and launched a number of initiatives aimed at spreading the benefits of the mining boom throughout the economy and helping businesses adapt to the transformations underway. The mineral resource rent tax (MRRT) and widening the base of the petroleum resource rent tax (PRRT) took effect in July 2012. Part of the proceeds from the new tax will serve to enhance tax incentives for SMEs on investment. Tax treatment of business losses has also been improved in line with the proposals of a working group on business taxation. Moreover, the authorities have expressed their support for reducing the corporate tax rate and assessing other options for reform to lower company taxation, such as the introduction of an allowance for corporate equity (ACE). To fund these reforms, which need to be neutral for the public finances given the fiscal situation, offsetting measures are to be identified within the business tax system.

Fine-tuning the reform of natural resource taxation

Rent taxes, such as the MRRT, are more efficient than royalties because they avoid penalising marginal deposits and new projects, relative to older and more profitable operations, which supports output and overall efficiency of the sector (Freebairn, 2012). As emphasised in the Henry Report (AFTS, 2010), royalties constitute the most inefficient levy in the Australian tax system (Figure 1.13). Moreover, the tax take on non-renewable resources is relatively slight in Australia: in FY 2008/09, public revenue generated by the mining sector accounted for roughly 6% of general government revenue, versus a third in

Figure 1.13. **Marginal welfare loss from a 5% increase in selected taxes**[1]



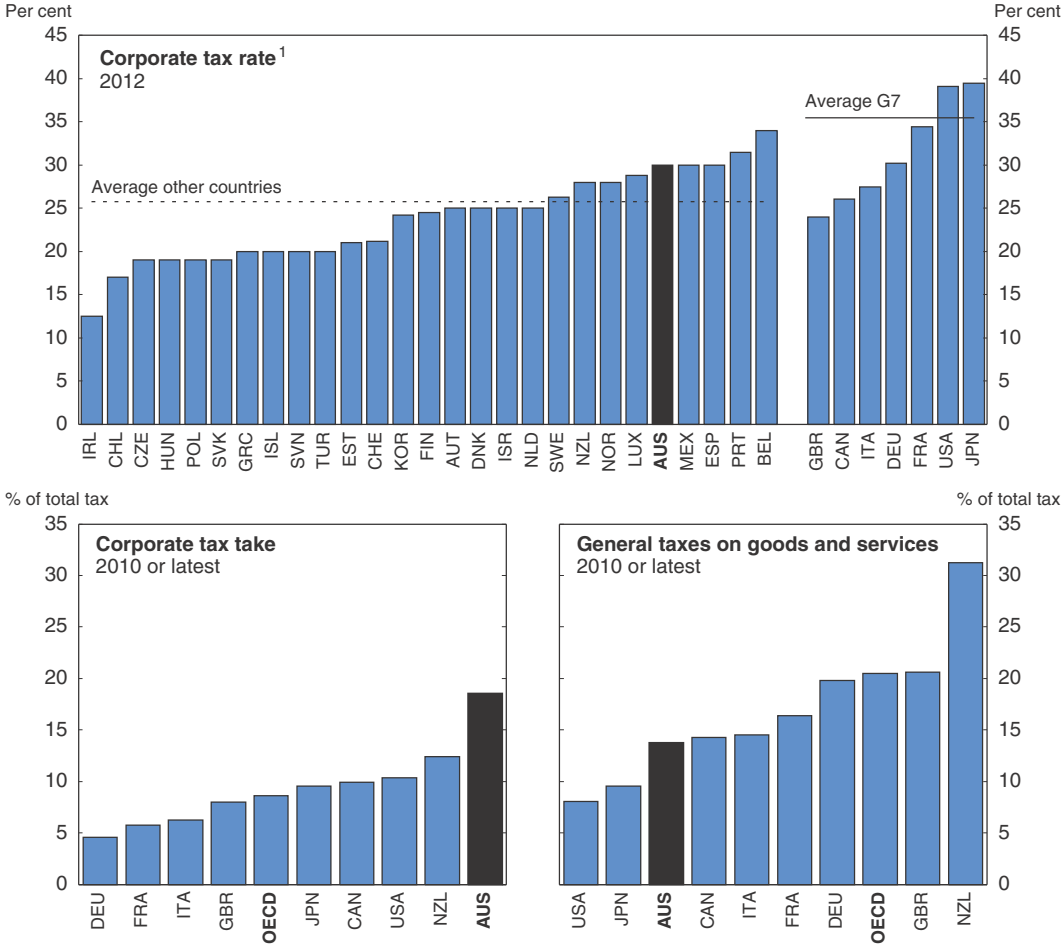
1. Based on the KPMG Econtech MM900 general equilibrium model of the Australian economy, the welfare loss is defined as the loss in consumer welfare per dollar of revenue raised for a small (5%) increase in each tax, simulated individually. It is measured as a satisfaction (utility) at its original level, once the revenue raised by the tax has been returned to the consumer as a lump sum transfer. The extent of such compensation reflects the distorting effect of the tax in the economy.
2. The petroleum resource rent tax is modeled as a pure rent tax giving rise to a zero welfare loss. In practice, a small increase in this tax could be expected to induce some welfare loss because it is not a pure resource rent tax with full loss offset. However, it would be expected to rank as one of the most efficient taxes in the chart.

Source: KPMG (2009), *Econtech*.

StatLink http://dx.doi.org/10.1787/888932737402

Norway, 14% in Chile and approximately 40% in Mexico. An increase of taxation of this sector to ease the relatively heavier burden on business income (Figure 1.14) is justified on efficiency grounds for the economy as a whole. Competitive taxation on the most highly mobile production factor, capital, is important for a "small" country like Australia to attract foreign investment, which is likely to facilitate structural adjustment and foster productivity in the non-mining sector (OECD, 2009).

Figure 1.14. **Selected characteristics of the tax system**



1. The use of effective rather than statutory tax rate would provide a more accurate international comparison of corporate tax rates. However, the calculation of homogeneous effective corporate tax rates, taking into account the large diversity of tax deductions in the various tax systems, is not readily available.

Source: OECD (2012), *Tax Database*.

StatLink http://dx.doi.org/10.1787/888932737421

The MRRT raises difficult questions of how to measure rent, which needs to be separated from normal profits, and is complicated by the deep vertical integration of many mining firms (Ergas *et al.*, 2010). Contrary to the recommendations of the Henry Report, the MRRT treats corporate profits and losses asymmetrically, which raises the effective tax rate relative to its theoretical level and discourages the riskiest projects (AFTS, 2010). The MRRT and PRRT also have limited coverage, less than two-thirds of the value of mineral exports (iron ore, coal, oil and natural gas), and exclude small firms, thereby creating distortions in investment choices between projects that are or are not subject to the taxes. Lastly, and

most importantly, output-based royalties remain in place at the state level. Royalties are credited to MRRT taxpayers, but they are neither refundable nor transferable, meaning that they are paid in full on projects whose returns fall short of the threshold for MMRT liability. Consequently, the MRRT does not eliminate the greatest inefficiencies, and the recent decisions by some states such as New South Wales, Western Australia, Queensland and South Australia to increase royalty rates have exacerbated the problem. Because state level taxes can be effectively credited to MRRT payers, increasing them will raise state revenues without imposing an additional burden on highly profitable mining projects paying MRRT, but will exacerbate the distortionary impact they have on low-profit mining projects. The GST distribution review, due to report by the end of 2012, is considering ways to remove incentives for states to increase royalties.

To address these difficulties, one option could be to replace royalties by a tax on mining rents based on the federal approach, while leaving the states free to set their own tax rates. This approach would respect the states' sovereignty in tax matters and improve the coherency and effectiveness of the tax system, although at a cost of potentially increasing the volatility of states' mining revenues. This issue, which may complicate their fiscal management, could nonetheless be addressed in the context of the ongoing revision of the fiscal equalisation system, or by a broader reform of the state tax systems, as suggested in the previous *Survey* (OECD, 2010a). The MRRT could also be extended to all mineral commodities and all mining businesses. The adoption of symmetrical tax treatment of profits and losses could be considered, although caution is necessary in weighing the benefit of shifting a greater share of project risk onto public sector against the impact of such measure on budget revenue. Lastly, once the lessons have been drawn from this new scheme, the authorities should consider further raising mineral tax rates if, as appears likely, they remain low relative to the private rent extracted.

Reforms of business taxation should also help adjustment

The tax breaks for businesses, and SMEs in particular, implemented to date or under consideration, in tandem with the reform of mining taxation, should have a positive impact on investment and productivity. The initial measures, estimated to cost only AUD 1.3 billion per annum (0.1% of GDP), will be funded by additional revenue from the MRRT and the PRRT. They include simplified rules for depreciating investments, such as a sharp increase in the ceiling on capital spending (from AUD 1 000 to AUD 6 500) that SMEs can write off immediately. More importantly, in line with the Australia's Future Tax System Review's recommendation and the Business Tax Working Group's recommendations, the asymmetry of the current tax rules applicable to corporate profits and losses will also be reduced through the introduction of a loss carry-back arrangement.

This latter reform, which came into force in July 2012 and provides the possibility of carrying back corporate losses to offset previously taxed profits, is helpful for entrepreneurs who need to alter their business models to meet new challenges and opportunities created by the structural changes underway. As in some other OECD countries, the Australian tax system imposes a levy on businesses when they make a profit but does not provide for refunds in the event of losses, except under certain restrictive conditions. This increases the effective tax rate to above the standard 30% and tends to skew entrepreneurs' behaviour against risky investments and associated innovation efforts, which are particularly needed in the current circumstances (Australian Government, 2012b). The corporate loss carry-back reform will not only have beneficial

effects on the level and quality of capital investment, but, depending on how firms reallocate their tax burdens over time, it may also bolster the automatic stabilisers in the economy. In Australia, these stabilisers are relatively weak by international standards, since they imply that a 1% dip in GDP increases the budget deficit by less than 0.4% of GDP, versus an average of 0.5% of GDP across OECD countries (André and Girouard, 2005). This reform should make the collection of corporate tax more volatile, with a sharper decline in revenue during recessions, due to increased refunds to loss-making firms. To reduce the risks to government revenue and target SMEs, for which the reform is especially important, the losses that could be carried back have been limited to a maximum of AUD 1 million and current-year losses can only be used to offset taxes paid by in the two previous years. However, the ceiling on refundable losses can be adjusted according to economic conditions, if necessary.

As the Australia's Future Tax System Review and the Business Tax Working Group suggest, the reform of the tax treatment of losses could go further. First, the possibility for loss carry-backs, which are currently restricted to corporate firms, which account for only 28% of SMEs, could be extended to unincorporated entrepreneurs. However, the extension of this measure to individual entrepreneurs, who can already set any losses against income from other activities, is likely to generate lower benefits than in the case of corporate firms. Second, it could be desirable to be less restrictive on the eligibility tests applied to firms claiming loss carry-forwards. Currently, carry-forward of losses to reduce future taxable profits is possible only for firms that have changed neither their ownership nor their line of business. However, the "Ownership Test" could be fine-tuned to ascertain whether a change in ownership was motivated by tax considerations or commercial objectives, although this might be difficult in practice. Moreover, the "Same Business Test" is also problematic because it is defined too narrowly and creates uncertainties that prevent taxpayers from knowing in advance whether they will qualify for the provision. These additional changes would be especially useful for young businesses such as innovative start-ups that take risks in the realm of capital investment.

The government has also expressed a welcome aspiration to cut the corporate tax rate currently at 30%, when prevailing fiscal and economic conditions and other Budget priorities permit. A reduction of this tax rate, which is around 5 percentage points above the OECD average, would enhance Australia's attractiveness for foreign investments and boost productivity. However, the scope for lowering this tax rate and the net efficiency gains of this reform might be limited by the government's current plan to fund this measure by adjustments within the business tax system. In its final report released in November 2012, the Business Tax Working Group indicated that a cut of the company tax rate of 2 to 3 percentage points would be needed to drive a significant investment response, which would also be beneficial to productivity and real wages. However, the Working Group has found that there was a lack of agreement in the business community on how a lower corporate tax rate could be funded by business tax base broadening. Reductions in the company tax rate in the 1980s and 1990s were financed by making the business tax base broader and further broadening would involve a removal of longstanding taxation treatment which were not changed by previous reforms or/and would significantly affect small groups of tax payers (Australian Government, 2012c).

As in most other countries, the tax system in Australia incorporates a bias towards debt-financing of capital investment by allowing firms to deduct interest payments on their borrowings from their taxable income but providing no similar deduction for equity-

financed capital spending. This bias is, however, reduced by an imputation system for the taxation of dividends which applies to domestic and New Zealander investors. Nevertheless, it gives firms, especially foreign ones, an incentive to increase their debt-to-equity ratios, and penalises the development of innovating firms, which rarely pay dividends and generally experience greater difficulties in obtaining credit than established companies (Aghion *et al*., 2007). Moreover, it is conducive to the development of financial engineering by multinational enterprises, which can cut their taxes by restructuring debt among their subsidiaries.

Various solutions are available and have been used to address this issue in some countries at some times. A recent proposal is an allowance for corporate equity (ACE), which aims at granting a deduction for a share of the equity that is used to finance capital spending on the basis of long-term interest rates (*Mirrlees Review*, 2011). Such a deduction, which might be conceived as an extended imputation system for the taxation of dividends to foreign investors, would give corporate taxation greater neutrality between sources of funding for capital investment. It would also bolster the scheme's efficiency by making it more similar to a system of rent taxation, with beneficial effects in terms of both growth and quality of investment (Heferen, 2011). "Normal" profits of less than the deduction generated by the ACE would in fact not be taxed, favouring a more symmetrical treatment for business losses and "normal" profits, and facilitating the adjustments of firms undertaking restructuring efforts. As the profitability of firms exceeds the ACE deduction and increasingly resembles a rent, the effective tax rate of corporate profits will rise and gradually get closer to the headline tax rate.

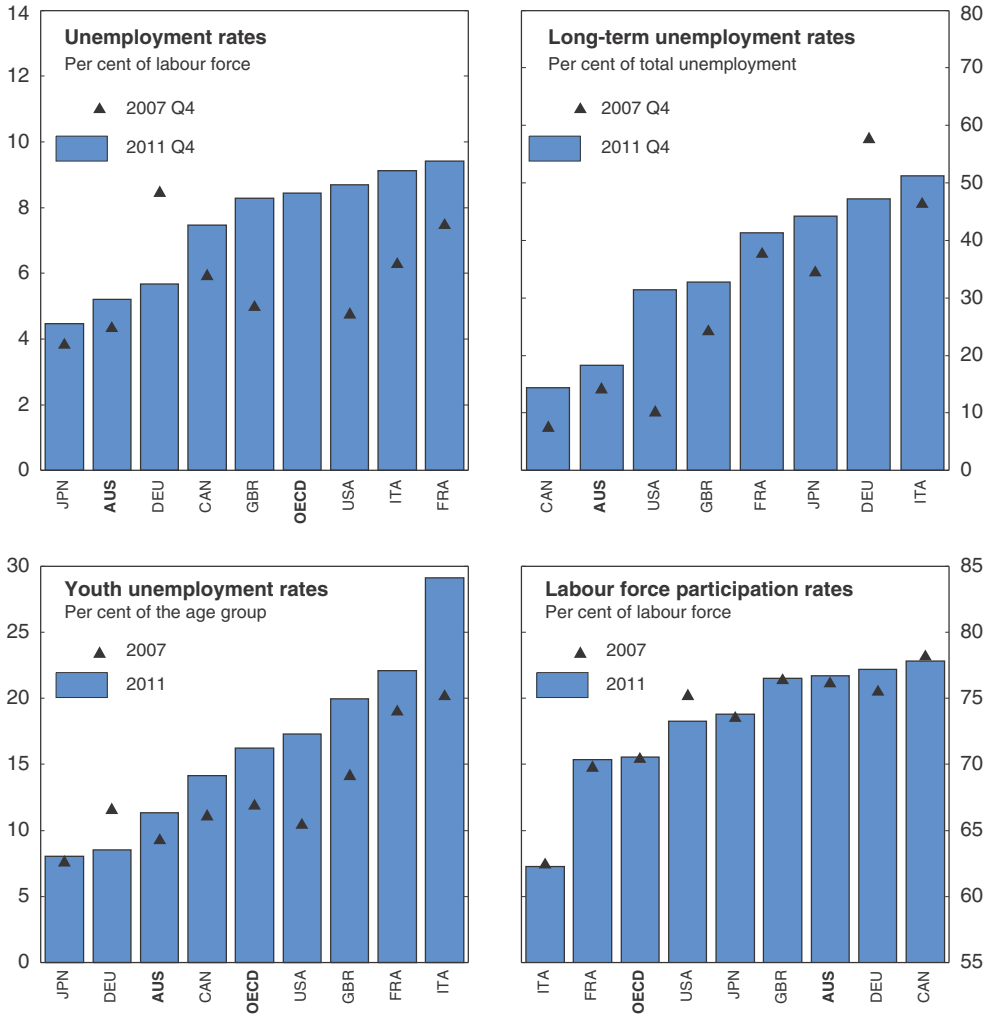
Introduction of an ACE would be a far-reaching reform, the consequences of which should be carefully assessed beforehand. The main difficulty associated with such a reform is its potentially high budgetary cost since it involves a narrowing of the corporate tax base. Such reform option has not been retained at this stage by the Business Tax Working Group, in the short to medium term, since it would be difficult to fund within the business tax system, although some of its features look attractive. According to some estimates, the reduction of the corporate tax base induced by an ACE at 5.6% could reach 20% in Australia and bring about a loss of tax revenue equivalent to approximately 1% of GDP (de Mooij, 2011). Moreover, the introduction of an ACE might encourage businesses, and especially multinationals, to develop tax planning and financial engineering to strengthen the relative share of equity financing and ease their tax burdens (Devereux, 2012).

Until now, a reform of this sort has been implemented by only a few countries, such as Belgium and Brazil, with results that on the whole are in line with theoretical predictions. In Belgium, the reforms seem to have attracted foreign investment from other euro zone countries. Belgium also recorded a dip in its corporate tax revenue in the initial years after implementation (Gérard and Valenduc, 2007). In the short term, these costs could nonetheless be limited if the ACE applied only to new capital investment, although this would make the system more complex. Extending the ACE to the existing capital stock would create a windfall gain for the capital owners without clear economic benefits. In the long term, costs could also be reduced by the reform's positive economic effects on growth, if the reduction in corporate taxation were compensated by a rise in less distortive tax such as consumption taxes (Mooij and Devereux, 2008). However, this would entail wider fiscal reform, which would imply a shift of the tax burden from the corporate to the household sector.

A flexible labour market remains essential to facilitate adjustment to the changes underway

Although Australia enjoys a relatively flexible labour market, with low unemployment and high participation rates compared with many OECD countries (Figure 1.15), employment reallocations are likely to pose a challenge. Two institutions have a particularly important role to play in facilitating the adjustment process: the industrial relations system and the public employment services.

Figure 1.15. **Labour market indicators**



Source: OECD, *Short-Term Labour Market Statistics Database* and *Labour Force Statistics Database*.

StatLink http://dx.doi.org/10.1787/888932737440

The current functioning of the industrial relations system is subject to criticism

The industrial relations system, based on the Fair Work Act (FW Act) that came into force in July 2009, has been the subject of a vigorous debate over the past several months, due in part to the recently completed review of the legislation. The review, required because the FW Act was adopted without a prior regulatory impact assessment, is welcome. In the view of the business community, the FW Act moved too far in favour of employees in recasting the organisation of labour relations, after the Workplace Relations

Amendment ("Work Choices") Act of 2005 had tilted the system to the benefit of employers (OECD, 2008 and 2010a). The unions, on the other hand, while more satisfied overall with the changes made by the FW Act, sought further reforms to improve equity and fairness in the workplace (Box 1.3).

Box 1.3. **Main aspects of the Fair Work Act reform of industrial relations**

Historically, the industrial relations system was extremely bureaucratic and centralised, and based essentially on awards. These were issued by administrative tribunals such as the Australian Industrial Relations Commission (AIRC) or similar agencies at the state level, which in this way set specific minimum wage and employment standards for a broad range of trades and sectors and even firms. Beginning in the mid-1980s, a series of reforms led to decentralisation of labour-management bargaining, introducing the "no disadvantage test" which guaranteed that wage and employment conditions negotiated in firms were to be no less generous, in net terms, than the corresponding awards. In 1996, introduction of the Workplace Relations Act simplified the system further: individual employment contracts (Australian Workplace Agreements, AWAs) were introduced; the tribunals saw their role restricted, as they lost their capacity for arbitration beyond the minimum employment conditions set in the awards; the number of these minimum conditions was reduced to 20; finally, the right to strike and the possibilities of industrial action by the unions were fenced in. In all, these reforms led to a sharp increase in the proportion of employees whose terms and conditions of employment were set by agreements, either collectively or individually. While these agreements represented only 32% of employees in 1990 (compared to 68% for the awards), the rate of coverage rose to 80% in 2002 (PC, 2011).

Although the reforms of the 1980s and 1990s were marked by a certain continuity and a consistent logic, the two waves of reforms since 2000 have had essentially opposing objectives, although both have extended the field of federal legislation in industrial relations to cover nearly all of the private sector (except unincorporated enterprises in Western Australia) and simplified the award system. The *Workplace Relations Amendment (Work Choices) Act 2005* took effect in the first quarter of 2006 and sought to reinforce employers' prerogatives at the expense of employees, while the *Fair Work Act 2009* (FW Act) had the opposite objective. A summary of the main provisions that these two reforms in turn amended is presented below (Borland, 2012; OECD, 2008).

Regulation of the level at which negotiations take place. *Work Choices* favoured the development of individual labour contracts, and eliminated the "no disadvantage" test. Work Choices established a hierarchy such that statutory individual agreements took precedence over the other types of (collective or individual) agreements that had been reached (with or without trade unions), even if these other types of agreement were in force. *The FW Act* does not provide for the making of individual statutory agreements: bargaining must now be conducted collectively at the enterprise level.[1] The no-disadvantage test has been reintroduced in the form of the "better off overall" test. The result of these negotiations has to be approved by the regulator, Fair Work Australia (FWA), which verifies, among other things, that all collective agreements comply with minimum requirements, including the provision that employees are better off overall in comparison with the relevant modern award. Collective agreements and modern awards must also provide for the making of "individual flexibility arrangements" between an employer and an employee. These arrangements do not need to be lodged with FWA and they can be terminated by either the employee or employer with notice of not more than 28 days.

Box 1.3. **Main aspects of the Fair Work Act reform of industrial relations** *(cont.)*

Provisions affecting the process and the format of labour-management negotiations. Work Choices made unions subject to restrictions by limiting their right of entry to businesses and requiring them to conduct a secret ballot of employees to authorise industrial action. The process for stopping unprotected industrial action (action taken outside of negotiations for a collective workplace agreement) was also tightened with the regulator being required to make a determination within 48 hours of receipt of an application. Since the introduction of the FW Act, the limitations on the right of entry of unions into company premises have been softened, but the requirement for a secret ballot before launching a strike has been maintained. Employers, employees and their representatives are now required to negotiate for enterprise agreements in "good faith", which entails compliance with minimum standards of bargaining conduct. The FW Act also reduced the number of regulators overseeing the national workplace relations system from the six agencies under Work Choices to just FWA and the Fair Work Ombudsman.

Minimum terms and conditions of employment. Minimum entitlements defined in awards were a feature of the systems that preceded Work Choices. Work Choices reduced the safety net of minimum terms and conditions of employment previously covered by awards to five statutory conditions provided for in the Australian Fair Pay and Conditions Standard. These five statutory conditions applied to all employers and employees.[2] The FW Act safety net has been broadened to 10 statutory entitlements or national employment standards[3] and 10 additional conditions included in modern awards to reflect the needs of specific industries and/or occupations.

Rules affecting the content of enterprise agreements. Work Choices prescribed a range of prohibited content that workplace agreements could not contain, *e.g.* matters such as the use of contractors or labour hire. The FW Act removed the prohibited content restrictions introduced under Work Choices; however, there are a small number of "unlawful terms" that cannot be contained in agreements.

Unfair dismissal protections. Work Choices removed unfair dismissal protections for employees of firms with fewer than 100 employees. The FW Act restored these protections subject to minimum qualifying periods of one year service for workers in firms with fewer than 15 employees and six months' service for workers in firms with 15 or more employees. In addition, a number of protections previously available under Work Choices were streamlined and broadened in the FW Act to protect workers against discrimination and adverse actions because they have a workplace right.

The reforms of the last decade led to a further decline in the use of awards to set wages: whereas these covered 20% of employees in 2002, the proportion fell to 16% in 2008 and 15% in 2010. There has also been increased resort to company-specific collective agreements, from 38% in 2002 to 40% in 2008 and 43% in 2010. The use of individual contracts, on the other hand, has retreated slightly since 2008, from 44% of employees (including individual entrepreneurs) to 41% in 2010, a level close to that of 2002.

1. Although AWAs are no longer authorised, individual common-law contracts are possible, as long as the agreement complies with the national employment standards and any award conditions. Workers earning more than 100 000 Australian dollars (AUD) per year are free to negotiate individual common-law contracts with no reference to the 10 conditions set in the awards.
2. These five minimum conditions relate to the minimum wages, ordinary weekly working hours (38 hours) and entitlements to annual leave (four weeks), parental leave and personal leave.
3. These standard conditions cover the maximum workweek; the right to request flexible working arrangements; the right to parental leave or compassionate leave; the right to annual vacation and a minimum number of holidays; seniority leave; and rights concerning prior notice and compensation in case of contract cancellation or layoff; access to information from the FW Act on the detail of workers' rights and the possibility of requesting assistance.

The key shortcomings of the industrial relations system as seen by business associations relate to what are regarded as excessive constraints on firms:

- The system is too compliance-oriented. The obligation to bargain in "good faith" introduces a procedure that firms find cumbersome to manage (BCA, 2012).
- The unions have too much latitude for bargaining over certain managerial prerogatives. The FW Act, for example, allows employees to seek to include job security provisions in agreements which place constraints around the use of contractors (BCA, 2012).
- Layoff procedures increase costs and uncertainties. This affects SMEs in particular, as they are now exposed to unfair dismissal claims, and they often feel themselves constrained to pay "go-away money" to avoid the high costs of litigation (ACCI, 2012). There seems to be a sharp asymmetry between the cost to employees of lodging an unfair dismissal complaint (AUD 62.4) and the burden on firms when a formal hearing or legal representation of parties is needed if conciliation does not succeed.[1] Another source of criticism concerns the potentially abusive resort to complaints of discrimination ("adverse action claims"), which, in contrast to "normal" recourse against unfair dismissals, can give rise to financial penalties with no ceiling.
- It is difficult to negotiate firm-specific agreements favourable to productivity, including individual flexible arrangements (ACCI, 2012; PC, 2011). Moreover, the provisions requiring employers commencing a genuinely new business to bargain with a relevant union for a greenfield agreement (*i.e.* when they have not yet engaged any employees) make appropriate and timely agreements more difficult to reach at a time when large new investments projects are planned.

Some sectors, such as retail trade, also seem to have specific difficulties to manage employment conditions (PC, 2011). Excessively high overtime rates and the three-hour minimum work time required to justify temporary employment limit the capacity of retailers to adapt to observed shifts in consumer behaviour. These restrictions prevent many firms from operating a profitable business on holidays, whereas households with increasing concerns for the loss of free time, place great value on this shopping opportunity. If it is not available they will turn to the Internet. Many students seem ready to work for a few hours, especially on weekends, for wages that pose no threat to retailers' profitability.

Greater effectiveness of employment services would reduce adjustment costs

Australian employment services are organised differently from those in most OECD countries. While the unemployment benefit is centrally managed by a public agency (the Department of Human Services), these services (which were called Job Network from 1998 to 2009 and Job Service Australia, JSA, since 2009) depend on private providers who receive financing from the federal government in proportion to their success in returning the unemployed to work ("pay to outcomes"). Relying on private-sector delivery of employment services can in principle be good for encouraging competition, increasing responsiveness to the needs of jobseekers, and containing costs. Linking service providers' funding to outcomes rather than to inputs should also encourage innovation on their part. This system has fostered competition and has contained the cost of delivering a standardised service, but the objectives of innovation and responsiveness to user needs have, according to most experts, not been achieved, even if the JSA model is delivering better results than previous arrangements (ACOSS, 2012; DEEWR, 2011a).[2] In 2011, 60% of

the New Start Allowance (unemployment benefit) recipients had been drawing the payment for over 12 months, and a third of recipients were aged over 44.

Private service providers naturally have an interest in selecting those who are easiest to place (cherry picking) and in "parking" the harder-to-place jobseekers, to achieve quick employment outcomes at low cost. It is also difficult to encourage the most disadvantaged jobseekers to take an active role in retraining, yet this is essential for integrating them into the labour market. Lastly, the authorities need to rein in the "deadweight cost" associated with paying private service providers for assistance to jobseekers who do not need it.

The incentive issues explain the reform efforts of the past, as well as current problems. To avoid cherry picking, the authorities have revised their method of funding. Both the funding model and the "Star Rating" performance assessment, which the Employment Department uses to assess the relative performance of service providers, have been adjusted over time to better incentivise the active and effective servicing of the most disadvantaged, with signs of improvement in their labour market outcomes. In particular, the use of regression analysis within the Star Ratings to control for differences in job seeker characteristics acts to promote the active servicing of all jobseekers. The effect of these changes has been observed in relation to the improvement in labour market outcomes achieved for the most disadvantaged. Services targeted towards job seekers with severe vocational and non-vocational barriers to employment (the Personal Support Programme) achieved a 15% employment rate under the previous arrangements compared with an employment rate at around 30% more recently (DEEWR, 2009 and 2011b). Since 2003, these changes also include payment for services to the unemployed and financing of back-to-work programmes (Employment Pathway Fund, EPF). In FY 2011/12, payments for the placement of jobseekers ("outcome payments"), represented 29% of suppliers' funding; 42% was in the form of service fees, and the remaining 29% were reimbursements for services purchased or delivered funded through EPFs. Thus there has been a gradual shift toward a system that gives the authorities more control over inputs to ensure a minimum offer of services to disadvantaged jobseekers.

Yet this has increased the need to oversee the activity of the service providers and has made the system more bureaucratic: repeat interviews for problem jobseekers, for example, usually yield little in terms of landing them a job. On the other hand, the financing of private service providers also depends on the ongoing assessment of their performance, which keeps up healthy pressure on them to be efficient. The "Star Rating" performance assessment is published every three months to help jobseekers compare outcomes of service providers; it allows the providers to assess their performance *vis-à-vis* their competitors; and it is used by the Employment Department to inform purchasing decisions of employment services. Nevertheless, efforts seem desirable to further refine this statistical evaluation system and ensure it has no bias against providers handling hard-to-place unemployed or less disadvantage jobseekers (OECD, 2012c).

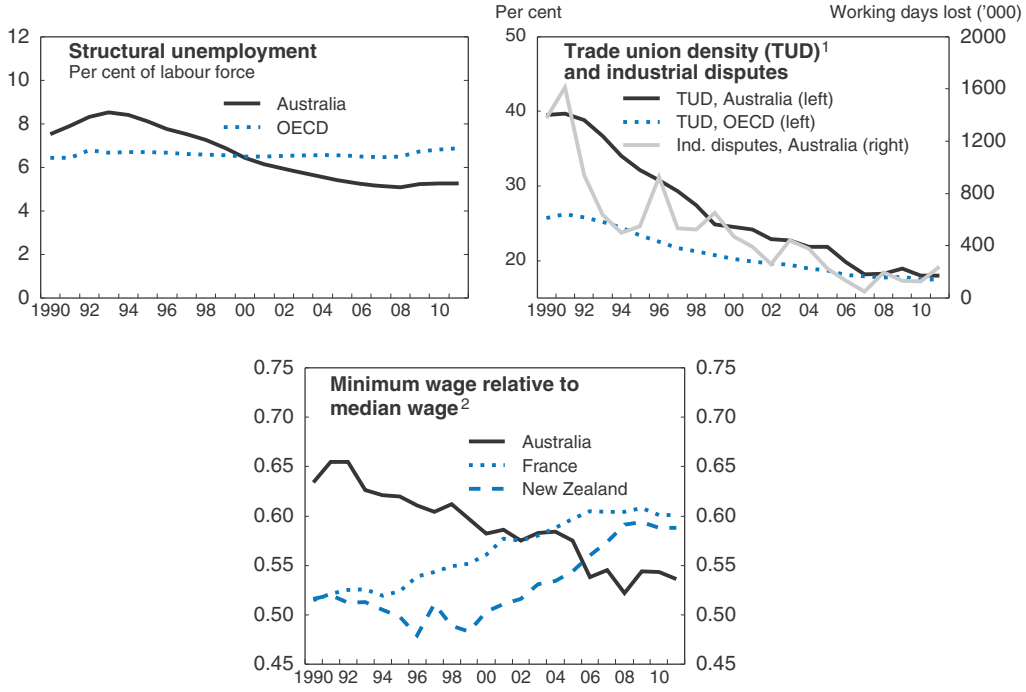
With the creation of the JSA in 2009, the emphasis is now on identifying the needs of jobseekers at the outset and steering them upon their arrival at the Department of Human Services to one of the four levels of assistance ("employment assistance streams") offered by the employment services. While this is a welcome approach, the specific system in place seems too complicated (ACOSS, 2012; DEEWR, 2011a). Moreover, it could further promote active engagement of jobseekers, who must, for example, choose a service provider within two days after they enrol with the Department of Human Services. JSA has

also retargeted its funding toward the most disadvantaged jobseekers, and it has rationalised its organisation by rolling seven previously separate programmes into a single system (DEEWR, 2011a). JSA resources, however, have been cut in relation to those used in these seven programmes. This has led JSA to restrict services, not only for the less disadvantaged jobseekers, already inadequately served (OECD, 2010a), but also for persons facing serious barriers, for whom the level of assistance seems insufficient and drops off sharply after three years.

Nevertheless, the labour market has been functioning fairly well to date

The industrial relations reforms of the last decade have had an impact on labour market institutions. The unionisation rate has trended down since the early 1990s, but has stabilised at around the OECD average since 2008 (Figure 1.16). This development has coincided with a slight upswing in wage disputes, the number of which remains however historically low. The minimum wage in relation to the median wage, which had fallen by around 15% between 1990 and 2007, has also stabilised. Moreover, according to OECD estimates, the steep decline in the structural unemployment rate since the beginning of the 1990s eased around 2008, although the subsequent rise in that indicator has been slight, and smaller than the OECD average (Guichard and Rusticelli, 2011). The number of unfair dismissal claims lodged in the federal workplace relations system has nearly tripled since the introduction of the FW Act. However, it must be noted that the FW Act restored unfair dismissal protections to employees of firms with less than 100 employees. This increase also reflects the broader coverage of the federal workplace relations system due to

Figure 1.16. **Structural labour market indicators**



1. Number of wage and salary earners that are trade union members, divided by the total number of wage and salary earners.
2. Of full-time workers.

Source: OECD, *Trade Union Density Database; Minimum Wages Database; OECD Economic Outlook Database.*

StatLink http://dx.doi.org/10.1787/888932737459

referrals of workplace relation powers from state governments. The success rate for unfair dismissal claims at arbitration in the federal system has risen (Freyens and Oslington, 2012). This rate, which was 33% under the Work Choice system, rose to 51% under the FW Act (or, comparing like with like, 41%, if only firms with over 100 employees are considered). While the increase in unfair dismissal claims may be attributable to the FW Act changes, the period also coincides with the onset of the global financial crisis, which may have increased the volume of dismissals, and unfair dismissal claims.

The loosening of legal protection by the Work Choice Act and its subsequent toughening by the FW Act seem to have had a minimal impact on employment (Freyens and Oslington, 2007 and 2012; Borland, 2012). The average compensation ordered at arbitration to workers unfairly dismissed appears to be similar under the FW Act and the previous regimes, at around three months' salary, compared to a potential maximum of six months as authorised by law. However, the statistics disclosed by FWA are inadequate for a thorough evaluation of the stiffening of employment protection legislation: comprehensive data on the outcomes of claims settled through conciliation is not available, although they account for 80% of all cases. Only partial information was recently provided by FWA on the outcomes of conciliation, indicating that of the matters settled at this stage, 26.7 % were settled without any monetary payment in the FY 2010/11 (Australian Government, 2012d). Moreover, where payments were made at conciliation stage they were usually modest, with 50 per cent under AUD 4000, and they often included settlement of outstanding entitlements. However, the frequent recourse to conciliation may well be related to the entrepreneurs' choice to avoid lengthy and more costly procedures independently of their likelihood to win (Collier, 2012).

Detailed information is also lacking on the success rate of adverse action complaints and the associated financial penalties. However, the annual number of these complaints has remained much lower than the comparable number of applications under the final year of the Work Choices Act and, in FY 2010/11 about two-thirds of these applications were resolved or withdrawn during the conciliation stage (Australian Government, 2012d).

More broadly, the labour market has continued to function well since the introduction of the Work Choice and FW Act reforms. The unemployment rate and the proportion of long-term unemployed have remained low in comparison to other OECD countries, even after the financial crisis (Figure 1.15). Available empirical studies suggest a flattening of the Phillips curve since the year 2000 compared to the previous period (inflation is less responsive to changes in unemployment), but they do not point to any moderation in the inflation/short-term unemployment dilemma over the last decade (Borland, 2012). There has been very little if any movement in the Beveridge curve for Australia over the period since 2000 indicating no significant shift in structural unemployment (OECD, 2012d). Spill-overs in wage setting across sectors and from mining to non-mining states have been weaker in the current mining boom than in previous ones. The labour market has also shown strong resilience, with an endogenous reduction in hours worked, during the global financial crisis when demand contracted sharply. Finally, although productivity growth has declined substantially, this phenomenon started before the introduction of FW Act and Work Choice (Chapter 2).

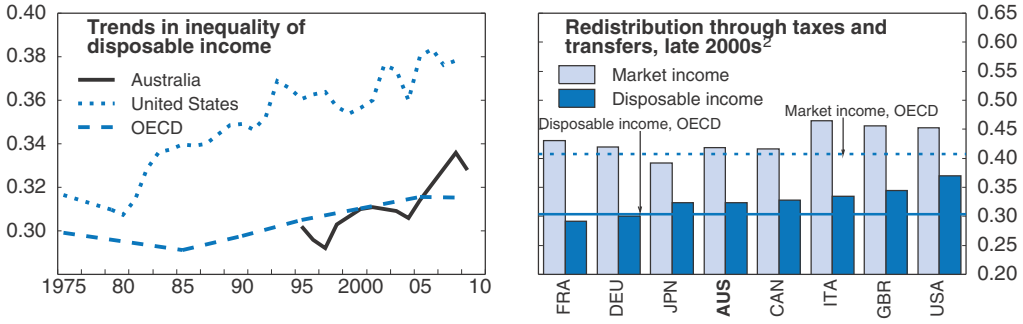
It is thus difficult to establish a clear causality between the industrial relations system and this weaker productivity performance, an assessment broadly consistent with the conclusions of the independent post-implementation review of the functioning of FW Act.

It must be recognised, however, that since the introduction of the Work Choice and FW Act the business climate has not been conducive to the search for efficiency, because of the initial windfalls of the mining boom – something that is now changing and may explain the criticism voiced about the FW Act by firms increasingly preoccupied with the need to boost their efficiency.

On the other hand, the development of labour market institutions since 1990, together with the impact of other factors such as the rising demand for skilled labour associated with technological change, seem to have exacerbated income inequalities among the working-age population (OECD, 2011). The widening of disparities in this area has outpaced the OECD average since 2000, and their absolute level was also higher in 2010 (Figure 1.17). In this context, the successive industrial relations reforms of recent years reflect the search for a balance between the need for labour market flexibility and the concerns for equity and social justice, to which Australian society has traditionally aspired, not only for their intrinsic value but also for political economy reasons. The system of industrial relations is in fact at the core of income redistribution mechanisms in the economy, and a balanced functioning of the system is important in garnering public support for structural reforms.

Figure 1.17. **Income inequality**

Gini coefficient[1]



1. The Gini coefficient ranges from 0 (when all people have identical incomes) to 1 (when the richest person has all the income). Market incomes are labour earnings, capital incomes and savings. Disposable income is market income plus social transfers less income taxes. Incomes are adjusted for household size. Data refer to the working-age population.
2. Late 2000s refer to a year between 2006 and 2009.

Source: OECD (2011), *Divided We Stand: Why Inequality Keeps Rising*, OECD Publishing, Paris.

StatLink http://dx.doi.org/10.1787/888932737478

The authorities should adopt a prudent approach to further reforms as labour markets are working fairly well

Although the economic changes underway raise concerns among social partners, the existing framework of decentralised bargaining between employers and employees still seems to be yielding good results, judging from the labour market performance. The structural labour market indicators do not point to significant imbalances in the organisation of labour relations in favour of employees since the introduction of FW Act. This legislation has been in place for a relatively short period and the repeated regulatory changes of these last years, which generated adjustment costs to firms, especially to SMEs, should not be underestimated. It thus seems desirable to avoid further major reforms of its institutions in absence of obvious need. This view seems consistent with the conclusions

of the independent panel on the functioning of FW Act which has not suggested major modification to the industrial relations system.

However, this panel also put forward a number of mainly technical recommendations to alleviate some constraints affecting the flexibility of the bargaining mechanisms or the equity of the system that were not intended by the legislation. These recommendations, on which the authorities should provide an answer in the coming months, are broadly welcome, although they might be somewhat adjusted. They relate to the following main points:

- Promoting more flexible arrangements responding to specific individual needs of employees and employers. Although the reintroduction of statutory individual contracts has not been proposed by the panel, suggestions have been provided to make the individual flexibility arrangements (IFAs) easier to access and more attractive. For instance, it has been suggested that all firm agreements include the model flexibility term allowing at least variations in overtime rates, leave loading and work arrangements, and that the IFAs expressly permit the provision of non-monetary benefits to an employee in exchange for monetary benefits.
- Increasing the role of FWA, giving it arbitration powers in the case of greenfield negotiations. While this proposed extension of regulatory powers might facilitate agreements in a suitable time frame, it runs counter to past trends of reduced arbitration by third parties in favour of direct discussions between employees and employers. To encourage efficient negotiation of initial (greenfield) agreements with reasonable terms and within a reasonable time frame, the authorities might consider allowing for non-union rather than only union greenfield agreements, rather than extending the arbitral role of FWA, as is suggested by the review.
- Reducing the risk of excessive and improper recourse to unfair dismissal procedures. Proposed provisions include some streamlining of the procedure to resolve unfair dismissal claims, as well as stronger powers for FWA to reject unfair dismissal applications in some circumstances. These proposals could be complemented with a re-examination of the structure and distribution of litigation costs relating to unfair dismissal disputes between employees and firms to ensure that they do not encourage abuse of this remedy, without creating a barrier to industrial justice for workers. The current filing fees for employees are quite low, at AUD 62.4, and they can be waived in case of financial hardship. It is also important that FWA should make available all the statistical information needed to assess the impact of labour protection legislation.
- Improving access to flexible working time arrangements.

Efforts are also warranted to reduce the confrontational approach opposing business sector and unions concerning the functioning of the industrial relations system to promote a smoother employment reallocation required by the structural adjustments underway. A more co-operative climate to deal with the efficiency/fairness dilemma opposing social partners would benefit both employers and employees and favour employment-driven innovation with positive effects on firms' productivity and competitiveness (Chapter 2). It is important not to underestimate the capacity for innovation and inventiveness embodied in workers' experience and human capital (Hoyrup, 2010).

To support a more co-operative approach, the Fair Work Act Review panel suggested that FWA and the Fair Work Ombudsman take a more active role to encourage more productive workplaces. This would include identifying and promoting best practices in the

productivity enhancing provisions of agreements, developing model productivity clauses for awards and agreements and sponsoring training workshops for both employees and employers on how to enhance workplace productivity. These suggestions could be usefully complemented by a better identification of the concrete arbitration needs of the efficiency/fairness dilemma taking into account sectoral specificities, as was recently suggested for the retail sector by the Productivity Commission. While the level of overtime rates and the limits on part-time hiring constitute constraints for the employers of this sector, the latter could also better use current workplace relations flexibility to examine with their employees how their workplace practices can be improved to increase productivity and, thus, incomes (PC, 2011). In the same spirit, it could be useful to investigate sector-specific working conditions affecting the flexibility and equity issues negotiated between employers and employees. It is likely that these issues in the manufacturing, mining, finance and tourism sectors will vary according to their characteristics and constraints. Better information on particular flexibility needs and equity issues in the various sectors could help move the debate forward by focusing on concrete questions, which could facilitate negotiations and compromises.

There is also room to make the employment services more effective, although the authorities do not intend to reform JSA in the near future, as it depends on private providers financed by the federal government with the current contracts running until 2015. This is particularly important for mitigating the social costs of adjustment for displaced workers. The JSA in fact performs two distinct tasks, which could usefully be separated because they respond to different concerns: a relatively standardised employment service for jobseekers who are at no particular disadvantage, and more intense and sometimes multidisciplinary, individualized services for the currently or potentially long-term unemployed. Dividing the organisation of services according to this typology could be more efficient if, for example, it led to greater specialisation among private service providers. Consideration should also be given to a mechanism for remunerating service providers that is more closely linked to the "Star Rating" performance evaluation system of the Employment Department. This system should be closely monitored to minimize the risk of statistical bias in evaluations and attention should be paid to provide adequate assistance to all unemployed, both the easiest and the hardest to place (OECD, 2012c). Such a change would entail a reduction in the role of service fees, which now encourage generally inefficient micromanagement of private providers' services by the federal authorities and increase the volume of red tape. To spur performance, the funding of employment services could be linked to jobseekers, letting them shop among competing providers for services that meet their needs.

Moreover, the authorities could consider putting stronger emphasis on active labour market policy (ALMP). In this perspective, the strengthening of assistance from employment services to the very long-term unemployed, together with tougher participation obligations as from July 2012, is a step in the right direction. Increasing the resources devoted to ALMP could also be worth considering as such spending is likely to be effective and could help compensate the losers from structural adjustment. If they are well targeted, resources put on ALMP may well have a relatively high rate of return as it would help reduce social spending required to support the long-term unemployed and bring in other quantifiable benefits to the community (including in terms of reduced delinquency). Developing quantitative analyses in this domain would be worthwhile to provide a strong basis for further policy improvements.

Box 1.4. **Main policy recommendations**

Medium-term fiscal policy

- Refrain from increasing or extending government assistance to industries, including the automotive sector.
- Consider creating a stabilisation fund together with a shift in medium-term fiscal strategy to better insulate public spending decisions from revenue changes caused by volatile terms of trade.
- Promote smooth activation of the new Parliamentary Budget Office (PBO). Once its role and credibility are established, consider expanding its functions to fill the information gap on the states' finances. For instance, ask the PBO to extend the Intergenerational report to all government levels and examine government programmes where federal and state responsibilities overlap such as in education and health where there are risks of duplication and waste.

Tax reform

- Pursue business tax reforms including reducing the corporate tax rate and a possible extension of the loss carry-back scheme to unincorporated firms.
- Continue to analyse solutions to the asymmetric taxation of corporate debt and equity, including the introduction of an "allowance for corporate equity".
- Broaden the mineral resource rent tax (MRRT) coverage to all commodities and businesses. Consider replacing state royalties by a mining rent tax modelled on the federal approach, allowing states to set their own tax rates. In the longer term, ensure that levies on the private rent extracted from mineral resources are adequate.

Labour market reform

- Preserve the existing framework of direct and decentralised bargaining as it has yielded good results so far. Avoid substantive changes to the framework to minimise the costs of adjusting to frequent regulatory changes.
- Consider minor changes to the industrial relations framework including allowing employers commencing a genuinely new business to negotiate collective agreements both directly with potential future employees and/or unions.
- Ensure more complete disclosure of information to evaluate the impact of the recent tightening of employment protection legislation. Rebalance the distribution of litigation costs of unfair dismissal procedures between employees and employers to reduce incentives to abuse them.
- Investigate sector-specific working conditions affecting the flexibility and equity issues negotiated between employers and employees to help move the efficiency/fairness debate forward and focusing it on practical questions that are potentially easier to solve through negotiations and compromises.
- To increase the effectiveness of the employment services, more closely link their funding to jobseekers, possibly by introducing a voucher system. Consider linking the remuneration of service providers more tightly to the "Star Rating" performance evaluation system.
- Envisage separating the offer of standardised services for jobseekers with no particular disadvantage from the individualized services for the currently or potentially long-term unemployed.

Notes

1. Information concerning the total costs to employers and employees of unfair dismissal procedure when conciliation cannot be found is not readily available. According to one estimate, a three-day hearing by FWA may involve legal costs for the firms amounting to up to AUD 10 000-15 000 (Keen and Lawson, 2012). On the other hand, if matters are not resolved at conciliation, employees have not only to bear the filing fees (AUD 62.4), but also the costs of legal representation. In practice however, the vast majority of unfair dismissal claims are settled quickly and flexibly with telephone conciliation and do not require formal hearings or legal representation (Australian Government, 2012d).
2. The Government is aware and supportive of the need to foster innovation in employment service delivery. It has provided funding through the Innovation Fund and the JSA Demonstration Pilots to encourage innovative approaches to servicing job seekers. The results of projects funded by these two measures will be considered in future program development and contract arrangements.

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Chapter 2

Boosting productivity

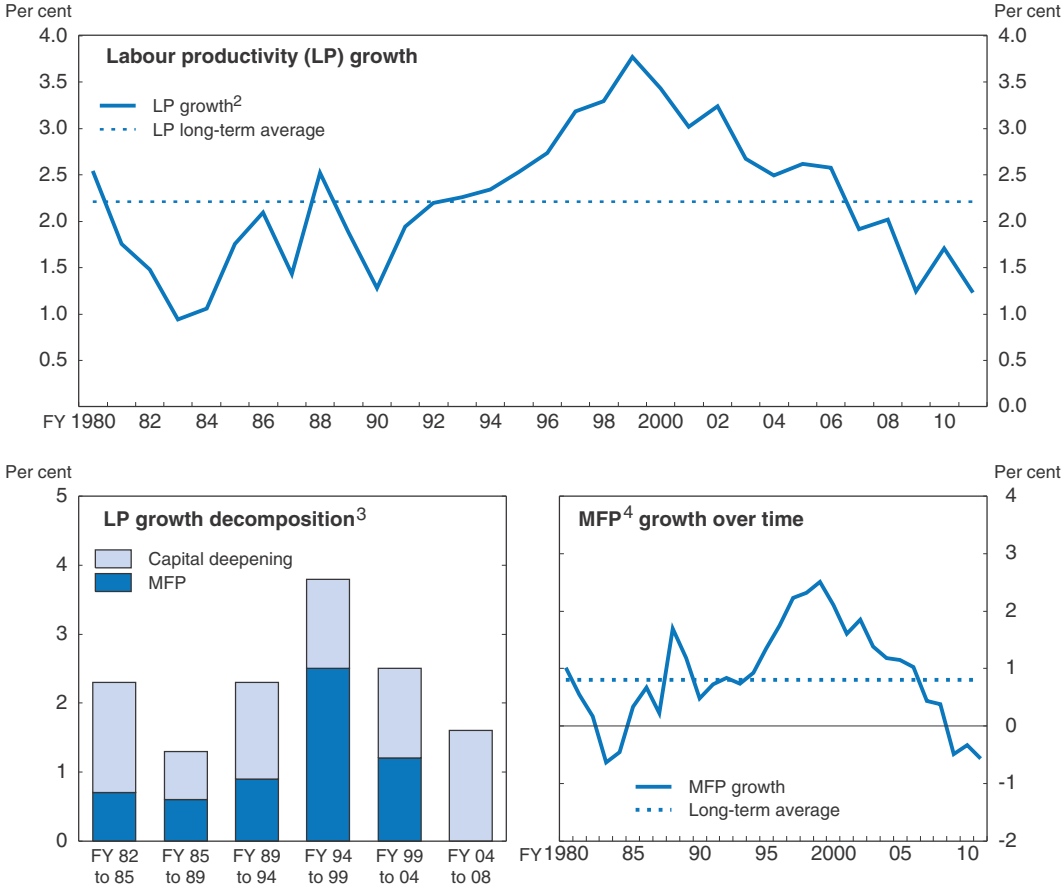
Australia's productivity growth has decelerated markedly around the turn of the century. Part of the decline is probably temporary, but raising multifactor productivity is key to ensure that living standards continue to grow strongly, especially if the currently strong terms of trade weaken over time. Recent efforts by the government are welcome. Ensuring responsive, high quality, vocational and higher education systems is indispensable to long-term growth. Raising the completion rate of vocational students, and enhancing the level of collaboration among the key innovation players are priorities. The productivity-enhancing effects of infrastructure could be boosted by more effective and strategic planning, new sources of funding, and better use of existing capacity. Efficient pricing for infrastructure services and rapid progress towards harmonisation of regulations across states would boost competition and productivity.

Productivity growth is a key ingredient for future broad-based growth and maintenance of living standards. This chapter will discuss the recent sharp slowdown in productivity growth in Australia, its determinants and potential solutions to improve productivity performance.

A sharp downturn in productivity gains

Australia's labour productivity growth – the main driver of income growth in the 1990s – has slowed markedly since around the turn of the century, coming off not only from its 1990s-peak but also falling below its long-run average. This trend is evident both for the whole economy and for the market sector (which accounts for approximately three quarters of total output) for which productivity is well measured (Figure 2.1). This reflects

Figure 2.1. **Productivity in the market sector**[1]



1. Twelve-industry market sector. The market sector includes the whole economy apart from health, education, defence, public administration, as well as property, business and personal services within the business sector which are difficult to measure.
2. Five-year moving average.
3. Only complete productivity cycles are shown.
4. Multifactor productivity.

Source: ABS, Cat. Nos. 5204.0 and 5206.0.55.002.

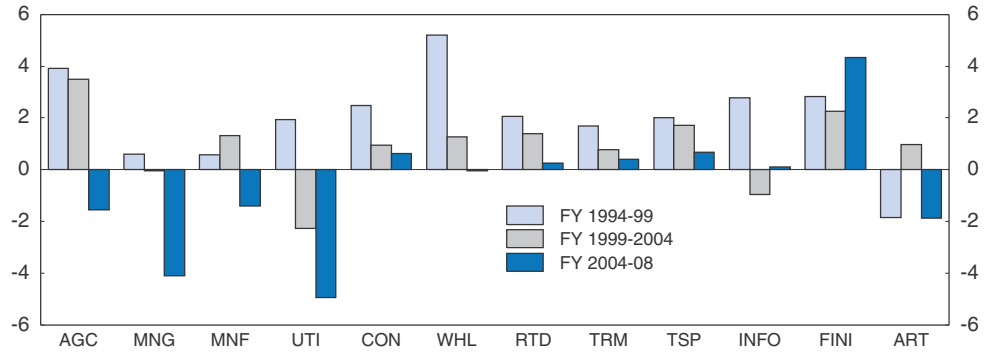
StatLink http://dx.doi.org/10.1787/888932737497

a sharp slowdown in multifactor productivity (MFP) growth, while strong business investment in the mining sector increased capital deepening. Comparisons across the Australian Bureau of Statistics (ABS) "productivity growth cycles", which abstract from the influence of the business cycle, suggest that after a peak of the 1990s MFP growth gradually fell to zero in the last complete cycle and has continued to decline since then (Figure 2.1).

The multifactor productivity slump was felt broadly across the economy (Figure 2.2). MFP growth fell in most industries, although contributions vary (Figure 2.3). Manufacturing (0.5 percentage points) and mining (0.4 percentage points) contributed most to the deceleration of aggregate MFP between the last two complete cycles, according to OECD analysis. But other industries such as agriculture, utilities (electricity, gas, water and waste services) and retail trade also contributed to the slowdown. Inter-state comparisons, though difficult to achieve because of the different industry structures, provide further

Figure 2.2. **MFP growth by industry**[1]

Annual average growth in log changes



1. Twelve-industry market sector. AGC: agriculture; MNG: mining; MNF: manufacturing; UTI: utilities; CON: construction; WHL: wholesale trade; RTD: retail trade; TRM: accommodation & food services; TSP: transport; INFO: information and technology; FINI: finance and insurance; ART: art & recreational services. Only complete productivity cycles are shown.

Source: ABS, Cat. Nos. 5204.0 and 5206.0.55.002 and unpublished ABS data.

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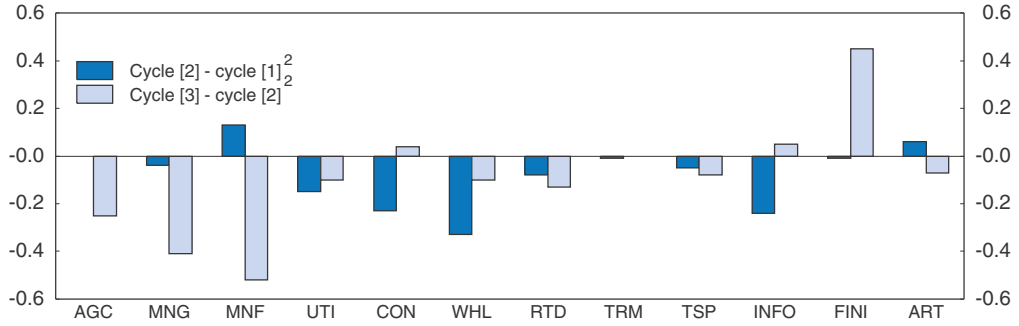
Figure 2.3. **Industry contributions to MFP slowdown**[1]

Annual average growth in log changes



1. Twelve-industry market sector. AGC: agriculture; MNG: mining; MNF: manufacturing; UTI: utilities; CON: construction; WHL: wholesale trade; RTD: retail trade; TRM: accommodation & food services; TSP: transport; INFO: information and technology; FINI: finance and insurance; ART: art & recreational services. Only complete productivity cycles are shown.
2. Cycle [1]: FY 1994-99; cycle [2]: FY 1999-2004; cycle [3]: FY 2004-08.

Source: ABS, Cat. Nos. 5204.0 and 5206.0.55.002 and unpublished ABS data.

StatLink http://dx.doi.org/10.1787/888932737535

evidence that the productivity slowdown was felt broadly across the economy (VCEC, 2011; Cunningham and Harb, 2012).

What caused the productivity slump?

There is no single explanation for the deterioration of Australia's productivity performance in the 2000s. Rather, the decline in MFP growth seems to reflect a combination of factors ranging from special developments in a few key industries to more systemic factors, although the relative contributions of potential drivers is subject to some debate. Overall, much of the slowdown in MFP growth can be attributed to the mining boom and induced structural adjustment of the economy, but other factors such as the fading of the impact of the reforms undertaken in the 1990s, or capacity constraints within the economy, also need to be taken into account. Measurement error may also be explaining some part of the weakening in productivity.

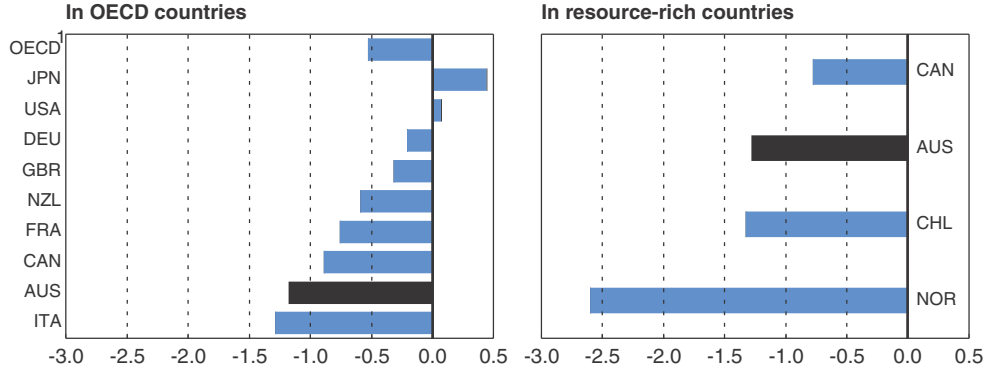
Sectoral aspects of the slowdown

Sectoral explanations of the slowdown tend to emphasise the sharp productivity declines in mining, agriculture and utilities driven largely by special circumstances (Eslake, 2011). The three sectors collectively are estimated by OECD to account for about half of the decline in MFP growth between the two last productivity cycles. This is calculated as a share of the group of industries that made a negative contribution, based on the Parham (2012) methodology. Results are sensitive to the methodology adopted and productivity measure used. Focussing on labour productivity, Eslake (2011) estimates, for example, that the mining and utilities sectors account for less than 10% of the decline in overall market sector productivity growth over the past decade.

The weakening in productivity has been more pronounced in Australia than in most OECD countries, although it is broadly in line with the experience of some other resource-rich countries (Figure 2.4). Comparisons of the industry productivity patterns across the three resource-endowed countries (Australia, Canada and Norway) for which data are

Figure 2.4. **MFP growth slowdown**

Difference of MFP average growth between the 1990s and the 2000s



1. The OECD aggregate includes only 18 members for which data are available.

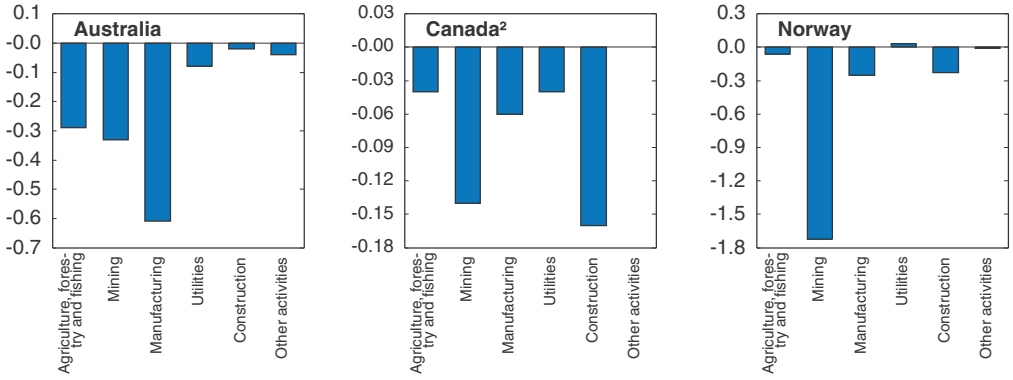
Source: OECD, *Productivity Database* and The Conference Board, *Total Economy Database*, January 2012, *www.conference-board.org/data/economydatabase/*.

StatLink http://dx.doi.org/10.1787/888932737573

available indicate a strong contribution of the mining sector in each case, suggesting that part of the productivity slump in these specific countries can also be related to the mining-related commodity boom (Figure 2.5).

Figure 2.5. **Industry contributions to MFP slump in resource-rich countries**[1]

Percentage points



1. The slowdown refers to period 2003-07 compared to period 1999-2003.
2. Data for Other activities not available.

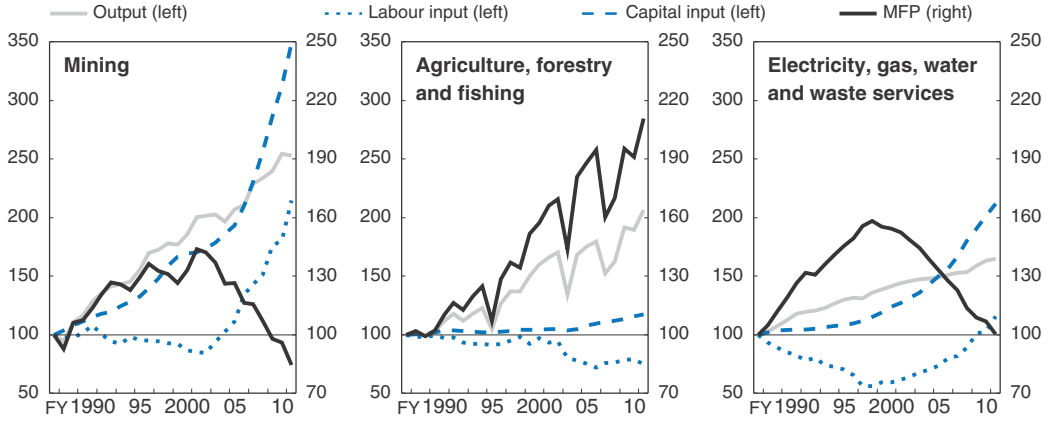
Source: ABS, Cat. No. 5260.0.55.002 with unpublished data and OECD, *Industry Productivity Database*.

StatLink http://dx.doi.org/10.1787/888932737592

In the Australian mining sector, soaring profits led to a massive injection of capital and labour (PC, 2009) (Figure 1.2 and Figure 2.6). Yet, due largely to the lags between investment in new capacity and full production, this strong input growth was not matched by output growth, implying a sharp decline in measured mining productivity. Topp *et al.* (2008) estimate the average lag at around three years. Approximately one-third of the decline in mining MFP between FY 2000/01 and FY 2006/07 was attributable to this effect, according to the study, which implies a "pay back" in the years to come, others things being equal (PC, 2009). Another part of the decline was caused by exploitation of more marginal resource deposits as commodity prices rose, requiring the use of more input to produce a given

Figure 2.6. **MFP decomposition in the three sectors**

Index FY 1986 = 100



Source: ABS, Cat. No. 5260.0.55.002.

StatLink http://dx.doi.org/10.1787/888932737611

volume of ores and metals. This impact will persist for as long as mineral prices remain high by historical standards (Eslake, 2011).

Productivity in agriculture and utilities has been influenced by drought. Its impact on the agricultural sector was felt particularly strongly in the last complete productivity cycle (FY 2003/04 to FY 2007/08), reflecting a sharp fall in output by more than 15% in FY 2006/07 that was not compensated by adjustments in inputs (PC, 2011a; Parham, 2012) (Figure 2.6). Both output and productivity have recovered in more recent years.

In utilities, drought conditions imposed restrictions on water usage, lowering measured output, whilst inducing significant investment in water infrastructure (including the installation of desalination plants) to guarantee water supply (Topp and Kulys, 2012; Parham, 2012) (Figure 2.6). At the same time, growing demand for energy consumption has induced major programmes of capacity augmentation and renewal, which required new capital investments but have not yet translated into additional output due to lags between installation of new capacity and full utilisation. Technological changes in response to climate-related issues may have also affected adversely productivity in utilities, according to Topp and Kulys (2012), as they represent an increase in input requirements without the same increase in output. Continued shifts away from coal-fired power to higher cost sources are expected to further reduce the level of MFP in the utilities sector, at least until the new technologies become the main sources of supply. Unmeasured quality improvements in output resulting from changes in standards and regulations (for example, higher standards for potable water) also worsened measured MFP since they raise the average cost of production but do not show up as an output increase (PC, 2011a; Topp and Kulys, 2012).

There has also been a broader slowdown in MFP growth, with varying industry contributions, reflecting to a large extent the resource-boom induced adjustment of the economy that goes beyond the mining sector (Figure 2.2, Figure 2.3). Manufacturing, in particular, contributed about a third of the MFP slump between the last two complete productivity cycles, following the appreciation of the dollar, which has affected competitiveness. Manufacturing output has remained broadly unchanged since the onset of the mining boom in 2003, while inputs, and specifically productive capital stock, have increased (Figure 2.7). It is possible that there are different trends within the sector, however, that may reflect mining-related investment in some segments and output declines in others (Parham, 2012).

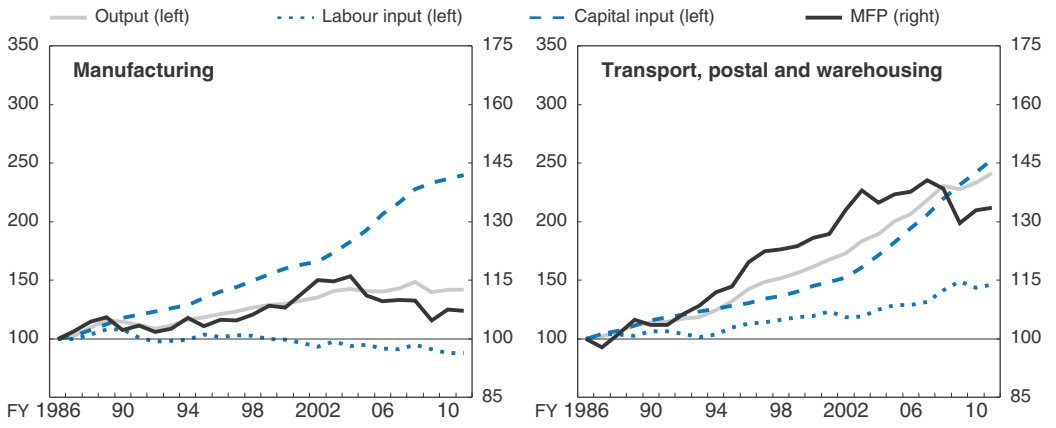
Productivity developments in certain service sectors may also include a mining-related component. It might be the case, for example, that increased input use in the transport sector reflects investment in transport infrastructure (Parham, 2012) (Figure 2.7). Developments in MFP growth in services might have also been affected by other factors, including the wider indirect effects from the mining boom. For instance, the deceleration in real producer wage growth in services has helped underpin rapid employment growth in the sector (Chapter 1). Combined with an unusually large decline in the relative price of investment goods, attributable largely to a strong exchange rate, these factors might have slowed MFP growth.

More systemic factors also appear to be at work

The mining boom and concomitant adjustment of the economy undoubtedly provide an important explanation for the MFP growth slump, but some slowdown had commenced

Figure 2.7. **MFP decomposition in other sectors**

Index FY 1986 = 100



Source: ABS, Cat. No. 5260.0.55.002.

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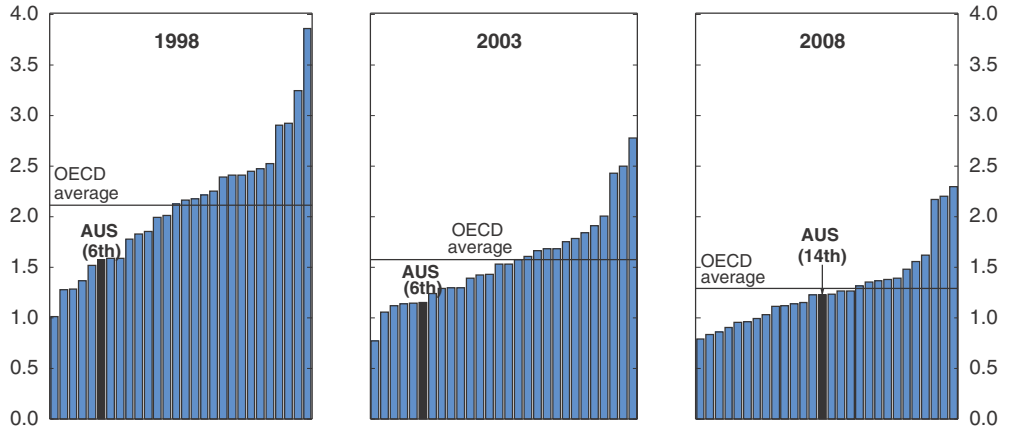
before the resource boom, indicating that more systemic factors may also be at work. First, the impetus of past structural reforms to productivity growth may have gradually waned. It is widely accepted that sweeping structural reforms in the 1980s and 1990s have transformed the dynamics of the Australian economy, driving a strong acceleration of productivity in the 1990s (d'Arcy and Gustafsson, 2012). The broad-based MFP slump since the turn of the century, however, raises the possibility that the surge represented a level shift with a catch-up phase, rather than an increase in the long-term growth rate (Dolman, 2009; OECD, 2010a). Recent empirical findings seem to lend support to a "spike" in multifactor productivity growth in the 1990s, rather than a sustained increase, with microeconomic reforms as a determining factor (Mckenzie, 2010).

Second, incentives for productivity-enhancing reforms may have weakened during the economic boom. International comparisons, based on the OECD integrated product market regulation (PMR) indicator, suggest that the reform process has lost momentum in recent years relative to competitor countries, with Australia moving from a "front running" position in 2003 to close to average in 2008 (Australian Government, 2010) (Figure 2.8). In addition, Eslake and Walsh (2011) argue that some new regulations may have been "productivity-stifling". Broad-based economic prosperity and soaring profits are also likely to have eased the pressures on firms to improve efficiency. The Productivity Commission assesses that, compared to the 1990s, more effort appears to have been devoted on the expansion of production and investment rather than cost cutting (PC, 2008a). The mining sector is a clear example in this regard. Dolman (2009) also concludes a positive link between profitability and lower productivity growth in the 2000s, particularly for some industries serving the domestic market. A recent survey by Telstra (2012) concludes that the "productivity-improvement deficit" among private sector organisations has widened in 2012 compared to the previous year, despite the increased importance attached to productivity objectives. The deficit is defined as the difference between those organisations who rank productivity as an important business priority and those who actually achieved significant productivity improvement over the past 12 months.

Third, Australia also faces capacity constraints following the long expansion of the economy. Skill shortages and infrastructure bottlenecks in key areas may have made it

Figure 2.8. **Product market regulation**

Index scale 0-6, from least to most restrictive



Source: OECD, *Product Market Regulation database*.

StatLink http://dx.doi.org/10.1787/888932737649

more difficult to raise productivity. Moreover, strong job growth and success in raising participation, as a result of welfare reforms, have drawn relatively low skilled workers into employment and reduced measured productivity, although Dolman (2009) concludes that the productivity effect of unusually low rates of unemployment is not likely to have been large.

The rate of investment in long-term drivers of productivity growth – education and training, innovation and infrastructure spending – has also received attention as a potential explanation to the slowdown in the 2000s. Views diverge, however. Cutler (2008), for example, ascribed much of the productivity slump to a "stalling" innovation effort and "stalled" investment in human capital, citing as main evidence the decline in public spending on research and development (R&D) as a share of GDP and the stabilisation of high school retention rates compared to the 1990s. Other analysts suggest, however, that changes in investment in R&D, information and communication technology (ICT) and education have not been an important drag on productivity growth (Dolman, 2009; PC, 2009). Dolman, in particular, found no empirical support in this regard. As for the impact of infrastructure spending on the productivity slowdown, the Productivity Commission (2009) highlights the temporary effect from the rapid rise in mining investment since mid-2000s and new public infrastructure, rather than a slowdown in investment *per se*. There are concerns among analysts, however, about the impact of infrastructure bottlenecks on productivity, though there seems to be little evidence, according to Dolman (2009), that at the aggregate level, a shortfall in infrastructure investment has detracted from productivity.

Lifting productivity is essential to sustain future living standards and promote broader-based growth

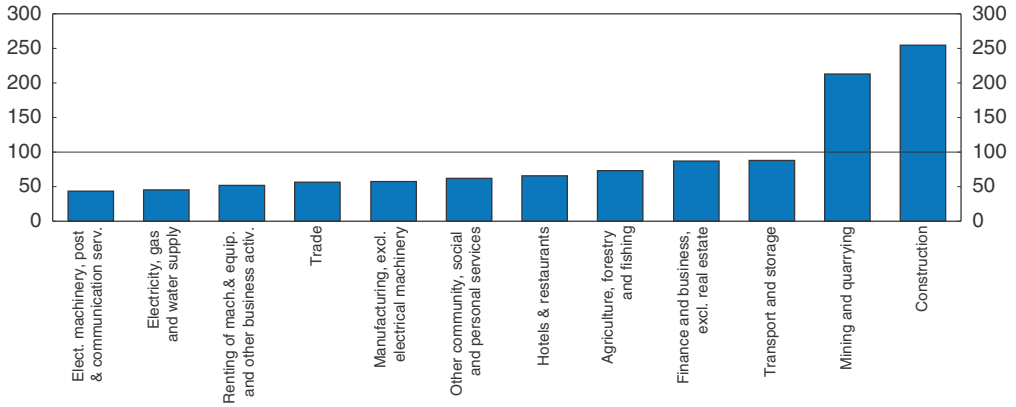
There is a lot of uncertainty about productivity trends in Australia, making it difficult to reach clear conclusions. It seems, however, that part of the slowdown is temporary because investment in key resource projects or other infrastructure investment has not yet come on stream. Estimates by the Reserve Bank of Australia (RBA) suggest, for example, sizeable increases in Australia's iron ore and coal export capacity over the next few years

(Chapter 1). In addition, the adjustment effects on productivity from the resource boom and stronger exchange rate may dissipate over time as the structurally challenged industries gradually adjust to the new conditions. Even if part of the slowdown is temporary, efforts are needed to raise productivity above its long-term trend to ensure that living standards continue to grow strongly as in the past two decades, especially if the strong terms of trade decline over time.

International comparisons suggest that there is still scope for Australia to narrow the gap in productivity *vis-à-vis* the United States in several sectors, moving closer to best practice (Figure 2.9). To a certain extent, productivity differentials between the two countries reflect geographical factors, such as distance to global markets though the importance of such factors is expected to decline in the future as the world is becoming "flatter", with economic gravity shifting towards China and other Asian markets (Chapter 1). Management practices at the firm level, affecting the use of resources in production, can be an additional reason explaining such differentials (Dolman and Gruen, 2012). Accordingly, the level of productivity in Australian manufacturing would increase by approximately 8%, if management practices in manufacturing firms were lifted to the average level in the United States. While fully matching the US productivity performance is not considered as a feasible target by Dolman *et al.* (2007), given also the existing differences in industry structure between the two countries, Australia could "go further" and close part of the gap.

Figure 2.9. **MFP gap relative to the United States**

2007 data, USA = 100



Source: EU KLEMS, *Growth and Productivity Accounts*: November 2009 Release, updated March 2011; Groningen Growth and Development Centre, *GGDC Productivity Level Database*; OECD calculations.

StatLink http://dx.doi.org/10.1787/888932737668

Further improvements in the education and training system, enhanced innovation activity and better infrastructure outcomes are critical to enhance Australia's productivity performance, as is the removal of remaining regulatory obstacles to competition. Ultimately, productivity improvements depend on the performance of individual firms. Reforms in these areas, however, along with measures to increase flexibility in responding to the structural adjustment underway (Chapter 1), could boost such performance and thereby enhancing the productive capacity and capability of the economy. The remainder of the chapter discusses these drivers.

Reforms to boost the long-term drivers of productivity

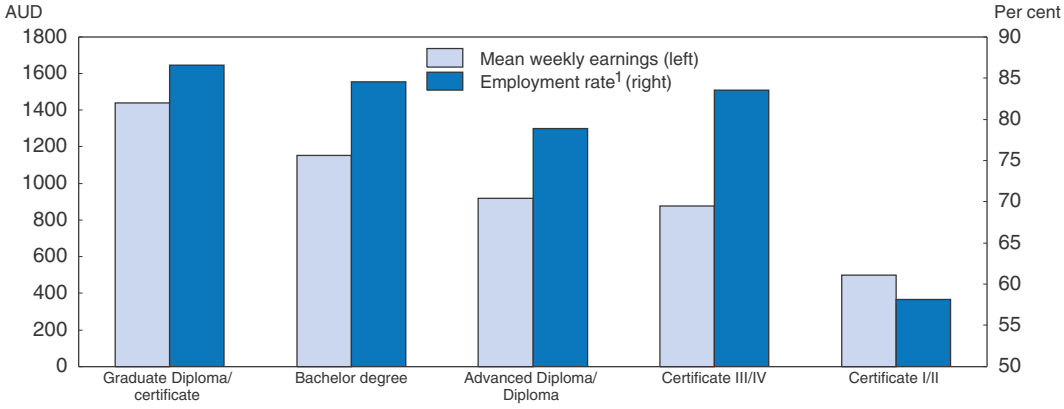
Enhancing human capital is at the core of productivity growth

Vocational education and training: responding to the skill needs of a rapidly changing economy

Australia has a well developed vocational education and training system (VET), allowing people of all ages to participate (Hoeckel *et al.*, 2008). Recorded skill shortages during the mining boom, however, highlight the need for a more efficient and responsive system. Low completion rates affect the supply of skills, in addition to waste of resources. Only 30% of students who enrolled in a VET course in 2008 are projected to complete a qualification, according to a recent survey (Bednarz, 2012). Even in the case of qualification level III, the first level with a significant impact on earnings and employment according to empirical studies, the projected completion rate is below 50% (Australian Government, 2012a) (Figure 2.10). While personal reasons and/or optimal training decisions by individuals (in the sense that a student has achieved the intended amount of training) explain a relatively large part of completion patterns, other factors, including training that does not meet student needs, also contribute (NCVER, 2011). Post-study outcomes also remain relatively poor for some occupations, such as machinery operators and drivers (close to 40%), though the level of matching is quite high for technicians and trades (around 70%) (Karmel, 2012). Concerns also arise about the quality of VET delivery. Recent reports by the Productivity Commission concluded that there were shortcomings in the provision of training in areas such as aged care, early childhood education and care (ECEC) and VET workforce (PC, 2012).

Figure 2.10. **Earnings and employment rate by education attainment**

2009



1. Per cent of the labour force in each category.

Source: ABS, Cat. No. 6278.0.

StatLink http://dx.doi.org/10.1787/888932737687

Recent reform initiatives aim at enhancing the quality of the VET system and increasing its responsiveness to changing skill needs (Box 2.1). As a step forward, a national VET regulator was established in 2011 to ensure adherence to national quality standards. A more effective apprenticeship system continues to be a focal point of the reform process. Harmonisation of apprenticeship regulation across states is underway aiming to reduce barriers to apprentice labour mobility and contain costs for businesses

Box 2.1. **Recent reform initiatives in the vocational education and training sector**

Improving the capacity and efficiency of the vocational education and training sector is high in the policy agenda. Some recent measures include:

Two important quality assurance bodies were established in 2011, the Australian Skills Quality Authority (ASQA) – a new national VET regulator responsible for registering training organisations and accrediting courses – and the National Skill Standards Council (NSSC) maintaining national standards for the regulation of VET and endorsing training packages. Victoria and Western Australia are the only jurisdictions to retain their state-based VET regulatory systems. Australian Government Ministers have also agreed to strengthen by 2015 the Australian Qualifications Framework (AQF), a unified system of national qualifications in schools, VET and the higher education sector.

Reforms of the Australian Apprenticeship System, in response to the report by the Expert Panel (2011), aim to simplify the system by improving the targeting of support and making competency-based progression a main feature of apprenticeships. The Apprentices Reform Package in the FY 2011/12 budget supports competency-based progression, which allows for skills and competencies to be recognised (including progressing to higher wages), provided that the relevant standards are met, also providing occupation/industry specific information to assist apprentice candidates in choosing the right training path and for targeted mentoring assistance to help successful progressions (Australian Government, 2011b). The budget has also announced the creation of the National Workforce Development Fund (AUD 700 million), supporting employers (under a co-contribution model based on the size of their enterprise) to provide training to new workers and up-skill existing workers. The new industry board led by Australian Workforce and Productivity Agency will make recommendations on targeting funding. Reforms in the Australian Apprenticeships Incentives Programme in the FY 2012/13 budget also reward the completion of training (Australian Government, 2012b).

The Council of Australian Governments (COAG) agreed in April 2012 a new National Partnership Agreement on Skills Reform (NPASR). Reforms aim at a more efficient, transparent, accessible and high quality VET that responds to the needs of the students and the labour market. The target set by COAG is to halve the proportion of Australians without qualifications at Certificate III or above by 2020 and double the number of higher level qualification completions (COAG, 2008). The main elements of the NPASR, as is discussed in COAG (2012a), are:

- Introducing a national training entitlement for a government-subsidised training place to at least the first Certificate III qualification. The entitlement is accessible through any registered public or private provider that meets state-based criteria to deliver publicly-subsidised training. It is available as a minimum to all Australians without a Certificate III or higher qualification, subject to eligibility criteria, though states can offer a higher level as is the case of the Victorian and South Australian schemes (Australian Government, 2012a). It includes foundation skills training (such as language and numeracy training) necessary to complete the Certificate III qualification. Students can enroll to the course or institution of their choice.
- Income-contingent loans for government-subsidised Diploma and Advanced Diploma students, to reduce the upfront costs for students undertaking higher level qualifications.

Box 2.1. **Recent reform initiatives in the vocational education and training sector** *(cont.)*

- Developing and piloting independent validation of training provider assessments and implementing strategies which enable the Institutes of Technical and Further Education (TAFEs) to operate effectively in an environment of greater competition.
- A new *My Skills* website, to improve access for students and employers to information about training options and providers, as well as provider quality to help them make better choices.
- Efficiency and responsiveness of the VET system and equity objectives will be improved through an increase in overall training activity measured by an increase in student completions of qualifications in the order of 375 000 nationally over five years. This includes improved training enrolments and completions in high level skills and among key groups of disadvantaged students, including Indigenous Australians.

(Australian Government, 2011a). Steps were also taken in the FY 2011/12 budget towards an effective transition from time-based to competency-based completion of apprenticeships and for mentoring, both of which are expected to lift completion rates (standing currently at around 50%) (Australian Government, 2011b). Workplace or employer issues, lack of support and low wages constitute important reasons for the low completion rates for apprenticeships (Expert Panel, 2011). As a further positive step, the FY 2012/13 budget rewards the completion of training (Australian Government, 2012b). Moreover, apprenticeship outcomes are expected to benefit from recent steps towards restructuring and streamlining the training packages (sets of nationally-endorsed standards and qualifications for recognising and assessing skills), making them more flexible and simple.

A new National Partnership Agreement on Skills Reform (NPASR) was agreed in 2012 by the Council of Australian Governments (COAG) (Box 2.1). A key element of NPASR is the introduction of a national entitlement for all working-age Australians to access a government-subsidised training place for a first Certificate III qualification or above (COAG, 2012a). In addition to increasing accessibility to training, this measure promotes a more competitive and client-driven training system by introducing a demand-element to funding with students being able to enrol to the course or institution of their choice. The affordability of training will increase further through a broader coverage of income-contingent loan schemes for Diploma and above courses. Measures also aim at increasing VET transparency and promote equity through additional incentives to improve completion rates, particularly for disadvantaged students.

Some steps were also taken recently at the state level to improve the responsiveness of public training providers (TAFE institutes), as suggested by COAG. In South Australia, for example, TAFE SA – the state's largest training provider – started operating as an independent statutory authority since mid-2012, to be more able to respond to market needs. There is still scope, however, to strengthen TAFEs' ability to compete in the market. Restrictions on the administrative autonomy of TAFE institutes as regards, for instance, their staff management or the courses they provide, still limit flexibility (OECD, 2008). A recent study highlights the importance of appropriate performance indicators for TAFEs in the new more competitive environment to help them coping with the increased organisational accountability (Guthrie and Clayton, 2010).

Strong quality assurance mechanisms that can monitor closely and respond to poor performance are critical for reaping the benefits of a more contestable training market. Increased competition may have some unintended quality (as well as budgetary) consequences, if providers compete only on price (Skills Australia, 2012). Evidence from Victoria, where an entitlement-based system was introduced in 2009, indicates excessive enrolments in some programmes without regard to employment prospects and needs of the economy that made necessary a better targeting of government subsidies to areas with skill shortages (State Government Victoria, 2012; Willox, 2012).

The recently established national VET regulator is an important initiative towards lifting quality and ensuring adherence to nationally-approved standards. It needs to be sufficiently resourced for this task. Quality monitoring would be strengthened further through the deployment of external validations, as planned by COAG (Box 2.1), in order to assess the qualifications delivered, as is the case for schools and universities (Ross, 2012). Moving towards a national approach of external validation is advisable. The increased emphasis placed by NPASR on raising VET completion rates also goes in the right direction towards enhancing the quality and efficiency of training outcomes. Outcomes-based pay systems, rewarding providers on completions that meet required quality standards, would also increase efficiency (PC, 2012). Skills Australia (now the Australian Workforce and Productivity Agency) (2012) proposes progressive payments at enrolment, midpoint and final payment based on module completion. The new policy frameworks adopted in Victoria and South Australia, for instance, include payments to providers based upon successful completion of competences (PC, 2012).

A more systematic approach to disseminate information on VET is another important element for a successful move towards a more client-driven and efficient VET. Easily accessible databases to the prospective students on the quality of providers and course outcomes would facilitate more informed choices and contribute to higher completion rates. At the same time, publishing information on providers' performance would incentivise them to focus on quality (PC, 2012). The implementation of the unique student identifier (USI), which records for each individual who accessed VET all accredited training undertaken and qualification obtained over his/her lifetime, will provide a valuable source of information for the quality of outcomes (The NOUS Consulting Group, 2011). The transparency of the VET system will increase further with the full operation of the *MySkills* website in FY 2015/16 (Box 2.1). The inclusion in the website of frequently updated information on post-completion employment rates and wages by course and provider, not currently available, would yield important labour market information (PC, 2012).

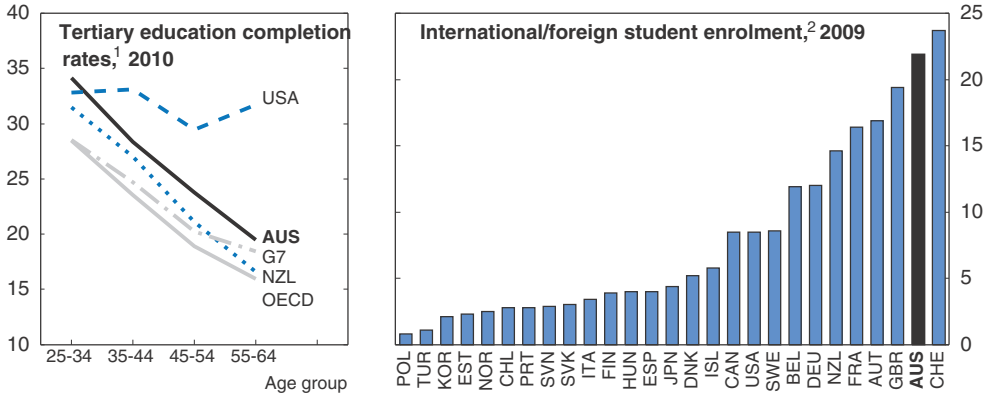
The agreed reforms go in the right direction towards enhancing the efficiency of the VET system and increase the pool of skilled workers, with estimated future productivity gains (PC, 2012). An additional 5.2 million workers with qualifications at Certificate III or above will be needed by the middle of the next decade to meet industry demand, according to government estimates (Australian Government, 2011c). But the re-skilling of mature workers (completions at or below the level of qualifications held) is also expected to increase productivity, as it would help individuals to retain employment or enhance their career prospects. The potential productivity effects, however, would be much lower (on the order of 50%, according to Productivity Commission estimates) compared to the case of higher qualification completion (PC, 2012). Initiatives, such as the Skill Connect service, linking enterprises with a range of skills and workforce development programmes and funding, are welcome steps towards the re-skilling of employees. As a further welcome

step, the creation of a National Workforce Development Fund will support employers to provide training (Box 2.1). There are also benefits from enhancing further foundation skills, and current policy efforts towards this direction are welcome. According to the 2006 Adult Literacy and Life Skills Survey, over 40% of working-age Australians have relatively low language, literacy and numeracy (LLN) skills (ABS, 2008). The development of a National Foundation Skills Strategy for Adults, aiming to create a nationally consistent environment for supportive policies is productivity enhancing (Shomos, 2010). Meeting the strategy's target, that two thirds of the working-age population will have literacy and numeracy skills at Level 3 or above (required to meet the complex demands of everyday life) by 2022, could increase the average level of productivity by around 1 per cent (PC, 2012).

Higher education: ensuring high quality outcomes

The Australian higher education system compares well internationally. Graduation rates have increased steadily over time, closing the gap with the best performing countries (Figure 2.11). Moreover, the share of international students in tertiary enrolments is among the highest in the OECD. Recent estimates suggest a major productivity premium from higher education qualifications, compared to a Year 12 qualified male, standing at 40% for a bachelor degree and around 60% for higher degrees (KPMG Econtech, 2010).

Figure 2.11. **Higher education**



1. Population that has completed the level of tertiary type-A and advanced research programmes, percentage by age group.
2. International or foreign students in tertiary type-A and advanced research programmes, as a percentage of all students.

Source: OECD, *Education at a Glance 2011 (respectively 2012): OECD Indicators*, OECD Publishing, Paris.

StatLink http://dx.doi.org/10.1787/888932737706

Important reforms are underway, in response to the Bradley Review (Bradley *et al.*, 2008), aiming to make the higher education sector more responsive to future economic needs and improve further its performance. The target set is that 40% of young adults hold university degrees or above by 2025. To help achieve it, the government uncapped in 2012 the number of Commonwealth supported undergraduate places. This implies a significant change in the funding arrangements for undergraduate places from a capped allocation system, where the funding agreement between the Commonwealth and a public university specified the number of places and the discipline mix to be supported, to a demand-driven one. Under the new regime, the government provides support for all domestic

undergraduate students accepted into an eligible course by a public university. Universities decide on how many undergraduate places to offer and in which discipline (Australian Government, 2009). Growth in higher education participation is underpinned by additional support to universities for student places and increases to the annual indexation of university grants. According to the FY 2012/13 budget, the uncapping of places will drive an estimated AUD 5.2 billion (approximately 0.4% of GDP) increase above previous funding levels to universities between 2010 and 2015, while the additional revenue from indexation over the same period will be around AUD 3 billion (Australian Government, 2012b).

A demand-driven approach to higher education has the potential of increasing competition and efficiency, making the system more diverse and responsive to students and employers needs. Evidence indicates a rapid expansion of university places during 2010 and 2011, when transitional arrangements of the new system were in place, with an increase in student numbers by 22% between 2007 and 2011. In addition, the new system enhances the opportunities for students from disadvantaged backgrounds to access higher education. In 2010, the proportion of undergraduate students from low socioeconomic status (SES) was around 16%, well below the overall level for all students of 25%. The government's target is that 20% of domestic undergraduate students will be from low SES by 2020.

A critical challenge in the new demand-driven system is to maintain high quality outcomes. The establishment of Tertiary Education Quality and Standards Agency (TEQSA), registering and evaluating the performance of higher education providers against national standards, is an important quality assurance mechanism but a close monitoring is still needed. While uncapping undergraduate places increases the entry opportunities to higher education for students who would have been previously excluded, there is a risk that retention and completion levels may decline, raising concerns about the quality of learning outcomes. Existing research found little correlation between entry scores and university performance for low to middle entry scores, though there is evidence that the probability of completion increases with the admission rating score (Murphy *et al.*, 2001; Dobson and Skuja, 2005; Marks, 2007). This indicates that additional support may be needed to ensure that less academically prepared students succeed in their studies. In recognition of this, the government provides additional funding to universities for students from low SES backgrounds (who tend to have lower entry scores), through the Higher Education Participation and Partnerships Programme (HEPPP), aiming to improve access to courses and enhance the retention and completion rates of those students. This measure goes in the right direction for improving learning outcomes. Efforts are also aiming to enhance academics' teaching skills, a key element for better student outcomes (OLT, 2011). The focus on quality also includes new performance funding arrangements, making additional financial assistance available to universities both for capacity building and rewards for meeting targets and benchmarks. The performance criteria involve increasing the participation outcomes of low SES background students. Performance funding arrangements will be fully implemented in 2012.

Indispensable for the quality and efficiency of a demand-driven system is to ensure that better information is provided to applicants. The *MyUniversity* website includes key indicators on university performance, including the outcomes of student surveys on teaching quality, thereby improving transparency and informed choice. In addition, it enables universities to benchmark their performance against each other providing incentives for improvements. Transparency and quality would be further enhanced from a

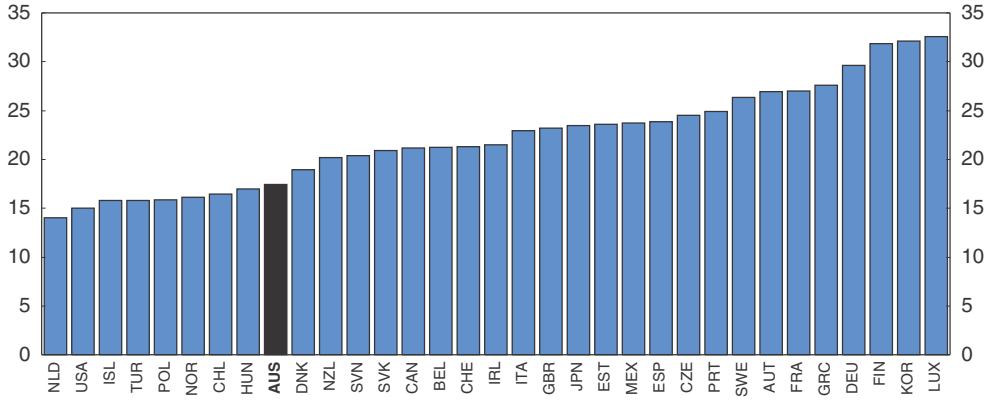
swift development of the performance measurement instruments for learning and teaching, a key part of the Advancing Quality in Higher Education initiative announced in the FY 2011/12 budget. These indicators, to be used for performance funding, will be published on the *MyUniversity* website from 2013 onwards.

Providing the right skills required by a rapidly changing economy is another key challenge facing the higher education sector. Funding arrangements that ensure an effective supply of student places are critical in this regard. The demand-driven system gives universities the flexibility to decide about the number of undergraduate places they offer in each discipline. Such decisions however are expected to be heavily influenced by the extent to which discipline funding matches the costs. Over- or underfunding could create a number of inefficient incentives (Lomax-Smith *et al.*, 2011). The expansion of places before the introduction of the demand-driven system showed no signs of unanticipated cuts for the broad field of studies (Norton, 2012). But the system cannot expand indefinitely and significant investments or extra staff may be required to ensure quality outcomes. A more responsive price-setting mechanism based, for example, on more frequent funding reviews or a university-driven increase in tuition fees above their current maximum level set by the government, while monitoring closely participation effects, could be considered (The University of Melbourne, 2011; Norton, 2012). Improved information for students is indispensable for moving towards more deregulated fees. Even in this case, however, such a move should be assessed carefully as it involves a trade-off between participation, in the event that the government does not match the increase in fees with a rise in the income-contingent loans to students, or rising fiscal costs, if the increase in fees is matched. Specifying skill matching as a criterion of funding for universities could be another option, which would require, however, improved information on graduate destinations.

It is too early to assess the potential impact of the new system on skills. However, some areas of under-supply, especially in science and engineering, raise concerns, given their important role in boosting innovation capacity (Figure 2.12). Recent budget measures to address the issue, in response to a review, are welcome (Australian Government, 2012b). Initiatives span both schools and tertiary education sectors and aim to stimulate student

Figure 2.12. **Science and engineering degrees**

As a percentage of total new degrees, 2010[1]



1. Or latest available year.

Source: OECD, *Education Database*.

StatLink http://dx.doi.org/10.1787/888932737725

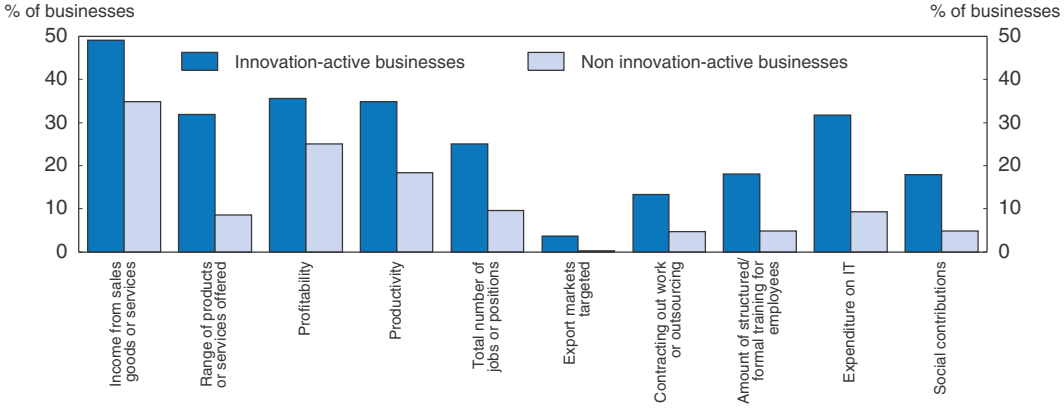
participation in mathematics and science, through improvements in the quality and supply of teachers delivering such courses, and reward high performing students to encourage them to continue their studies in these areas. Moreover, since 2009, the government provides reductions in income-contingent loan debt repayments for graduates taking up employment in targeted occupations, including mathematics and science. The *Higher Education Base Funding Review* considers that strategic objectives, such as tackling skill shortages, would be better addressed through labour market measures rather than concessions on income-contingent loans (Lomax-Smith *et al.*, 2011). The Australian Workforce and Productivity Agency, established in 2012 (Box 2.1), will provide advice on the effectiveness of the higher education system in meeting skill needs. As a positive development, initial applications and offers data for 2012 suggest that students are choosing to follow courses with good employment prospects.

Better innovation performance is key for productivity

Innovation is a major ingredient in productivity growth. Recent empirical evidence suggests that investment in so-called intangible capital (for example skills, R&D, organisational improvements) and their spillover effects accounted for over 60% of Australia's labour productivity growth between FY 1994/95 and FY 2005/06 (Barnes and McClure, 2009; Australian Government, 2011d). Business data by the Australian Bureau of Statistics also provide evidence of a positive link between more innovative production processes and productivity performance (Figure 2.13). Australia's framework conditions (including the functioning of capital markets and market competition) – a crucial factor for innovation according to OECD research (Jaumotte and Pain, 2005) – rank high internationally (Figure 2.14, first panel). Moreover, entrepreneurship conditions are favourable, with start-up businesses facing low regulatory barriers. Research capacity and skill base also compare well overall with other OECD countries; this is shown, for example, by the relatively high government-financed expenditure on R&D and high R&D performed in the higher education sector (Figure 2.14, second panel). Innovation-active businesses accounted for around 40% of all businesses in FY 2010/11, according to ABS (ABS, 2012).

Figure 2.13. **Business performance improvements by innovation status**[1]

FY 2011



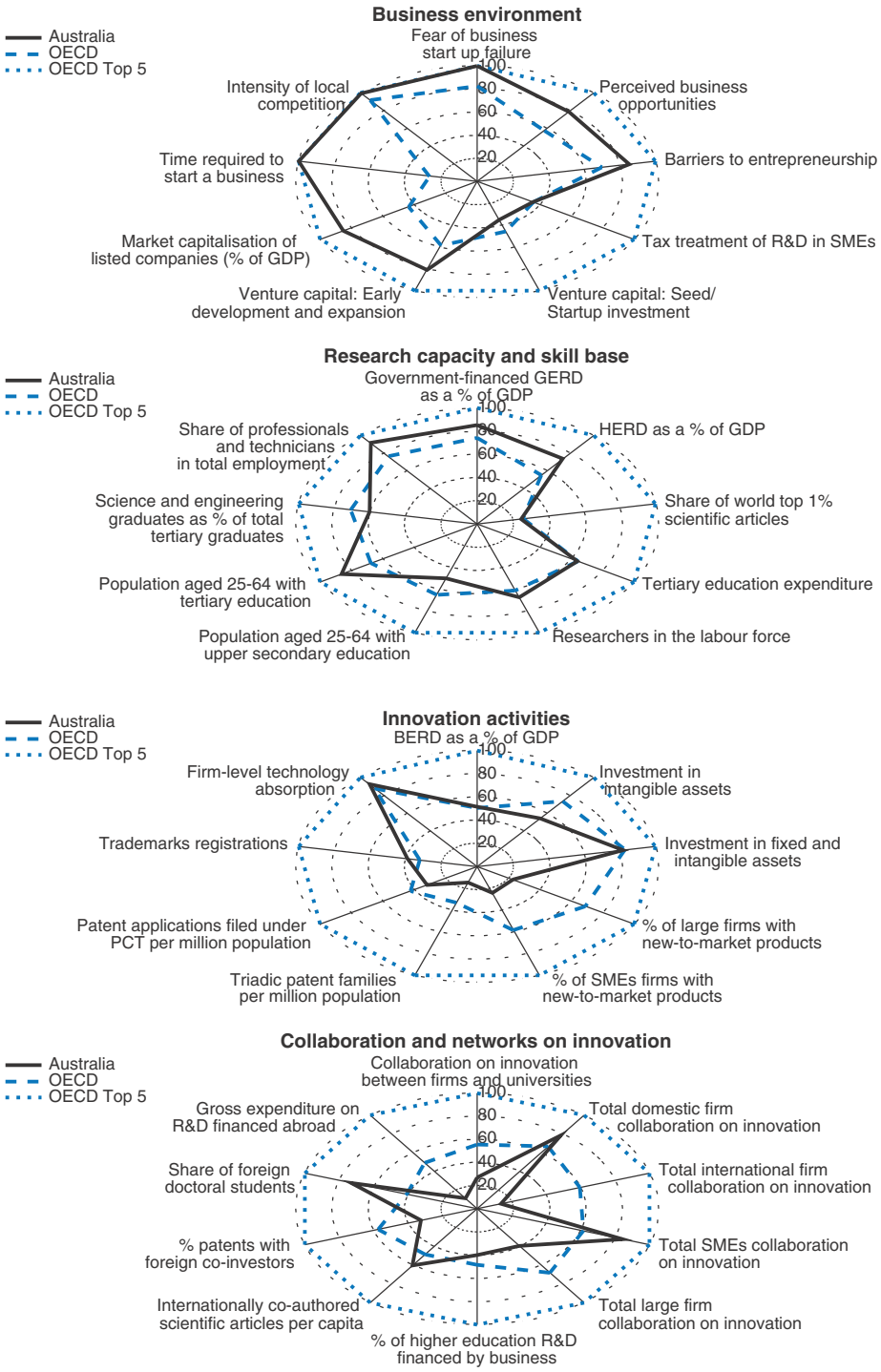
1. Share of businesses whose performance and activities increased compared to previous year.

Source: ABS, Cat. No. 8167.0.

StatLink http://dx.doi.org/10.1787/888932737744

Figure 2.14. **Innovation indicators**

2011 or latest available data



Source: OECD (2012), *Main Science and Technology Indicators*; OECD (2011), *Education at a Glance: OECD Indicators*; OECD (2010), *Measuring Innovation: A New Perspective* and *Science, Technology and Industry Outlook*; OECD (2009 and 2007), *OECD Science, Technology and Industry Scoreboard*; Global Entrepreneurship Monitor, *Adult Population Survey 2011*; World Economic Forum (2011), *The Global Competitiveness Report 2011-12*; WIPO (2011), *World Intellectual Property Indicators*; World Bank, *Financial and Private Sector Indicators Database*.

StatLink http://dx.doi.org/10.1787/888932737763

Nevertheless, Australia falls short of international best practice on critical dimensions of innovation, such as investment in intangibles and "new to the market innovations" (Figure 2.14, third panel). Domestic firms are much more likely to adopt or modify already existing innovations than creating new export markets or investing in their own intangible investing capabilities (Australian Government, 2011d). Although the low rates of "creative innovation" can partly be explained by Australia's distance from major markets and the size or structure of the economy, and by a scarcity of seed/start-up venture capital, a critical weakness of the innovation system is the low collaboration among key players that can constrain knowledge exchange (Figure 2.14, first and fourth panels). Although the direction of causality between low collaboration and "creative innovation" is not easy to establish, research suggests that businesses which engage in collaboration are 70% more likely to achieve products that are new to the world (Australian Government, 2006). Collaboration can also help to enhance the absorptive capacity (that is the ability to identify, absorb, transform and exploit innovations) of firms or other organisations which is especially important for net importers of foreign technologies, such as Australia (Australian Government, 2011d).

What explains the low level of collaboration on innovation?

There is much scope to enhance the level of business-research collaboration. According to recent survey results, only a third of the firms in 2010 had been involved in collaborative projects with external research providers (AIG, 2010). A particularly noticeable feature is the weak rate of collaboration between firms and higher education institutions (Figure 2.14, fourth panel). In addition, the collaboration of large Australian firms on innovation falls below the OECD average, although SMEs have a good track record with innovation partners sourced from market-based networks. External collaboration linkages are also weak, with around 3.6% of businesses collaborating internationally.

The low rate of collaboration between firms and higher education institutions may reflect the lack of a collaboration culture in Australian industry, but also shortcomings within universities. The tight links, for example, between promotion opportunities and teaching and publication outcomes can reduce incentives facing researchers at the individual level to engage with industry. The limited focus of university research on industry needs is cited by firms as an important obstacle to successful collaboration between the two sectors (AIG, 2010; Australian Government, 2011e). Deficiencies in the technology transfer offices linked to universities, which tend to be under-resourced and lack clear organisational goals and policies for commercialisation, are seen by the Productivity Commission as another potential barrier to knowledge flows (PC, 2007). There is a general view, however, that commercialisation of university research should not be taken further. Even if such research has practical applications, it is considered that the focus needs to be on the overall community benefits from the dissemination of knowledge and technology (PC, 2007, 2009; Cutler, 2008). The poor collaboration between universities and firms may have also contributed to the low patenting rates in Australia compared to other OECD countries (Figure 2.14, third panel). This could also reflect the large size of the services sector, making trademarks more important (OECD, 2010b).

The management of intellectual property (IP) by the universities could be another reason. There is a large variety of arrangements for transferring IP to firms, often within the same university, that raises transaction costs, especially for SMEs (PC, 2007). At the aggregate level, Australian universities have lower patent intensities of R&D and lower

execution of licenses than in other comparable countries, though activities, such as contracted research and consultancies by research institutions, are also important metrics for the level of collaboration between universities and industries (PC, 2007). In 2010, for example, Australian publicly-funded research organisations (including universities and research agencies) reported gross income of AUD 1.3 billion from engagement activity (contracts and consultancies with end-users) compared to returns of AUD 133 million from invention disclosures (licenses, options and assignments activity) (KCA, 2012). A review to investigate the impact of IP on collaboration between research institutes and private sector stakeholders is underway. The authorities are further reviewing the "innovation patent system", introduced in 2001 to stimulate innovation in SMEs by protecting inventions that do not meet the inventive threshold required for standard patent protection. The system has been criticised, however, on the grounds of being too generous, while concerns also arise in case larger companies are able to use such innovation patents to increase their competitive position at the expense of SMEs (ACIP, 2011; OECD, 2011a).

Enhancing knowledge exchange in the innovation system

The government has set a target to double the level of collaboration between researchers and business over the next decade. This is supported by a number of policy initiatives (Australian Government, 20011d). A focal point of the strategy is to boost the demand-side capacity of the SMEs cohort to apply and commercialise more research. Only 3% of SMEs collaborate on innovation with higher education institutions, compared to 10% of large firms (OECD, 2009a). Collaboration between SMEs and government research centers is equally weak. Unlike larger firms, SMEs face impediments to build capability because of limited resources and a lack of absorptive capacity. Enterprise Connect, one of Australia's key business support programmes, aims to increase businesses' awareness of the benefits of innovation and collaboration, as well as to assist firms to identify and connect to potential collaborators and build up their capacity to conduct future relationships independently. The programme provides free reviews on business potential to eligible firms requesting them and tailored advisory service and grants to implement the review recommendations, including funding for the placement of researchers directly into firms to assist them in developing business-focused intellectual property. A referral service linking businesses to experts in relevant technological fields is also available. The programme covers firms in a wide range of industries, including clean technology and manufacturing, with over 80% of the clients being satisfied with the outcomes of the programme for their business (Australian Government, 2012c).

The comprehensive approach to boosting collaboration adopted by the government is welcome and should continue. Work is also underway to encourage Australian research to respond more to industry demand. To be effective, collaboration-enhancing programmes need to be simple and flexible, with their outcomes being frequently monitored. A review of the Cooperative Research Centers (CRC) programme, aiming to build long-term partnerships between researchers and businesses, highlighted, for example, the delays in the negotiation and formalisation of agreements for collaborative research arising from the lack of flexibility in governance and management, complexity and high bidding and transaction costs (Commonwealth of Australia, 2008).

Public finances allowing, the authorities could consider further options to boost collaboration, such as providing innovation vouchers to SMEs for use in academic contracting. This could complement current initiatives, such as the Enterprise Connect

programme, and strengthen further existing engagement and support mechanisms. If properly designed, voucher schemes can be effective as the fiscal spending is controllable and technology transfer is stimulated, while firms have full autonomy in defining projects (OECD, 2012). Existing evaluation evidence suggests that such a scheme does stimulate new activity, in that most of the projects would not have been undertaken in its absence (OECD, 2010c). To be successful, innovation vouchers need to be simple and straightforward, effectively advertised and promoted and have efficient brokering which is best performed by a public agency (OECD, 2010c). Any voucher should recognise the local context in which it is implemented to ensure that it is well designed. Effective voucher outcomes are conditional on effective connections and outcomes. A voucher approach has already been adopted by New South Wales and Queensland, and is also used in many European countries in the form of regional or national schemes (Australian Government, 2011d; European Commission, 2009).

Employee-driven innovation could also be further explored. This is embedded in workers' human capital, on-the-job training and other up-to-date information acquired by employees. It can provide valuable inputs in informal internal networks in the form of information flow to the firm, exchange of practical knowledge and know-how in activities (Hoyrup, 2010). More co-operative approaches to industrial relations in firms would favour employee-driven innovation with positive effects on firms' productivity and competitiveness (Chapter 1). Support and recognition of employees' ideas, and the translation of such ideas into concrete initiatives, are also considered as important factors for promoting employee-driven innovation (Hoyrup, 2010; LO, 2007). Advances in Internet and broadband technology are expected to increasingly enable collaboration. The National Broadband Network (NBN) is intended to deliver high speed fibre broadband to 93% of the Australian population by the end of the decade with important estimated potential productivity and output benefits (Deloitte Access Economics, 2011).

Stimulating and facilitating innovation activity

Governments face the question of which policy tools are best suited to stimulate innovation. They can provide direct support via grants or use fiscal incentives (OECD, 2011b). R&D tax incentives are granted to all (potential) R&D performers and are therefore industry, region and firm neutral, even though, in some countries such schemes may entail preferential treatment to specific groups of firms or investment types. They can involve, however, deadweight losses, which need to be addressed when designed, as they might encourage innovation that would occur in the absence of support. R&D can also be difficult to define, and targeting incentives to input instead of results may not always be effective. Grants, on the other hand, can be directed to specific projects that have high social returns, but they are subject to the discretion of government agencies awarding them, although direct support programmes in many countries are highly competitive. The optimal mix of direct and indirect R&D support varies across countries, as the two instruments address different market failures and are thus complementary (OECD, 2011b).

A large part of government support to business investment in innovation comes via the tax system in Australia. The longstanding R&D tax concession scheme accounted for 75% of budgetary assistance to business innovation in FY 2010/11, compared to 40% in FY 2001/02, according to Productivity Commission estimates (Banks, 2011). Such schemes avoid problems, such as "picking winners", as investment decisions are made by businesses themselves and incentives applied to a wide range of industries and innovation

types. On the other hand, they can be complex and it can be difficult to design a scheme that is very effective in stimulating additional R&D (Banks, 2011).

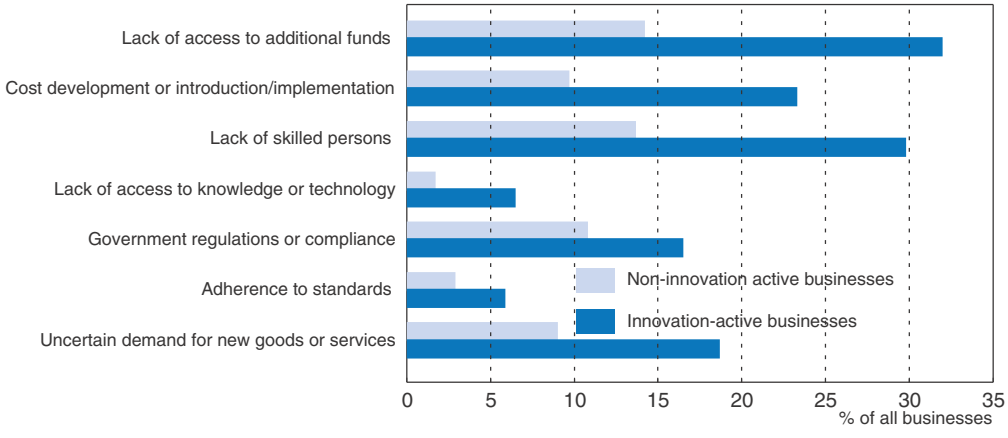
As an important step forward, in 2011 the government changed the nature of the R&D regime from tax deductions to a tax credit. The tax incentive provides much higher base rates of assistance than the previous scheme, especially for smaller firms, which are eligible for a 45% refundable tax offset (compared to a non-refundable 40% for larger firms). The new scheme also expands access of the R&D tax benefit to foreign companies permanently established in Australia, reduces complexity and has the potential to encourage innovation that would not otherwise occur (additionally) by introducing new eligibility criteria to better target the program, and re-orient support towards R&D activities that create new knowledge. A clear administrative interpretation of the new eligibility criteria and frequent evaluation of the achieved outcomes will be crucial for a successful implementation (PKF International, 2011). The first review of the R&D tax incentive is scheduled to occur after two years of operation (2014), and will be informed by an independent advisory group report to government, ahead of the review.

The adoption in 2011 of the Clean Energy Futures Plan, aiming to boost green innovation, is another welcome initiative towards new commercialisation activity. The Clean Energy Finance Corporation will invest AUD 10 billion in the deployment of renewable energy, energy efficiency and clean technologies, with additional funds for businesses under the Clean Technology Innovation Program to support R&D in renewable energy and other low-pollution measures.

The Australian government has also been supporting the development of a venture capital sector via an equity-based co-investment mechanism since 1997 which is appropriate given the need to address market failure. Firms regard lack of access to funds, however, as a very important barrier to innovation (Figure 2.15). Australia has a less mature venture capital market compared to some other advanced countries and there are obstacles to its further development, including the limited scale of the existing venture capital industry, the small cohort of fund managers focused on venture capital and the lack of strong record in attracting international venture capital (PC, 2007). Nevertheless, even

Figure 2.15. **Barriers to innovation**

Per cent of all businesses, FY 2011



Source: ABS, Cat. No. 8167.0.

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within the venture capital segment of the private equity market, a large share of funds goes to early development and expansion of firms rather than start ups (Figure 2.14, first panel). Ongoing assessment of current support programmes is welcome.

However, cross-country evidence suggests that there are limits to venture capital in addressing the problem of financing innovation, as it tends to focus on a few sectors at a time, with the size of the minimum investment too big for some start-ups (Hall and Lerner, 2009). Another source of financing for start-up firms could be the employee share scheme (ESS), which can be used by firms as a means to attract and compensate its employees at the first stages of their operation, when they are not yet profitable. The current take-up rates for ESS are low and further work could be done to examine the reasons and what, if any, actions should be taken to remove constraints on start-ups growing within Australia.

Achieving better outcomes in infrastructure will help productivity

Infrastructure investment is of key importance for productivity, given both its direct impact on the volume of capital stock and its indirect effects on efficiency (PC, 2009). Based on cross-country evidence, OECD (2009b) concludes that infrastructure investment can boost output in the longer term more than other types of investment. However, Australia's infrastructure falls short of current demand, while the "deficit" may get worse in the years to come in view of the strong demand generated by the mining boom and expected population growth (OECD, 2010d). Major infrastructure needs have been identified in key areas including the transport sector and water supply. Infrastructure Australia cites estimates that infrastructure bottlenecks cost approximately AUD 6 billion per annum (around 0.5% of GDP) (IA, 2008). Well-targeted and efficiently-financed infrastructure projects, combined with an efficient maintenance and use of the existing infrastructure stock, are of critical importance to meet growing demand and boost productivity. While capacity-building reforms in recent years, discussed in the previous *Economic Survey of Australia*, have filled some policy gaps, scope remains to enhance the efficiency of infrastructure development and use.

Co-ordination and selection of public infrastructure provision can be improved further

Managing the infrastructure sector entails particular difficulties as the delivery of these services depends on natural monopolies. Moreover, the development of infrastructure often involves externalities (positive or negative), which may not be recognised during planning, leading to socially sub-optimal levels of investment (McInerney *et al.*, 2007; OECD, 2010d). The capacity problems encountered by Australia in recent years, however, also reflect the consequences of complex and fragmented governance of the infrastructure sector, including a weak inter-governmental co-ordination and, especially at the national level, poorly co-ordinated planning (IA, 2008).

The government has taken steps to address these inefficiencies, especially through the establishment of Infrastructure Australia (IA) – tasked to advise governments on nationally significant infrastructure priorities and reforms on the basis of rigorous cost-benefit analysis. IA has completed its first audit and compiled a list of priority infrastructure, which is updated on a yearly basis. It has also released a national ports strategy, signed off by the Council of Australian Governments (COAG) in April 2012 (IA, 2010a; IA, 2011). Furthermore, the Australian Government released its national freight

strategy that aims to boost co-ordination of investment choices between the various modes of transport (IA, 2012a).

The FY 2011/12 budget allocated AUD 36 million over the next four years (an increase in funding by nearly 40%) to strengthen and expand the mandate of IA in an effort to improve infrastructure governance. To enhance transparency, IA will publish cost-benefit analyses while projects funded by the federal government will be evaluated after completion to ensure value for money (Australian Government, 2011b). Steps were also taken at the state level to improve infrastructure networks with the creation, in 2011, of Infrastructure New South Wales (INSW) and the Tasmanian Infrastructure Advisory Body (TIAB), aiming to identify and prioritise critical sub-national or regional infrastructure projects (IA, 2012b). INSW, in particular, released its first ever long-term infrastructure strategy for the state covering a 20-year period (INSW, 2012).

These measures shall improve the quality of infrastructure assessment and infrastructure governance. However, the co-ordination, planning and provision of infrastructure projects remain complex because of the large number of inter-governmental bodies involved: the federal government, eight state governments and 560 local councils (IA, 2011). Further initiatives at the state level to improve infrastructure frameworks, along the lines of INSW and the TIAB, would be welcome. Improvements in the effectiveness of infrastructure provision also hinge on a more effective planning and selection processes. Too much emphasis is placed at present on specific investment projects rather than on systemic issues and strategy development (IA, 2011). The prioritisation of proposed projects requires further attention, according to the latest report of Infrastructure Australia (IA, 2012b). Future audits for infrastructure needs should pay more attention on demand assessments, and evaluating imbalances relative to supply of infrastructure services using regularly updated indicators (OECD, 2010d). Such an approach would support a more effective provision of infrastructure to meet actual needs, though the difficulties in measuring infrastructure demand and supply cannot be underestimated. IA has developed a comprehensive database, with plans for further improvements. Recent measures to enhance transparency in the selection process are welcome.

Financing options for infrastructure need to be developed further

Financing future infrastructure remains a critical issue. In view of the public good aspect of many infrastructure projects, the government has historically played a key role in their funding (IFWG, 2011). The need for fiscal consolidation in the coming years, however, will constrain growth of public infrastructure investment, making it indispensable to maximise the pool of potential financing sources.

The Infrastructure Finance Working Group (IFWG) was established in 2011 to identify potential obstacles to infrastructure finance and develop reform options, especially to encourage greater private sector investment. In a recent report, IFWG calls for a comprehensive approach to address the issue of infrastructure financing through an overhaul of funding, better planning to provide a deep pipeline of infrastructure projects (through the preparation of 20-year infrastructure strategies, with a common framework and timeframe across jurisdictions) to boost industry certainty, and more flexible and efficient markets that attract private investment (IFWG, 2012). The sale of selected public assets (identified through a review of existing holdings) to fund new infrastructure is seen as one option for increasing investment capacity, given the preference of potential investors for existing projects that are less risky than completely new projects. However,

certain conditions for privatisation, in particular appropriate regulation, need to be in place to ensure efficiency. User charging (discussed below) can be a key step towards increasing investment funding, according to the IFWG report. Besides providing funding for new projects, user charges provide incentives for a more efficient use of infrastructure (IA, 2012b). Additional funding approaches recommended by IFWG include a reform of government balance sheets, through a combination of sales of existing state infrastructure assets and user charging/efficient pricing models across existing assets, to create capacity to invest in new infrastructure assets, and a greater use of alternative funding models. A suggested option, for example, is to augment the traditional grant-based approach to infrastructure funding with co-funding between the federal, states and private sector on major Public Private Partnership (PPP) projects, so as to bring these projects to market more quickly. The IFWG further highlighted the need for changes in planning and procuring infrastructure projects, as well as for reforms to attract private investment, including superannuation funds. Attracting such funds to invest on infrastructure would require removing a number of impediments, including uncertainty associated with the number and size of upcoming national infrastructure projects, high bid costs and a perceived mismatch between the need of superannuation funds for liquidity and the long-term nature of infrastructure investment (IFWG, 2011).

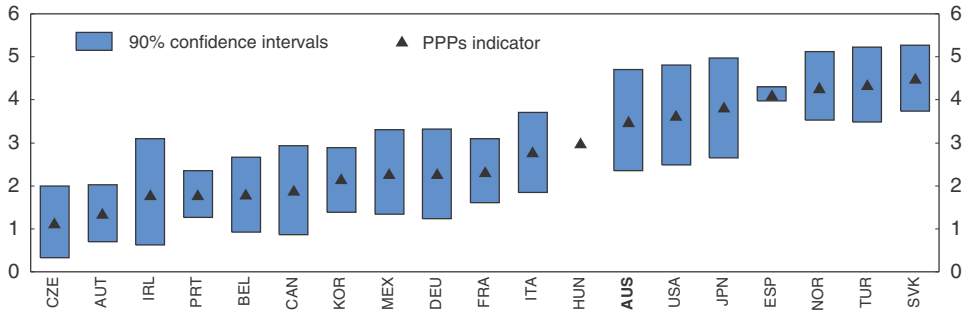
There is also scope for expanding the use of Public Private Partnerships (PPPs) to finance public infrastructure. For example, PPPs finance around 5% of public investment in infrastructure in Australia compared to between 10% and 20% in Canada (KPMG, 2010). If designed appropriately, PPPs may yield important benefits, including better risk management and increased synergy between the construction, operation and maintenance of infrastructure, enhancing efficiency over a project's lifetime (Chan *et al.*, 2009). A benchmarking study of Melbourne University concludes that PPP contracts are more likely to deliver projects on time compared to traditional procurement contracts (Duffield *et al.,* 2008). Chan *et al.* (2009) claims that doubling or tripling of the PPP share in public investment infrastructure could generate savings of around 0.5% of GDP over the next decade, compared to traditional procurement, arising largely from the increased efficiency in the delivery of projects.

PPP policy settings could be improved further (Figure 2.16). High bidding costs, reflecting to a large extent excessive information and documentation requirements and other inefficiencies in the procurement process, may act as a barrier to new entrants to PPPs and reduce competition among existing players. Bid costs in Australia are estimated to be, on average, around 25% to 45% higher than in Canada, which is considered to be a comparable overseas market (IFWG, 2012). Inaccuracy in demand forecasting appears to be another major obstacle to private sector investment in infrastructure projects, especially in the case of roads (IFWG, 2011). A number of recent high profile PPP failures were partly due to over-optimistic demand projections.

A number of measures were introduced in recent years to promote private sector investment in infrastructure. The FY 2011/12 budget announced changes in the tax treatment of losses for designated infrastructure projects to generate greater certainty for private investors (Minister of Infrastructure and Transport, 2011). In particular, access to better tax treatment for losses for designated infrastructure projects will be unaffected by changes in ownership or business structure and the value of losses is maintained over time by indexing them at the government bond rate (Australian Government, 2011b). Reform initiatives also include a National Infrastructure Construction Schedule, providing

Figure 2.16. **Indicator values of PPP policy settings**[1]

Indicator scale index of 0-6 from most to least conductive to efficient investment



1. The indicator is calculated for the 19 countries that provided a sufficient number of answers on PPPs in an *ad hoc* OECD questionnaire on infrastructure investment. The figure gives the average indicator value and 90% confidence intervals, which are calculated using random weights.

Source: Ad hoc OECD Questionnaire on infrastructure investment, cited in OECD (2010), *Economic Policy Reforms: Going for Growth*, OECD Publishing, Paris.

StatLink http://dx.doi.org/10.1787/888932737801

potential investors with detailed information on upcoming infrastructure projects across all government levels. But further reform efforts are needed. Superannuation funds could give consideration to the establishment of experienced teams of investment professionals to assess opportunities for smaller funds. Finding ways to break down large and illiquid infrastructure projects into more manageable investments could also help (IFWG, 2011).

Building investor capability by raising the bar of governance among institutions is also important to generate the right incentives for asset managers to better look after the long-term interest, according to OECD analysis (Della Croce *et al.*, 2011). One option to create institutions of sufficient scale that can implement a long-term investment strategy is through the collaboration among superannuation funds. The government's Stronger Super reforms are aimed at driving competition and consolidation in the superannuation sector.[1] With greater consolidation, funds will have increased scale which will provide greater opportunities to invest in a range of asset classes such as infrastructure assets. The government is also providing temporary income tax relief to superannuation funds wishing to merge which remove barriers to funds achieving greater scale. Providing information on the returns of the smaller- and large-size funds could help the small funds assess the relative benefits.

Reforms underway aim to enhance the effectiveness of PPP processes (including through a standardisation of contractual requirements) and improve approaches to managing forecasting and demand risk of infrastructure projects (National PPP Working Group, 2010; IFWG, 2011). A recent report by the Infrastructure Australia identifies a suite of best practice benchmarks to promote efficiency in procurement of major infrastructure projects (IA, 2012c). A review was further undertaken by the government on forecasting performance for toll roads where demand forecasts have proven over-optimistic in recent years (BITRE 2011, 2012).[2] These reforms go in the right direction in boosting investors' confidence in PPP projects and should continue. Consistent approaches across states to the selection and approval of the PPP projects are also essential and initiatives to this end are welcome. As an additional option to attract private investment in completely new projects, IFWG (2012) recommends a more flexible approach to the allocation of risk between public and private sectors. The government could be involved, for example, in the initial

development of the project and then transfers it to the private sector. However, it needs to make sure that such an approach is balanced and does not simply result in all project risks being ultimately transferred to taxpayers. Augmenting the traditional grant-based approach to infrastructure funding with co-funding between the federal, states and private sector on major PPPs projects, as recommended by IFWG (2012), would help to bring these projects more quickly to the market, boosting investor confidence. Finally, the government should go ahead with plans to review the national access regime to infrastructure by end-2012, given the limitations of the current regulatory framework for private investment identified in the previous *Survey*.

Ensuring efficient pricing mechanisms for infrastructure services

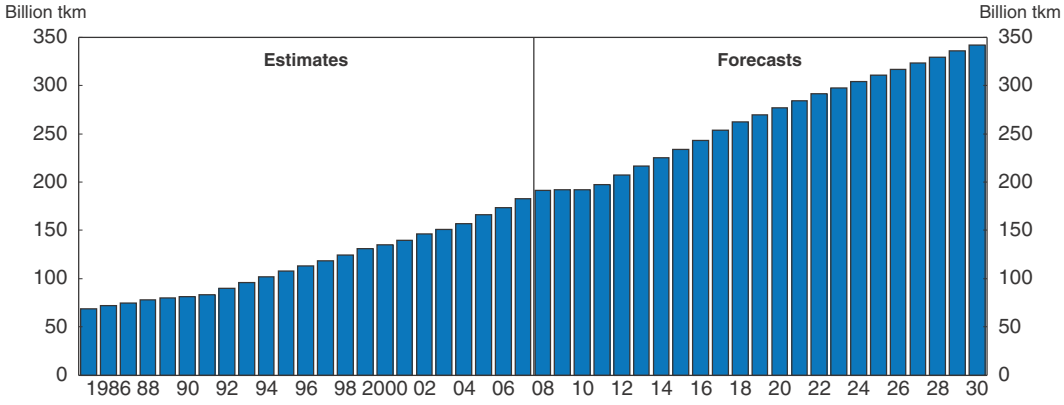
Efficient pricing facilitates the operation of competitive markets and encourages new investment in infrastructure, as well as a better use of existing stock, by providing the signals that guide decisions regarding the demand and supply of infrastructure (PC, 2011b). The challenge of a pricing reform is most pressing in the transport sector, in view of the rapidly growing freight demand and high and rising congestion costs despite significant expansion of capacity over the past decade. Important pricing issues also arise in the water and energy sectors.

The scope of user charges in the transport sector should be broadened

The road freight task – the freight expected to be carried on Australia's roads – is projected to nearly double between 2008 and 2030, without a charging system that ensures that heavy vehicles (which account for the bulk of road maintenance costs) pay for their specific marginal road-wear costs (CRRP, 2011a) (Figure 2.17). The current charging framework for heavy vehicles, which combines registration fees and fuel-based charges for road use, does not provide credible signals about the costs of using particular roads, or about the demand for different roads. Such charges do not always depict accurately the actual road wear arising from the mass, distance travelled or types of roads used by a vehicle (CRRP, 2011b), resulting in significant cross-subsidies between various types of vehicles and infrastructures. Evidence from European countries with national charging

Figure 2.17. **Road freight developments**

Total Australia



Source: Bureau of Infrastructure, Transport and Regional Economics (BITRE, 2010). "Road Freight Estimates and Forecasts in Australia: Interstate, Capital Cities and Rest of State", *Report 121*, Canberra.

StatLink http://dx.doi.org/10.1787/888932737820

systems for heavy vehicles shows efficiency improvements from pricing reforms (Gustafsson *et al.*, 2007).

A feasibility study for introducing more direct pricing for heavy vehicles and on the future funding arrangements for roads was completed at end-2011 and considered by COAG. A number of pricing options, involving alternative combinations of mass, distance and location charging parameters, have been developed and evaluated by the COAG Road Reform Plan (CRRP) team. The findings appear to support a staged move to charging heavy vehicles for road use, with the initial focus on biggest vehicles (CRRP, 2011c).

Current efforts towards road infrastructure pricing reforms are welcome and should continue. These measures should be accompanied by overhauling the framework of managing and financing road infrastructure, given that the two reforms could reinforce each other (OECD, 2010d; CRRP, 2011b). Given the complexities that reforms in the pricing and funding mechanisms involve, a staged approach, could be considered by the authorities. Broadening the scope of pricing reform to light vehicles at a later stage, which constitute the majority of the Australian vehicle fleet, would enhance the efficiency of the Australian land transport sector (Stanley and Hensher, 2011).

Congestion charges would improve the use of road infrastructure and ensure better environmental outcomes. Official estimates, cited by BCA (2009), suggest that congestion costs are increasing. In the absence of road pricing, the "avoidable" urban congestion costs (in constant prices) would more than double between 2005 and 2020, rising to AUD 20.4 billion (around 1.4% of GDP) by 2020. Under current road charging arrangements users have no incentive to consider the costs of using the urban network at peak times.

Although congestion is recognised as a major economic cost in Australia, no systematic approach to better pricing congested urban roads has been pursued so far. The introduction of location-specific and time-varying congestion charges for road infrastructure in large cities, recommended by the *Henry Tax Review*, is still pending (AFTS, 2010). International evidence, including the experiences from London and Stockholm, strengthens the case for using charges to ensure low levels of congestion (OECD 2010d; Stanley and Hensher, 2011). In Australia too, the introduction of time-of-day tolling in the Sydney Harbour Bridge and Tunnel in early 2009, appears to have reduced crossings during the increased tolling period (BCA, 2009). Infrastructure Australia suggests that small shifts in traffic levels of around 6-7% could have an appreciable impact on congestion levels (IA, 2011).

Critical for the successful implementation of congestion charges is public acceptance of the policy. Survey evidence suggests that acceptability evolves over time, rising to its highest level as the scheme becomes operational and benefits may exceed the expectations of users (OECD, 2010e; Stanley and Hensher, 2011). A transparent and understandable congestion charging system, based on clear rules for access and a credible compliance regime, are important factors for acceptance, according to the *OECD International Transport Forum* (OECD, 2010e). Developing public support that provides alternative options for travelling is also of high importance. While the purpose of charging variable congestion fees is to correct market failures, rather than increase tax revenue, the resources collected can be used to support public transport which appears to play a less significant role in land transport in Australia compared to other OECD countries (Figure 3.6, OECD, 2010d).

More cost-reflective water pricing would improve efficiency and environmental outcomes

Well functioning pricing mechanisms would result in more efficient use of water resources. The National Water Initiative (NWI), which underpins current reform initiatives, includes objectives for water market development, so trade in water rights can enable the allocation of water to its highest value use, including for environmental purposes. NWI planning principles have been agreed by all Australian governments to facilitate cost recovery for water delivery services. The National Water Commission (NWC) highlights the improvements under the NWI in terms of governance and quality of planning, as well as the beneficial effects of pricing reforms on water trading and in encouraging a more efficient use and investment in the water sector (NWC, 2011a).

Nevertheless, important issues remain. Despite improvements in the way water-rights markets work in rural areas, over-allocation of water resources is still an issue in several areas that needs to be addressed. Over-allocation leads to an under-pricing of water, in addition to having serious environmental consequences which are likely to be exacerbated by climate change (OECD, 2010d). The lack of consistent definitions and methods for assessing over-allocation of water resources and remaining barriers to water trading, especially the 4% upper annual limit on out-of-area trade of water entitlements in Victoria, are important obstacles in resolving the problem (NWC, 2009; PC, 2010). Moreover, while notable progress was made overtime towards full cost recovery for water services, many rural water systems have not yet achieved it. In particular, minimal progress was made, so far, in implementing cost recovery of water planning and management activities, which should be reflected in water prices (NWC, 2011b). Government subsidies for irrigation infrastructure in rural areas also have the potential to distort efficient investment decisions and pricing, though they may be required for transitional purposes.

Improvements in urban water pricing could be further implemented. Most water businesses have attempted to set the volumetric component of the tariff with reference to the long-term marginal cost (LRMC) of supply. NWC concludes, however, that in practice many utility companies use inclining block tariffs (IBTs) which impose higher prices for successive blocks of water (NWC, 2011b). This is a mechanism to discourage wasteful water use by households (Crase *et al.,* 2007). Another objective for an IBT pricing system is to address affordability issues by setting a low price for what some consider to be "essential" water (PC, 2008b, 2011b). However, IBTs raise concerns on both efficiency and equity grounds, as in many cases it is not clear whether such tariffs reflect long-run marginal cost, and such pricing structure, by not being adjusted for household size, can disadvantage larger households that have higher essential water needs (NWC, 2011b; PC, 2011b). The drought has also made the case for more flexible pricing schemes to better manage water variability (NWC, 2011b). Pricing at LRMC is static and smoothes prices over time, but does not reflect short-term changes in the marginal cost caused by changes in water availability (PC, 2008b; NWC, 2011b). It is thereby unlikely to provide efficient signals to consumers and suppliers in cases of highly variable dam inflows. During the recent extended drought, there was a strong reliance on water restrictions which is an inefficient approach to demand management in the longer term (PC, 2008b). Restrictions on the choice of supply-side options, including regulatory obstacles to rural–urban water trading and use of water recycling for potable reuse, which represent lower cost sources of water supply (although the cost of water recycling initiatives may vary depending on the transportation distances),

also hamper the efficient allocation of water resources, and hence productivity, in urban areas (OECD, 2008; IA, 2010b).

The government is addressing reforms in the water sector. In the rural sector, ongoing reform efforts, under the NWI, aim to tackle the over-allocation of water in the Murray-Darling Basin, Australia's most important agriculture region through the Murray-Darling Basin Plan and the Restoring the Balance in the Murray-Darling Basin Program. Initiatives include an AUD 3.1 billion buyback of water entitlements to increase environmental flows, investment in water saving infrastructure and improvements in water planning and information about water availability and use. The government has recently committed to provide additional funding for water recovery projects of AUD 1.8 billion over ten years starting in 2014 (Gillard, 2012). Close co-ordination among Murray-Darling Basin jurisdictions is essential for the success of the water recovery programme (NWC, 2011a). Dismantling barriers to trade is also vital for achieving a better balance between consumptive use of water and water for the environment. Quantitative restrictions on trade will be prohibited under the proposed Murray-Darling Basin Plan, and Victoria has made commitments to remove the 4% annual limit on the trade of water entitlements out of irrigation districts by 2014**.** A faster than scheduled removal of such limits is advisable. Moreover, to reduce over-allocation, water pricing should ensure full cost recovery, including environmental costs, though the challenges in identifying and valuing water-related environmental externalities need to be recognised (OECD, 2010f). Government subsidies to irrigation infrastructure need to be removed, using the savings, instead, to repurchase water user rights or for making budgetary room (Chapter 1).

Further pricing reform is also needed in the urban water sector for better cost recovery (PC, 2011b). Currently basic prices reflect affordability concerns for lower income consumers, while prices for larger consumption are higher. Prices need to reflect the cost of supply. This would also reduce the need for state subsidies to water companies, even if the support is of short term and intermittent. Social objectives would be better pursued through the tax-transfer system. More flexible pricing schemes, which are responsive to changes in water availability in urban supply (scarcity-based pricing), could be considered, but to be successful such schemes need to be accompanied with improvements in metering and a higher frequency billing to ensure that price signals are effectively transmitted to water users (PC, 2008b; NWC, 2011b). The introduction of smart meters, as in the case with the electricity sector (see below), would be welcome, though their costs and benefits would need to be assessed.

Achieving urban water security at the lowest cost would require the exploitation of all supply-side options, including rural-urban trade and water recycling for potable reuse, which are currently restricted by state regulations. This would reduce reliance on water restrictions and costly investment projects, such as the construction of numerous desalination plants in recent years to avoid the consequences of drought (OECD, 2010d; PC, 2011b). According to Productivity Commission, the expected gains to consumers and the community from implementing reform in the urban water sector can only be moderate in the short term, but are expected to increase over time as water needs rise (PC, 2011b). Achieving rural and urban water reform outcomes depends on implementing the National Water Initiative as a whole.

Enhancing the efficiency of the energy market

A number of energy market reforms are currently on the agenda of the national and sub-national governments aiming among others to increase competition in retail markets and improve regulation of transmission networks.[3] The Council of Australian Governments (COAG) will assess at its end-2012 meeting the progress made in energy reforms and possible additional policy responses.

Price cap regulation for small customers continues to apply in most jurisdictions. Prices are set, in particular, by state regulators so that electricity retailers can recover what the regulator considers to be the costs an "efficient" retailer expected to incur in the period for which the cap applies (RBA, 2010). State governments have agreed to phase out retail price regulation for energy where competition is effective. So far, only Victoria has removed regulation (CRC, 2011). Electricity tariff caps reduce supply-side signals for investment. They further inhibit efficient price signals to consumers, increasing the risk of overconsumption (McInerney *et al.*, 2007). The effectiveness of any carbon price is conditional on price signals reaching consumers, and therefore on retail price deregulation (Hepworth, 2010). Faster progress towards installing advanced metering infrastructure ("smart meters") is also critical for energy-efficient consumption choices, as it would facilitate better demand management strategies (CRC, 2011). A greater responsiveness of electricity consumption to pricing would reduce the need for the construction of costly production capacity to meet peak demand. Smart meters are being rolled out in Victoria, with the installation process expected to be completed by 2013. Trials for smart metering are also being conducted in most other states and the timelines for the introduction are to be reviewed in 2012. A national framework to support the use of smart meters and related services is under development. Consumer "education and engagement" about smart metering is an important factor for the success of the measure, according to the Draft Energy White Paper (Commonwealth of Australia, 2011). Based on public consultation, the Australian Energy Market Commission (AEMC) will report to national and sub-national energy ministers on measures to encourage demand-side participation, at the household and industrial scales, in the National Electricity Market (AEMC, 2012).

A key regulatory issue in the energy sector regards the development of an electricity transmission network that can handle increases in renewable energy. Reliance on new energy sources is expected to increase further in the future, especially under Australia's Renewables Target (RET) and the recently adopted clean energy package (Chapter 1). Entry of renewable generation is likely to be clustered in certain geographic areas, most of which are expected to be distant from the shared network (AEMC, 2009). Investment is needed to enlarge transition networks to connect clusters of new generation.

According to AEMC (2009), the existing regulatory framework is not well-structured to deal with clustered generation. This is due to the lack of commercial incentives for network service providers to bear the risk associated with constructing scale efficient networks extensions (SENE). Without a high degree of certainty that generators will connect via SENE, or rules ensuring cost recovery, network service providers are unlikely to invest in such costly infrastructure to accommodate expected future connections, even if this could lower the costs for the system as a whole (Wright, 2012). In addition, according to the AEMC (2009) report, the existing framework can make the co-ordination of numerous generators difficult for network service, as it is based on bilateral negotiation, thereby increasing the risk for inefficient duplication of infrastructure and delays in connections,

with possibly large knock-on effects on end-users. In view of these shortcomings, AEMC made the case for framework change.

The National Electricity Rules were amended in June 2011 to facilitate the enlargement of transmission networks. Transmission grid owners are now required to undertake and publish, on request, studies into the potential for efficiency gains from the co-ordinated connection of expected new generators in a particular area (AEMC, 2011a). The AEMC's rule does not compel anyone to bear the risk and cost of stranded assets. Rather, it provides a mechanism under which opportunities to capture scale efficiencies can be made transparent, the purpose of which is to help potential investors to make informed decisions. Some analysts, however, have expressed doubts as to whether the new provisions address the shortcomings of the current framework, as they continue to allocate the risk and cost of network extensions to project developers, rather than to consumers as was originally envisaged (Wright, 2012). AEMC (2010) proposed, in particular, that generators connecting to the network would have to pay for the proportion of scale efficient network extension cost equal to capacity they use. The cost of the surplus capacity built in anticipation of future projects would be met by consumers until such projects were built (Wood *et al.*, 2012). There was, however, a change compared to original proposal. While recognising the environmental benefits associated with having consumers pay, the AEMC made its determination on the basis of whether it would contribute to the long-term interests of consumers. In addition, consumers are not well placed to manage risks associated with asset stranding, and therefore, are not in a position to provide hedges against renewable investment. Project developers are best able to assess and manage that risk (AEMC, 2011a). It is still too early to evaluate the impact of the new rules on improving efficient network connection.

Swift implementation of regulatory reforms is required

Overlapping and inconsistent regulations across jurisdictions can impede efficiency and productivity. COAG agreed in 2008 a wide-ranging regulatory reform to deliver a seamless national economy. The agenda entails business regulation and competition reforms, complemented by reforms to improve regulatory processes. Implementation has moved forward, with three quarters of the entailed reforms being "on track" as of end-2011, according to the COAG Reform Council (CRC) performance report (CRC, 2011). As a significant step in the area of competition reforms, single national regulators are set to be in place by 2013 for heavy vehicles, rail and maritime safety, reducing the number of regulators across Australia from 23 to three. Official estimates suggest that the reform could boost national income by up to AUD 30 billion (approximately 2% of 2011 GDP) over the next 20 years.

In the energy sector, derogations allow for jurisdictional variations in the national rules, and are planned to be phased out to allow for transition to the national regime. A review of energy market derogations is set to take place in June 2014 (COAG, 2012b). However, the lack of a seamless national approach to developing and paying for transmission networks hinders interconnections among states and reduces effective competition (IA 2011; Wood *et al.,* 2012). The AEMC is currently consulting on a change to the National Electricity Rules to allow for inter-regional transmission charges to be used. This would ensure that network service providers contribute to the costs of beneficial investments undertaken in other jurisdictions participating in the national electricity market (AEMC, 2011b). The AEMC expects to finalise this rule change by February 2013.

Implementation also varies with business regulation reforms. Much scope for harmonisation remains, for instance, in legal profession and in establishing a national occupational licensing system. Despite some progress, the regulation for the legal professions remains complex, with differences across states in areas such as admission and practising certificates, which prevents legal practitioners from operating in multiple jurisdictions (CRC, 2011). COAG agreed in 2009 on further reforms to ensure consistent national regulation of the legal profession. New South Wales, Victoria and the Northern Territory have committed to taking this reform forward, with Queensland still considering the proposed reform. The national regulation scheme is expected to commence operating in 2013, with scope for non-participating jurisdictions to also implement the law at a later date.

It is also important to address overlaps and inconsistencies in occupational licensing procedures across the states. COAG agreed in 2009 on a national occupational licensing system for specified occupations.[4] In recognition of the complexity of these reforms, COAG decided in April 2012 that implementation of the first range of occupations would occur during 2013. Additional occupations may be introduced over time. However, CRC expressed concerns as to whether a national trade licensing system can be fully achieved in practice, given the uncertainty about some jurisdictions' participation in the national system and due to legislative variations to the national law in some states (CRC, 2011).

The implementation of the COAG reform agenda on business regulation could result in significant reductions in the cost of red tape. In assessing the direct impact of 17 of the seamless national economy reforms, the Productivity Commission concluded that, if fully implemented such reforms could lower business costs by around AUD 4 billion per year and, after an adjustment period, national output could be increased by around 0.4% (or AUD 6 billion per year) (PC, 2012). The decision of COAG to bring forward (to end-2012) the completion date of the first wave of seamless national economy reforms, and to consider options for a further wave of reforms, is therefore welcome (CRC, 2011). In April 2012, COAG announced its priorities for a new regulatory and competition reform agenda, to be supported by a "national productivity compact" between governments and businesses. The aims include, streamlining state and federal environmental approval processes, as well as major development approvals and further energy market reform. Swift endorsement and implementation of the agreed plan for taking the reform priorities forward would be desirable. Moving ahead, consideration could also be given to removing existing barriers to entry in the taxi industry – an area of reform identified by OECD *Regulatory Review* for Australia (OECD, 2010a). For example, Abelson (2010) finds "few efficiency or social reasons" for entry regulations to the Sydney taxi industry, with the net benefits from their removal estimated at AUD 265 million per annum. Further improvements to regulatory harmonisation, mutual recognition and institutional co-operation between Australia and New Zealand, under the Closer Economic Relations agreement and the Single Economic Market agenda, could yield additional economic gains (OECD, 2011c). A joint study to be conducted by the Productivity Commissions of the two countries will identify options for further reforms which could boost efficiency, increase competitiveness and strengthen further economic integration.

Box 2.2. **Recommendations on boosting productivity**

Ensuring a high quality education and training system

- Implement competency-based apprenticeships in line with the skills strategy. Proceed with efforts towards developing strong quality assurance mechanisms for training.
- Harmonise apprenticeship regulation across states. Ensure simple and flexible training packages.
- Move towards a national approach of external validation to assess the qualifications delivered. Provide public VET providers with more flexible administrative arrangements.
- Ensure improved information for prospective tertiary students on course quality and outcomes. Monitor completion rates and learning outcomes in higher education following the uncapping of places in universities. The funding arrangements in the new system should ensure an effective supply of student places.
- Promote the responsiveness of the higher education system in meeting skill needs. A more responsive price setting mechanism should be considered.

Enhancing innovation performance

- Programmes to support collaboration and networking between universities and businesses should be simple and flexible to reinforce their impact on innovation.
- Consideration should be given, fiscal savings allowing, to further measures to increase collaboration between researchers and business, such as the provision of well-designed innovation vouchers for contracting academic research as a complement to government's comprehensive approach to facilitate effective connections and outcomes.
- Ensure a clear administrative interpretation of the eligibility criteria entailed in the recently introduced R&D tax incentive scheme. Evaluate outcomes in terms of projects that would not have been undertaken in the absence of the scheme.

Improving infrastructure outcomes

- Improve infrastructure outcomes by reducing the complexity of governance and provision of infrastructure investment and ensuring a more effective planning. Remove barriers to private participation in financing investment infrastructure. Continue efforts to increase the effectiveness of public-private partnership processes and improve approaches to managing risks of such projects. To achieve these objectives:
  - Streamline the number of inter-governmental bodies involved to reduce the complexity of governance and provision of infrastructure projects. Extent initiatives at the state level to improve infrastructure frameworks, along the lines of Infrastructure New South Wales and the Tasmanian Infrastructure Advisory Body.
  - Shift the emphasis from specific projects to more systemic issues and strategy development, paying more attention to demand assessments relative to supply to enhance the effectiveness of infrastructure planning process.
  - Remove barriers to private participation in financing investment infrastructure, including superannuation funds, through suitable projects, in terms of size and liquidity, for smaller investors and a deep pipeline of upcoming projects.
  - Further streamline procurement bidding processes to improve the effectiveness of public-private partnerships. Build on the current initiatives to improve mechanisms to manage forecasting and patronage risks of such projects.

Box 2.2. **Recommendations on boosting productivity** *(cont.)*

Ensuring efficient pricing mechanism for infrastructure services is essential

- Broaden the use of road user charges. Introduce location-specific and time-varying congestion charges for road infrastructure in large cities. Move towards more cost reflective prices in the water sector. Install advanced metering infrastructure ("smart meters") for electricity to promote energy-efficient consumption choice.
- Develop the public transport system to increase the attractiveness of substitutes to private transport. Proceed with pricing reforms for heavy vehicle sector and overhaul the framework of managing and financing road infrastructure.
- Water pricing should ensure full cost recovery, including environmental costs. Social objectives would be better pursued through the tax-transfer system. Government subsidies to irrigation infrastructure should be removed and remaining barriers to water trade should be dismantled.

Swift implementation of regulatory reforms is required

- Implement fully the agreed reforms under the COAG agenda for a seamless national economy. Move towards a national approach to developing and paying for transmission networks. Harmonise regulation for legal and other professions and occupational licensing. Intensifying the trans-Tasman relationship would reduce spatial transaction costs and facilitate carrying out increasingly complex regulatory functions through greater economies of scale.
- The recently agreed productivity pact between business and governments is a welcome step and should be endorsed and implemented swiftly.

Notes

1. In particular, superannuation funds will have a duty to undertake an annual assessment of scale and where it is determined that the assets or member numbers are insufficient, the fund will need to take appropriate action to rectify the insufficiency so they continue to meet their general obligation to promote the financial interests of beneficiaries.
2. Moreover, the government currently examines the best international practices for disincentivising overbidding for toll road concessions (Australian Government, 2012d).
3. Other objectives include further competition reforms in the wholesale energy markets, strengthening the governance of energy market regulatory bodies and empowering consumers to engage in energy markets.
4. These include initially the occupational areas of plumbing and gas fitting, electrical, property and refrigeration and air conditioning and then secondly building occupations, valuers and conveyancers.

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Glossary

ABS	Australian Bureau of Statistics
ACE	Allowance for corporate equity
AEMC	Australian energy market commission
AIG	Australian Industry Group
AIRC	Australian Industrial Relations Commission
ALMP	Active labour market policy
AQF	Australian qualifications framework
ASQA	Australian skills quality authority
AWAs	Australian workplace agreements
CFI	Carbon farming initiative
COAG	Council of Australian Governments
CRC	Co-operative research centers
CRC	COAG reform council
CRRP	COAG road reform plan
EPF	Employment pathway fund
ESS	Employee share scheme
FWA	Fair Work Australia
GDP	Gross domestic product
GNI	Gross national income
GST	Goods and services tax
IA	Infrastructure Australia
IBTs	Inclining block tariffs
ICT	Information and communication technology
IFWG	Infrastructure Finance Working Group
INSW	Infrastructure New South Wales
IP	Intellectual property
JSA	Job Service Australia
LP	Labour productivity
LRMC	Long-term marginal cost
MFP	Multifactor productivity
MRRT	Mineral resource rent tax
NPASR	National partnership agreement on skills reform
NSSC	National skill standards council
NWC	National Water Commission
NWI	National water initiative
PBO	Parliamentary Budget Office
PC	Productivity commission
PMR	Product market regulation

PPP	Public private partnership
PRRT	Petroleum resource rent tax
RBA	Reserve Bank of Australia
R&D	Research and Development
SENE	Scale efficient network extensions
SES	Socioeconomic status
SMEs	Small and medium enterprises
SWF	Sovereign wealth fund
TEQSA	Tertiary education quality and standards agency
TIAB	Tasmanian infrastructure advisory group
VET	Vocational education and training (system)

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