3 Economic change in country Australia

The changing structure of the Australian economy has seen an increase in the relative importance of services, notwithstanding the continued expansion in output from agriculture, manufacturing and mining. This increase in services has occurred in both metropolitan and country regions, and has been associated with declining commodity prices, technological advance, and changes in consumer tastes and government policies. These long-term factors have had major effects on the economic and social circumstances of country Australia. Structural change has been greater and more varied in country regions than in the cities. New sources of change continue to emerge.

3.1 Introduction

As noted in the previous chapter, large changes in the geographic distribution of Australia's population have occurred during the course of this century. The earlier substantial movement of people from rural areas to capital cities and other urban centres, and the more recent drift of population to coastal areas and 'sponge' cities, are the major changes in population patterns.

The regional distribution of population is generally driven by economic factors, and in particular the location of jobs. What factors are behind the changing nature and location of jobs in Australia? This is the question which is addressed in this chapter. The answer is important in the context of the inquiry's task of assessing the impact of National Competition Policy (NCP) and other influences on economic and social conditions in country Australia. Section 3.2 summarises the nature and extent of structural change across Australia, and explores the relationship between structural change and some key regional characteristics. Important drivers of change, both market-related and those stemming from changes in government policy, are discussed in section 3.3.

3.2 The changing nature of Australia's economy

Australia, like other countries, has experienced considerable change in the structure of its economy over this century, particularly during the post-war period. This has been driven both by economy-wide developments, and by regionally-specific factors:

- the structure of the national economy has changed as services have become relatively more important, and mining, manufacturing and agriculture, notwithstanding their absolute growth, relatively less important. This is also reflected in the changes in small businesses, labour force characteristics, and patterns of foreign investment;
- the structure of regional economies reflects not only factors which influence the economy generally (regional economies which have a greater concentration of nationally expanding industries will have different employment outcomes than those more reliant on declining industries), but also regionally-specific factors, such as changes in the availability of forestry and mineral resources; and
- the responsiveness of different areas to a given change in the national or regional economy differs according to local characteristics (such as population density, economic diversity, and proximity to a city), which make them more or less vulnerable to particular sources of change.

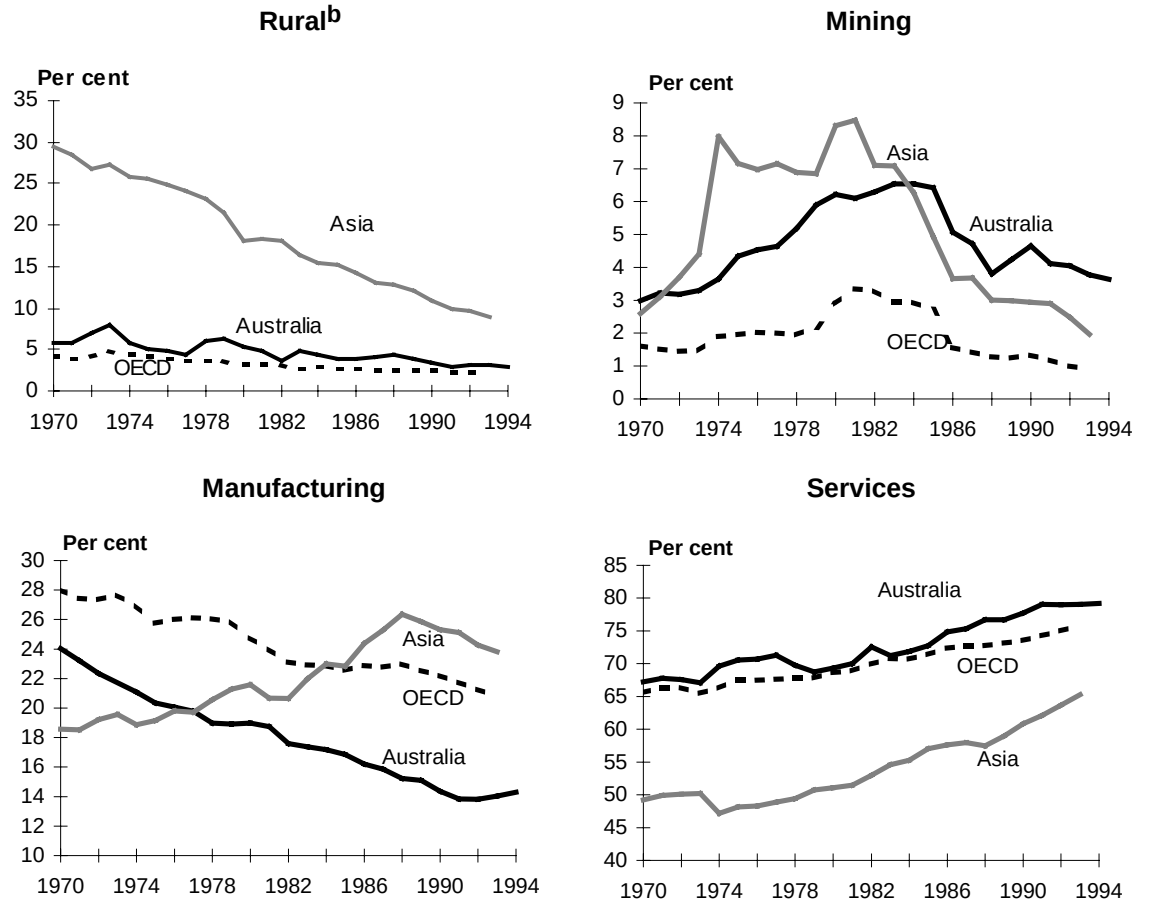
Changes in the structure of the national economy

As an economy develops, technological change and increased productivity lead to rising income levels. These enable greater consumption of manufactured goods and services, with a correspondingly smaller share of incomes spent on food and other 'subsistence' items. Technological advances which raise labour productivity in primary and secondary industries play an important role in inducing these changes.

Thus, through time, there is typically a decline in the relative importance of agriculture and an increase first in the relative importance of manufacturing industries, and, later, in service industries. This does not mean that the actual output of agriculture declines. It simply means that agriculture grows less rapidly than other sectors of the economy. Consequently, its share of Gross Domestic Product (GDP) decline.

Figure 3.1 shows trends in sectoral shares of GDP for a range of countries between 1970 and 1994. The relative contribution of agriculture is lower in Australia and Organisation for Economic Co-operation and Development (OECD) countries than it is in Asian countries, and it has been declining in all countries.

Figure 3.1 **Sector shares of GDP, selected countries, 1970–94**[a]



a Shares are based on value added data in current prices. OECD nations are: Belgium, Canada, Denmark, France, Finland, Germany (West), Italy, Japan, Netherlands, New Zealand, Norway, Sweden, United Kingdom, and the United States. Asian nations are: Hong Kong, Indonesia, Republic of Korea, Philippines, Singapore and Thailand. **b** Rural includes farming, forestry, fishing and hunting.

Source: PC (1998b).

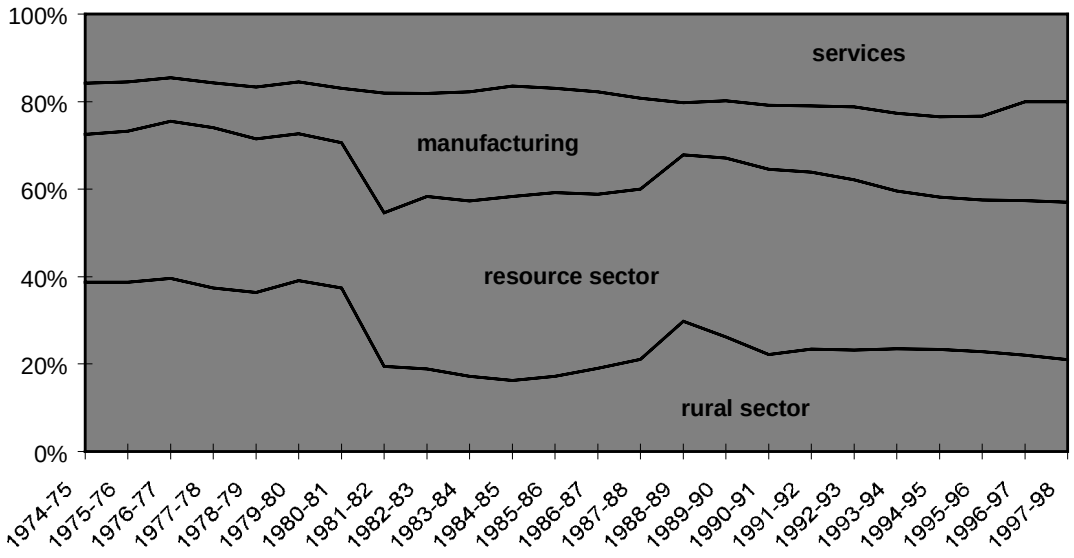
The less pronounced decline in agriculture's share of GDP since the 1970s in Australia and the OECD reflects the considerable adjustment which occurred before the 1970s. For instance, in Australia, agriculture's share of GDP declined from 21 per cent in 1948-49 to around 6 per cent in 1970. It has fallen further since then, to around 2.4 per cent (ABARE 1998a).

Consistent with the trend in most OECD countries, the relative contribution of the manufacturing sector to Australia's GDP is also declining. In Asian countries, manufacturing increased as a share of GDP until the mid-1980s, reflecting relatively recent industrialisation. The contribution of the mining sector has been more volatile in all countries, with its share increasing until the mid-1980s and generally declining since then. In all countries, the contribution of the service sector has become more important since the 1970s. The contributions to GDP of the rural and mining sectors

have remained much higher in Australia than in the rest of the OECD, a reflection of Australia's continued comparative advantage in agriculture and mining.

The changes in the sectoral composition of the economy have been reflected in changes in the composition of exports. Rural exports (farming, forestry, fishing and hunting) fell from around 70 per cent of total exports in the 1950s to 39 per cent in 1974-75. By 1997-98, the share of rural exports had fallen further, to around 23 per cent, while exports of other merchandise (ie manufactured goods) and services had grown (figure 3.2). Taken together, rural and mining commodities still account for nearly 60 per cent of Australia's total exports.

Figure 3.2 **Export shares (by value)[a], Australia, 1974-75 to 1997-98**



a The rural category comprises farm (including wine), forestry (including paper and paperboard) and, from 1988-89, fisheries exports (excluding tuna under joint venture agreements). The resources sector excludes bauxite, diamonds and manganese prior to 1990-91.

Source: ABARE (1998b).

Agriculture and mining continue to be important sources of employment and economic activity in many parts of country Australia. As they depend heavily on export markets in which Australia is a price taker for its products, many regional economies in country Australia are vulnerable to changes in world prices and other conditions in commodity markets.

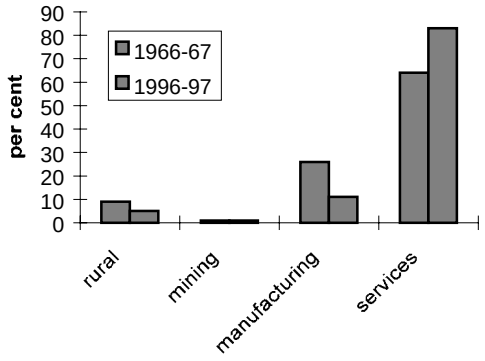
FINDING 3.1

Since the early 1970s, changes in the overall structure of the Australian economy have followed the broad pattern of development of most developed economies. Notwithstanding the absolute growth in output of agriculture, mining and manufacturing, their shares of gross domestic product have declined, while that of the services sector has risen.

Impacts of the changing pattern of the economy on the labour force

Consistent with the broad sectoral trends outlined above, the proportions of workers employed in agriculture and manufacturing have declined in Australia. The service sector now absorbs more than 80 per cent of the total labour force (see figure 3.3). The share of employment attributable to the mining sector is around 1 per cent — the same as thirty years ago.

Figure 3.3 **Employment shares by sector, Australia, 1966-67 and 1996-97**



Sources: IAC (1986); ABS (1998d).

Table 3.1 shows that overall employment increased by 21 per cent between 1981 and 1996. Non-metropolitan employment rose by 22 per cent from 1.9 to 2.3 million, while metropolitan employment rose from 4.4 to 5.3 million, or by 19 per cent.

The service sector has been the main provider of new jobs in both metropolitan and non-metropolitan areas. Employment in services increased overall by 42 per cent. In 1996, the service sector accounted for 82 per cent of employment in metropolitan areas, and 72 per cent in non-metropolitan areas. Of the major service industries, 42 per cent of total employment in the electricity, gas and water industry is in country regions. With the exception of finance and business, 25 per cent or more of employment in all other service industries is in country regions.

Although total manufacturing employment declined by 13 per cent, there was an increase of 16 per cent in country Australia. In 1996, metropolitan areas accounted for 75 per cent of total manufacturing employment, but in terms of its contribution to overall employment by region, manufacturing employment was nearly as important in non-metropolitan areas as it was in metropolitan areas. Manufacturing industries for which non-metropolitan employment is a significant share of total

industry employment are food, beverages and tobacco, wood products, basic metals, fabricated metals, and non-metallic minerals.

Table 3.1 **Employment[a] in city and country regions[b] by industry sector, 1981–96**

Sector	*Industry employment 1981*				*Industry employment 1996*			
	Metro		*Non-Metro*		*Metro*		*Non-Metro*	
	000's	%	000's	%	000's	%	000's	%
Agriculture	43	1.0	336	17.8	48	0.9	277	12.0
Mining	33	0.7	56	3.0	29	0.5	57	2.5
Manufacturing	912	20.7	203	10.7	731	13.7	235	10.2
Services	3 098	70.4	1 129	59.7	4 337	81.5	1 666	72.0
Unallocated[c]	316	7.2	167	8.9	176	3.3	79	3.4
Total	4 402	100.0	1 891	100.0	5 321	100.0	2 315	100.0

a Based on data from the ABS *Census of Population and Housing.* Differences in methodology between the ABS Census and the ABS *Labour Force Survey* mean that employment data can differ between these sources — refer to ABS (1998). **b** The 194 statistical subdivisions (SSDs) used in the ABS Census have been combined into 113 regions. Regions are defined according to statistical divisions (SD) and SSDs drawn from the Australian Standard Geographical Classification. Newcastle, Wollongong and Geelong were added to the eight capital city SDs to form the 'Metro' (metropolitan) grouping. The remaining SSDs comprise the 'Non-Metro' group. **c** Comprises people who have not stated the industry in which they were employed.

Sources: Commission estimates based on ABS (1998c); unpublished 1996 *Census of Population and Housing* data); and PC (1998b).

The contraction in manufacturing employment bottomed out in metropolitan Australia in 1991. Between 1991 and 1996 manufacturing jobs growth was faster in non-metropolitan than in metropolitan areas. This probably reflects the expansion of manufacturing activities such as food and mineral processing outside the capital cities.

Agricultural employment declined overall by 14 per cent between 1981 and 1996, by which time it comprised only 12 per cent of non-metropolitan, and about 1 per cent of metropolitan, employment. Hence, even though agriculture and mining are still important in country Australia, services now provide by far the greatest number of jobs in country areas, just as in metropolitan areas.

Impacts of the changing pattern of the economy on small business

The changing structure of the economy has been accompanied by changes in the sectoral distribution of small businesses. The service sector has typically included a relatively high proportion of small businesses. The fast growth of this sector has meant that, overall, small businesses have become more prominent. Services' share

of total employment increased from 66 per cent to 73 per cent over the period 1983-84 to 1994-95 (Revesz and Lattimore 1997).

However, within the service sector, there have been declines in small businesses' employment shares in, for example, accommodation and cafes, and retail services, despite the fact that both these sectors have expanded since the 1980s. For example, employment in small retail businesses increased over the period 1983-84 to 1994-95, but the share of total retail employment accounted for by such small businesses fell by approximately 7 per cent (Revesz and Lattimore 1997).

Reflecting the reduction in the relative size of the manufacturing sector, manufacturing small businesses have become a smaller part of the economy. However, within the manufacturing sector, small business has increased its share, accounting for about 52 per cent of manufacturing employment in 1996-97, compared with 40 per cent in 1983-84.

Consistent with the decline in the relative importance of the rural sector, employment by small family farms as a proportion of national employment also declined. However, in 1995, small businesses accounted for a slightly higher share of total rural sector employment than was the case in 1983. Revesz and Lattimore explained:

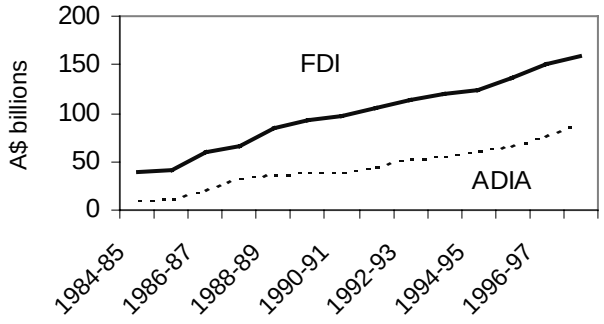
> … the change in the employment share of small business at an aggregate level largely reflects structural change in the economy… The reason for a growing aggregate small business share is that sectors in which small firms play an intensive (minor) role have tended to expand (decline) in relative terms. (1997, p. 38)

Foreign investment in Australia

The levels of both foreign direct investment (FDI) in Australia and Australian direct investment abroad (ADIA) have been growing strongly in recent years (figure 3.4). This is as a result of increasingly open international trade and capital flows. Increased ADIA is a reflection of the growing ability of Australian companies to seek profitable investment opportunities offshore.

Figure 3.4 **FDI in Australia, and Australian direct investment abroad, 1984-85 to 1997-98**

Current values



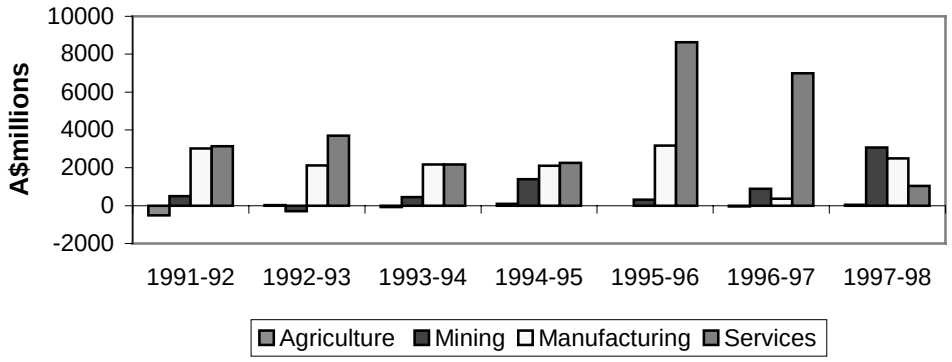
Sources: ABS (*Balance of Payments and International Investment Position*, Cat. no. 5302); ABS (*Australian System of National Accounts*, Cat. no. 5204).

Data compiled by the ABS, although rather dated, provide an indication of the extent of foreign ownership in particular industry sectors — measured, generally, as total foreign ownership as a proportion of value added. These estimates indicate that the level of foreign ownership of agricultural land was low relative to that in mining and manufacturing:

- agricultural land (1983-84), 5.9 per cent;
- mining (1984-85), 49.5 per cent; and
- manufacturing (1986-87), 30.9 per cent.

Changes in the patterns of FDI during the 1990s broadly reflect the increased importance of services (see figure 3.5). The level of foreign investment directed toward agriculture, forestry and fishing has been negligible. The sharp increase in FDI in services in 1995-96, and the subsequent decline, are due to fluctuations in FDI in electricity, gas and water (EGW) and finance and insurance.

Figure 3.5 **Foreign investment flows by industry, 1991-92 to 1997-98**
Current values



Source: unpublished ABS data.

FDI, while perhaps not altering the pattern of economic development, enables investment to take place which otherwise may not occur. Australia also benefits from foreign investment through improved access to new technology, skills and markets, thereby contributing to economic growth and technological development, and enhancing living standards. Australia's level of domestic saving has been such that, without FDI, Australia's level of investment and growth would have been considerably lower.

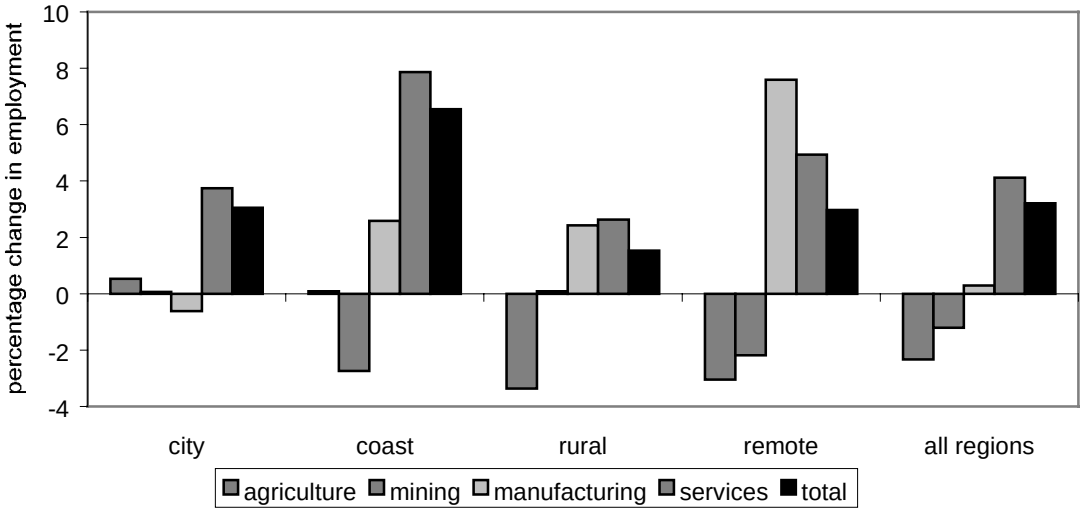
Changes in the structure of regional economies

The general growth in services, and the general decline (as a share of GDP) of primary industries, has had important implications for regional economies and the employment experience of regions in country Australia.

The implications of these changes for jobs growth in different types of regions are shown in figure 3.6, where Census data from 1986 and 1996 on employment by sector have been regrouped into the city, coast, rural and remote region classifications used in chapter 2 in order to compare changes in employment. It can be seen that jobs growth over the decade to 1996 has been strongest in coastal areas, and weakest in rural regions.

Figure 3.6 also shows that the loss of agricultural jobs has been an important contributor to the slower jobs growth in rural and remote regions since 1986. Manufacturing has been an important contributor to jobs growth in coastal, rural and remote regions. Mineral and agricultural processing are often located in remote regions, close to the source of ore or agricultural produce to be processed. The increasing availability of lower cost energy in remote areas also facilitates the processing of primary commodities in remote regions (see chapter 5). Service industries have been important for jobs growth in all regions.

Figure 3.6 **Regional sources of changes in employment, 1986–96**
per cent per annum



Sources: PC estimates based on ABS unpublished *Census of Population and Housing* data 1986 and 1996.

Structural change indexes

Census employment data can be used to provide a more detailed comparison of changes in country and metropolitan regions. While the broad changes in the national economy are mirrored in the regions, the aggregate changes in the structure of the national economy also mask a lot of the diversity of experience that is driven by local factors. The 'depth' or diversity of the local economy — whether it is city or country — affects the ability of local communities to adapt to any particular change in regional economic conditions.

An accepted method of measuring structural change involves using changes in the industry shares of total employment over time to construct structural change indexes (SCIs). Such indexes can then be used to give a single index value for the structural change which has occurred in a region over a specified period of time. They provide a measure of the extent to which industries within regions are changing at different rates as a result of shifts in the composition of employment — that is, structural change (OECD 1994; PC 1998b).

The Commission's SCIs are based on changes in industry employment shares across regions from 1981 to 1996. The SCI is bounded by zero and 100. A region with an SCI of 10 means that 10 per cent of the workforce in that region in 1996 would have to move into different industries to re-establish the regional industry employment shares which prevailed in 1981 (see box 3.1).

Box 3.1 **Structural change indexes**

SCIs reflect many influences on the composition of employment, which can pull in opposite directions. They do not necessarily imply 'good' or 'bad' adjustments. For example, a region in which a new mine opens could have a substantial increase in the share of employment in mining. A mine closure in another region could result in an equivalent reduction in the share of employment in mining. Both regions will have the same SCI, despite one being in decline and one expanding.

In addition, SCIs do not explicitly take aggregate employment growth into account — for instance, if employment doubled in each industry in a region, individual industry shares of employment would not change and the SCI would be zero.

The aggregation of industries and regions influences the magnitude of SCIs. For this inquiry, regional SCIs were calculated for 113 regions and 60 industries. A more disaggregated data set would increase the SCI estimates because it would capture movements between more regions and/or industries — if a factory closes in Ipswich and another factory in the same industry opens in Albany, then industry structure will have changed at a regional level, but not at a national level.

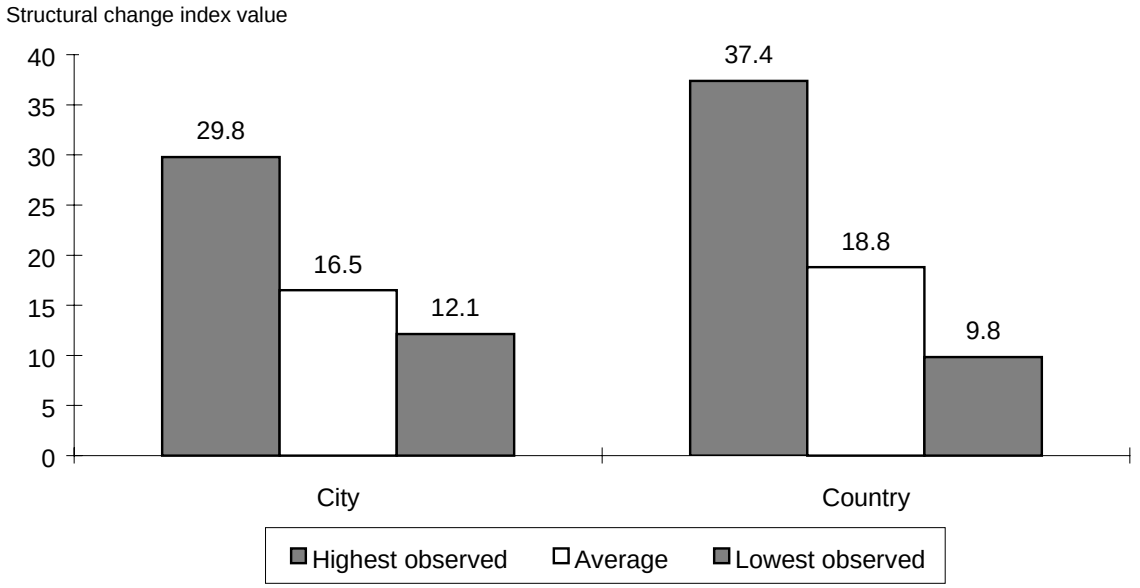
Source: PC (1998b).

The calculated SCIs show that, on average, country regions experienced a greater level of structural change than cities. They also had greater variability in their levels of structural change — country Australia had the regions with both the highest and the lowest SCIs (see figure 3.7).

Cities generally have lower SCIs because they tend to have more diversified economic bases. Because of their relatively small and narrow economies, country regions are more vulnerable to change than are the cities. For example, if a firm closes in a rural township, it is more difficult for unemployed workers to find alternative employment in the same area than it would be if a firm closed in a metropolitan area.

As noted, the SCI value depends solely on measured changes in the industry structure of total employment in a region — it is not influenced by whether total employment in a region is increasing or decreasing. However, whether a region is growing or not is clearly important. To take this into account, the Commission has used measured structural change *and* changes in employment to group regions into one of four quadrants: high SCI/low employment growth; high SCI/high employment growth; low SCI/high employment growth; and high SCI/low employment growth.

Figure 3.7 **Structural change in city[a] and country regions, 1981–96**



a 'City' includes capital cities plus Newcastle, Wollongong, and Geelong.

Sources: PC estimates based on ABS (1998c); ABS (unpublished 1996 *Census of Population and Housing* data); and PC (1998b).

Figure 3.8 **Structural change and employment growth, 1981–96**

High

SCI

Low

Group 1 *High change/low growth*	*SCI*	*Emp growth*
Lyell (Tas)	37.4	-58.2
Arnhem (NT)	30.9	-5.7
Fortescue (WA)	30.5	-5.8
Wollongong (NSW)	29.8	3.6
Far West (NSW)	26.6	-31.1
De Grey (WA)	24.7	-11.5
Whyalla (SA)	23.3	-28.1
Flinders Ranges/Pirie (SA)	23.2	-21.8
Gippsland (Vic)	22.0	-10.7
Upper Darling (NSW)	21.7	0.4
West Central H'lands (Vic)	21.4	-11.8
Campion (WA)	20.9	-10.0
Lower North (SA)	20.4	-11.4
Central Tablelands (NSW)	20.1	-5.3
Central West (Qld)	19.2	-11.2
Group average	**23.9**	**-11.5**

Group 2 *High change/high growth*	*SCI*	*Emp growth*
Fitzroy (WA)	34.4	80.8
Gascoyne/Carnegie (WA)	27.2	37.2
Dale (WA)	25.9	127.7
Lower Top End/Barkly (NT)	25.7	48.8
North-West (NT)	24.1	168.0
Ord (WA)	23.8	41.6
Vasse (WA)	22.7	111.1
Lefroy (WA)	22.6	70.1
Far North (Qld)	20.8	44.1
Mackay Bal (Qld)	20.7	40.3
Outer Adelaide (SA)	20.7	43.5
East Central H'lands (Vic)	20.5	44.3
Cairns City Part A (Qld)	19.4	98.3
Townsville (Qld)	18.8	32.8
Snowy (NSW)	18.7	59.9
Group average	**23.1**	**69.9**

Group 3 *Low change/low growth*	*SCI*	*Emp growth*
North Eastern (Tas)	17.1	-17.1
North Wimmera (Vic)	16.2	-30.9
Pallinup (WA)	16.0	-15.5
Hotham/lakes (WA)	16.0	-18.8
Upper South East (SA)	15.5	-8.6
Lachlan (NSW)	15.4	-10.3
Northern Slopes (NSW)	14.6	-3.1
Murray-Darling (NSW)	13.8	1.0
Riverland (SA)	13.7	2.1
North Central Plain (NSW)	13.5	-10.6
Lower South East (SA)	12.9	4.2
Northern Tablelands (NSW)	12.8	-1.6
Adelaide	12.6	11.2
Mildura/Mallee (Vic)	12.4	5.9
Lower M'bidgee (NSW)	9.8	2.8
Group average	**14.2**	**-5.6**

Group 4 *Low change/high growth*	*SCI*	*Emp growth*
South Loddon (Vic)	17.8	52.9
Barwon (Vic)	17.7	47.0
Darwin	16.2	47.1
R'mond-Tweed Bal (NSW)	16.0	39.0
Lower South Coast (NSW)	15.6	44.4
Queanbeyan (NSW)	15.3	97.6
Mackay City Part A (Qld)	14.7	37.0
Brisbane	14.4	49.2
Sunshine Coast (Qld)	13.8	112.2
Central NT	13.6	56.8
Tweed Heads (NSW)	13.3	67.0
Gold Coast (Qld)	13.2	125.6
Canberra	12.9	47.9
Perth	12.1	43.1
Bathurst-Orange (NSW)	11.6	22.5
Group average	**14.6**	**54.5**

Low ← **Employment growth** → **High**

Note: Regions are based on Australian Bureau of Statistics (ABS) statistical divisions (SD) and statistical subdivisions (SSD). The Commission merged some SSDs due to inconsistencies in the data series between 1981 and 1996. These included: *Arnhem* (Alligator and East Arnhem SSDs), *Outer Adelaide* (Kangaroo Island, Onkaparinga and Fleurieu SSDs), *Barwon* (East Barwon and West Barwon SSDs), and *Townsville* (Townsville and Thuringowa SSDs). The data from PC 1998b have since been further modified using more recent ABS Census data due to problems arising from boundary changes between 1981 and 1986. This resulted in revised employment growth estimates for West Central Highlands in Group 1 (revised from -27.5 to -11.8) and East Central Highlands in Group 2 (revised from 65.3 to 44.3) and the replacement of Moreton Balance by Townsville (Group 2) and Greater Shepparton/North Goulburn by Barwon in Group 4.

Sources: PC (1998b) and unpublished ABS Census data.

Figure 3.8 shows the top 30 regions (high change, and either high or low employment growth) and the bottom 30 regions (low change, and either high or low employment growth). For example, the group 'High change/low growth' contains the 15 regions with the highest SCI ranking regions which also had low employment growth. Many other regions fell between Groups 1 and 3, or between Groups 2 and 4, and are not shown in figure 3.8 (but are reported in PC 1998b).

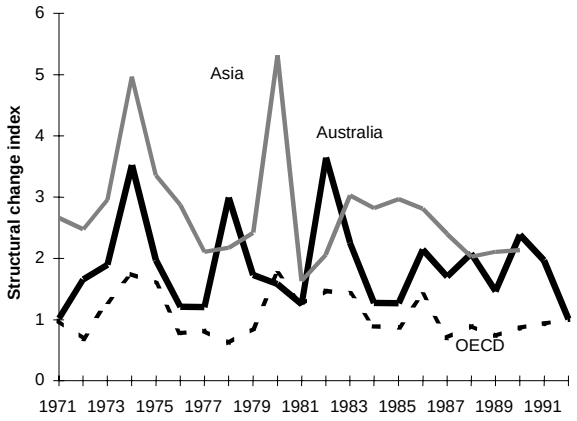
- *High change and low growth regions:* All but two regions in this group had employment falls. The sharpest decline — nearly 60 per cent — was in Lyell (Tasmania), where employment in metallic minerals fell from 2000 workers in 1981 to 600 in 1996 (largely at the Mount Lyell copper mine). Job losses in electricity and gas accounted for a further 1000 jobs. Job losses in the electricity and rail industries were significant in the Flinders Ranges/Pirie region in South Australia. Also in South Australia, Whyalla experienced substantial change because of the decline in the base metals industry.
- *High change and high growth regions:* This group contains several remote regions with structural change driven by a core industry. Increases in mining contributed substantially to employment growth in the Gascoyne/Carnegie and Lefroy regions. Tourism contributed to strong growth and high structural change in Cairns. The group also contains high growth regions close to large cities, such as Outer Adelaide (SA) and the area around Townsville (Queensland).
- *Low change and low growth regions:* These regions are mainly rural, with agricultural employment shares of around 30–50 per cent. Agricultural activities in the Mildura-Mallee region, for example, accounted for 33 per cent of total employment in 1981 and 25 per cent in 1996. This type of stability saw the region register a low SCI and employment growth below the national average.
- *Low change and high growth regions:* Employment in this group grew at more than double the national average. These regions had low rates of structural change and more than half had service sectors which accounted for more than 80 per cent of employment in 1981. This group is the most urbanised — it includes Perth, Canberra, Brisbane, Darwin and coastal areas in New South Wales and Queensland. Australia's two largest cities, Sydney and Melbourne, had low SCIs (15.7 and 16.2) respectively, as well as employment growth rates lower than the other capital cities.

It can be seen that those regions with bigger than average service sectors (Group 4), and more balanced regional economies (Group 2), have experienced the highest growth rates since 1981; while those regions with above average reliance on agriculture (Group 3) and mining (Group 1) have had low rates of growth since 1981. The Group 1 regions also include many areas in which industries subject to restructuring or rationalisation account for a significant share of local employment.

Job losses associated with industry restructuring (for example, in the electricity industry) can have major employment impacts.

The diversity of regional experience is due, in part, to particular characteristics of different regions. The experience of regions in Groups 2 and 3 shows that, while strong growth and employment outcomes can be consistent with having a limited number of dominant industries, such regions are vulnerable when those industries experience a downturn.

Figure 3.9 **Structural change indexes in selected countries, 1971–92**



Source: PC (1998b).

The general pattern of structural change is not unique to Australia. Figure 3.9 shows that trends in structural change are broadly similar across a range of countries. For example, all responded in much the same way to the oil shocks of the 1970s. The extent of structural change, however, does differ. Australia shows a higher rate of change than OECD countries, but less than in Asia.

FINDING 3.2

Since the early 1980s, both the level and the variability of structural change has been greater in country Australia than the cities.

FINDING 3.3

High rates of structural change in country Australia do not necessarily involve employment losses. Similarly, low rates of structural change are not always associated with high employment growth.

3.3 Drivers of change

It has been shown that the employment experience of different regions over the 1980s and 1990s has depended in part on their industry structure. This section looks at why some industries have performed more strongly than others. Some general factors driving the broad changes in the pattern of the economy are discussed first. These include changing transport patterns, rising incomes and changing lifestyle

preferences which are behind the rising importance of services, and general productivity growth.

Then more specific influences on the performance of the primary industries are considered, given the continued importance of mining and agriculture in many parts of country Australia.

Factors affecting the cost structures of industries in the service sectors are also discussed. These include productivity growth and technological change.

Finally, some other factors influencing the pattern of economic activity (eg industry assistance) and emerging factors which could affect regional economic performance in future years (eg resource access) are discussed briefly.

Transport and regional development

Improved transport links have played an important role in the geographical distribution of economic activity, facilitating the concentration of activity into a limited number of regional and urban centres close to the main consumer markets.

At the turn of this century, for example, Australia was largely agricultural. Because of the dispersed population associated with a largely agricultural workforce, manufacturing was highly decentralised throughout regional Australia. This offset the high transport costs of distributing goods to consumers.

Over time, rising agricultural productivity has enabled a smaller share of the population to be devoted to growing food. In conjunction with improved road and rail links and long-term reductions in the costs of transport, manufacturing became more geographically concentrated into a limited number of regional centres. This gave manufacturers the advantage of being closer to an increasingly urbanised and skilled workforce, and the ability to obtain economies of scale, while lower transport costs reduced the costs of transporting goods to rural consumers.

Improvements in the quality of personal transport have also contributed to centralisation of economic activity in regional centres over time. Better roads and faster, more reliable and more comfortable cars mean that it is easier to commute longer distances between home, work and leisure activities. This allowed people to travel further for shopping and other activities, adding to the adjustment pressures experienced by small towns unable to match the facilities offered by the regional centres.

Box 3.2 presents a snapshot of a small community in a cane growing region in North Queensland. This community has experienced a considerable change in economic circumstances, with significant social implications, over the course of this century.

Box 3.2 Changes in a rural Australian community: Finch Hatton, Queensland

The first farm was established in 1891. A sugar mill was established to crush the cane in 1906. By 1910 the town's population was 266, while the population of the surrounding area was 500. In addition to sugar, the area supported dairying, sawmilling, and some gold mining. Initially, travel to the nearest settlement took two days. The establishment of the rail link to Mackay reduced the trip to a couple of hours. By 1913 the town supported a primary school, the sugar mill, three hotels, a number of general stores, a cordial factory, two blacksmiths, two billiard rooms and three refreshment rooms.

The increased productivity from the mechanisation of cane farming enabled the consolidation of farms into larger establishments with lower labour requirements. Replacing the horse and plough with tractors and bulldozers opened up further land to cane production while the cane harvester replaced the cane cutters. The consolidation of farms, improved transport and the economies of scale available from larger mills led to the closure of the mill. In 1936, 134 cane farms produced an average of about 900 tons of cane per year per farm. Today there are 51 farms in the district producing on average 3400 tonnes of sugar cane per year which is transported to larger mills in other centres.

With improved roads and motor vehicles, larger centres became more accessible. The sealed road reduced the trip to Mackay to under an hour. As a result, shopping and entertainment patterns changed, and services such as schools were consolidated.

From a peak of over 1000 at the beginning of the Second World War, the population currently consists of 350 people in the town and 250 in adjacent districts. While cane farming remains the dominant industry, other activities have emerged to diversify the economic base of the community, such as tourism, and mango processing for export markets. Reflecting changes in land use, there has been a trend for people to move to acreage blocks which were originally small cane farms and commute to Mackay in around 45 minutes to work. Despite its decline in size, there remains a strong sense of community, with the town winning a 1999 Tidy Town award and continuing to boast the best one day show in Queensland.

Source: Mirani Shire Council (unpublished information).

These changes have been the result of technological progress, including improved methods of transport which pre-date National Competition Policy (NCP) by many decades. Communities in other agricultural regions have been subject to similar changes as a direct result of ongoing changes in technology, particularly the mechanisation of agriculture, and improved transport and infrastructure. These

trends are continuing. Freight transport costs between major routes have fallen considerably over the last 30 years. These cost reductions have been reinforced by ongoing reforms in road, rail and air transport (see chapter 5).

While the 'sponge city' phenomenon has been particularly prevalent in the wheat-sheep zones of New South Wales, Western Australia and Victoria (chapter 2), it is not a uniquely Australian phenomenon. As box 3.3 shows, a similar pattern of development occurred in the prairie regions of Canada.

Box 3.3 **Structural adjustment — a Canadian perspective**

The development of rural Saskatchewan was influenced by legislation (such as homestead acts) and the technology of the late nineteenth and early twentieth century. These resulted in a dispersed pattern of small farms. An extensive network of railways was developed across the prairie to carry rural products, particularly wheat, to world markets. This network provided lines to within 16 kilometres of nearly every farm, and grain sidings were constructed along the track, on average only 5 kilometres apart. Other businesses developed around the grain sidings to service rural industries and the number of mostly small communities in Saskatchewan peaked at more than 900.

Technological advances made this pattern of settlement across Saskatchewan obsolete. The mechanisation of agriculture reduced labour-intensive processes. Roads were upgraded and more reliable motor vehicles reduced the need for people to stop at small communities en route to their destination. Improvements in phone systems and the reorganisation of the school system into larger schools reduced the need for the network of small communities which had developed to service agriculture.

The shopping patterns of the rural population changed in response to the improved roads and more reliable cars — small and intermediate sized towns were bypassed for larger towns which could provide greater variety and lower prices. Longer trips to larger centres became the norm. Consequently, many small rural communities declined as commercial outlets and public infrastructure and services were withdrawn. However, some communities were able to consolidate and become larger.

While the production of wheat and other grains remains the most important agricultural output in Saskatchewan, the number of farms has declined and farm size has increased. For example, the number of farms declined from 142 000 in 1936 to just over 60 000 by 1991. The rural population represented 70 per cent of Saskatchewan's population in 1936 — by 1991 it accounted for only 37 per cent.

Sources: Olfert (1997); Olfert and Stabler (1992).

Nor are the concerns about the centralisation of economic activity in cities and regional centres a recent phenomenon. It was reported in the *Town and Country* in 1889 — more than a century ago — that:

> The present arrangements suit the city … At present there is but one centre and everything goes toward it. It is this terrible concentration of centralism which is so

objectionable and dangerous. (quoted in McKillop 1999)

Rising incomes and changing lifestyle preferences

As Australia's population has grown, so too have personal incomes. This can be seen by the fact that real GDP per capita rose from just over $18 000 in 1971-72 to almost $30 000 in 1996-97 (in 1996-97 dollars). As real incomes rise, the proportion of income spent on basic necessities, such as food and clothing goods falls, while the proportion spent on services such as education, health, recreation, travel and tourism, increases. As national incomes rise, therefore, these changes in spending patterns drive a substantial shift in the sectoral composition of the economy. This broad trend was shown in figure 3.1.

The geographical implications depend in large part on where service sector jobs, and hence population, can locate. Some jobs — for example, in mining and agriculture — are constrained by the availability of mineral deposits or suitable soils. Manufacturing jobs are often, but not always, located in urban centres which offer better access to a skilled workforce and transport cost savings. New developments in computer and communications technology are reducing the need for the providers of some services and their customers to be close to each other.

Changing lifestyle preferences and the locational flexibility of some service industries mean that the growth of the services sector has afforded many regional areas, particularly coastal and other areas offering lifestyle advantages, with significant job opportunities. Those regions which are well placed to take advantage of rapidly growing service industries such as tourism (see box 3.4) have enjoyed an increase in economic activity and employment. For other service industries, however, location and the economies of scale afforded by size and/or proximity to a skilled labour force may continue to favour their centralisation in cities or larger regional centres.

Another important lifestyle trend over the last ten years or so has been the so-called 'coastal drift'— the increase of population in coastal areas along the eastern seaboard and the southwest corner of the continent. Retirees seeking an agreeable climate and lifestyle is one important factor explaining the growth of some coastal regions. Moreover, their demand for medical, recreational, housing, and banking and financial services creates opportunities for the providers of these services, thereby 'pulling in' other demographic groups and contributing to the economic growth of these regions.

Box 3.4 **The growth of tourism**

The rapid growth of Australia's tourism industry is linked to both rising incomes and to Australia's natural attractions — its climate, beaches and geographical features.

The average number of overseas visitors increased from one million in 1984 to almost 4 million by 1995, an average growth rate of 13 per cent per year. This contributed to new hotel and tourist resort developments, and growth in amusement and theme parks, restaurants and tour services for tourists.

Expenditure associated with inbound tourism was allocated unevenly between capital city and non-capital city regions, with considerable State variation as well. For instance, the capital/non-capital city proportions were approximately 90/10 in New South Wales, Victoria, South Australia and Western Australia; 20/80 in Queensland and the Northern Territory; and 50/50 in Tasmania (PC 1999c). Consequently, the growth of tourism is more likely to have had direct implications on a broad scale for country Australia in Queensland, Tasmania and the Northern Territory, although it has also been an important driver of structural adjustment in some coastal regions.

Tourism has boosted activity in regional economies such as north Queensland and south-west Western Australia, and in some regional economies which have been adversely affected by the depletion of natural resources. For example, in Eden in New South Wales, tourism has provided new employment and business opportunities, which has reduced the impact of the scaling down of commercial logging and fishing activities.

Productivity growth

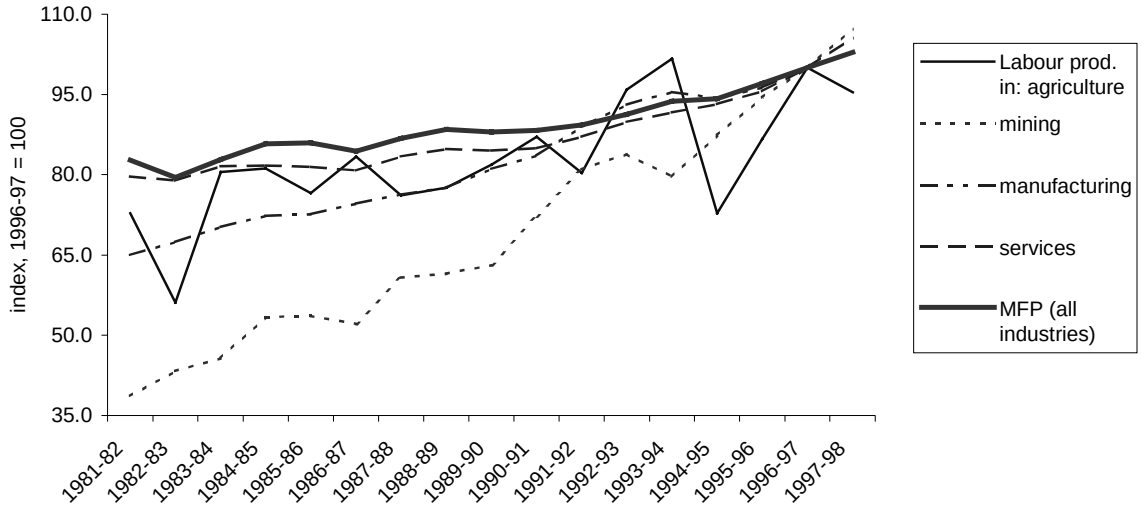
Productivity, or the output produced per unit of labour and capital, is an important source of change in an economy. Australia's rate of multi-factor productivity (MFP) growth has increased during the 1980s and 1990s (figure 3.10). It averaged 2.4 per cent a year over the period 1993-94 to 1997-98, compared with an annual average rate of 1.4 per cent since 1964-65 (Parham 1999).

Figure 3.10 also shows labour productivity growth in each broad sector. The volatility of labour productivity in the agricultural sector is clear; mining and manufacturing have experienced steadily rising labour productivity, while labour productivity growth in services has closely tracked the overall trend in MFP.

The trend of increasing MFP lies behind the rising incomes and structural change described earlier in this chapter. However, as productivity growth has varied between sectors and industries, so have the regional effects of productivity growth. These variations can be influenced by the particular source of productivity growth — whether it is relative price changes, increased investment, better labour

productivity, or technological development. This is discussed below in the context of agriculture, mining and services.

Figure 3.10 **Aggregate MFP, and labour productivity growth by sector, 1981-82 to 1997-98**



Sources: updated from Gretton and Fisher (1997); Parham (1999).

Agriculture

A large proportion of Australian agricultural products is sold in international markets (see table 3.2). In volume terms, exports as a proportion of annual production of agricultural commodities ranges to well over 80 per cent for major products such as wool, cotton and sugar. Grains, beef and lamb also depend significantly on export markets.

In international markets, Australia's primary producers are generally 'price takers'. Over the last four decades, world prices for many agricultural commodities have declined significantly in real (inflation-adjusted) terms. Domestically this has seen the prices received by farmers increasing less rapidly than inflation and, importantly, less rapidly than the price increases for farm inputs. An indication of the net price effect, or farmers' terms of trade, is provided by changes in the ratio of prices received and prices paid by farmers in Australian dollars.

Figure 3.11 shows that there has been a long-term downward trend in farmers' terms of trade since the mid-1950s, notwithstanding the substantial year-to-year fluctuations. In the mid-1950s, the ratio of the costs of production relative to the prices received by farmers for their output, was four times higher than it is today.

In response to these sustained price pressures, farmers have made significant productivity improvements. Over the two decades to the mid-1990s, output increased, on average, by almost 2 per cent a year (see figure 3.12).

As indicated in figure 3.12, the average increase in output has been achieved from productivity improvements, with a net reduction in labour inputs and a very small net increase in the amount of capital invested in the sector.

There has been considerable variation in the productivity response of different agricultural industries. Productivity growth has been much higher for broadacre cropping industries than for broadacre livestock. It has also been higher in the wheat–sheep zone than in the pastoral or high rainfall zones (Martin *et al.* 1999).

There has also been some regional variation. Agricultural productivity has grown more slowly in Queensland, Tasmania and, to a lesser extent, New South Wales than in Victoria, South Australia and Western Australia (PC 1999c). In the cases of Queensland and New South Wales, this may also reflect the drought in the early to mid-1990s.

An important means by which farmers improve productivity is by consolidation of farm holdings in order to achieve better economies of scale. Hence farm sizes have

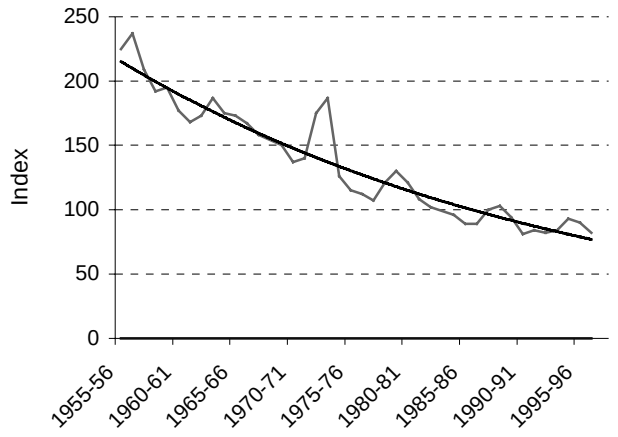
Table 3.2 **Export orientation of Australia's agricultural sectors, 1996-97**

Commodity	*Export orientation*[a]
	per cent
Grains	
Wheat (unprepared)[b]	77.4
Barley (unprepared)[c]	64.0
Rice	40.3
Lupins	56.5
Industrial crops	
Raw cotton	83.1
Sugar	81.3
Meat	
Beef and veal[d,e]	38.9
Lamb and mutton[d]	35.1
Pig meat	2.1
Wool[f]	>100
Other products	
Cheese	44.9
Skim and wholemilk powder	81.0

a Export volumes in kilotonne as a proportion of domestic production. **b** Includes the wheat equivalent of flour. **c** Includes the grain equivalent of malt. **d** For exports, covers shipped weight (fresh, chilled or frozen). For domestic production, covers carcass weight for production and includes carcass equivalent of canned meat. **e** Includes meatloaf. **f** Reflects sales of stocks.

Source: ABARE (1998d).

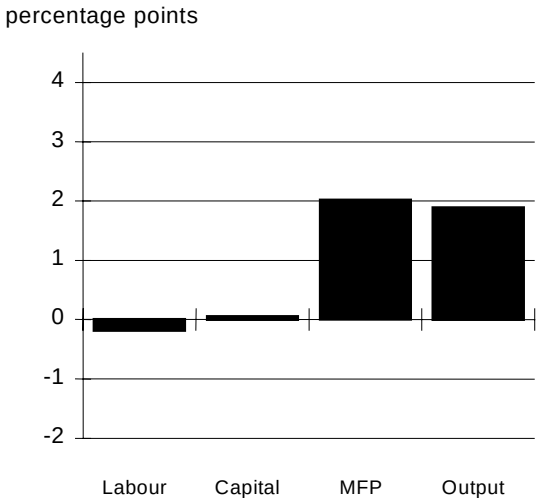
Figure 3.11 **Farmers' terms of trade, 1955-56 to 1996-97**



a Ratio of index of prices received by farmers, in Australian dollars, to index of prices paid by farmers. Index 1987-88=100.

Source: ABARE (1997).

Figure 3.12 **Contributions to average annual output growth for agriculture[a], 1974-75 to 1995-96**



[a] Agriculture, forestry, fishing and hunting. MFP (multi-factor productivity) estimated by subtracting contribution due to labour and capital from output growth.

Source: Commission estimates based on Gretton and Fisher (1997).

increased across most farm sectors, with an accompanying decline in the number of farms (see figure 3.13).

These trends have continued in subsequent years. The average rate of decline in the number of farms over the decade to 1994-95 was 1.3 per cent a year (ABARE 1998a). The dairy industry had the highest annual average decline (2.2 per cent), with smaller farms leaving the industry and the remaining farms becoming larger. Broadacre agriculture registered the second largest rate of farm decline, but lost the most establishments in absolute terms.

It is this sustained pressure that is driving the structural change in many rural regions reliant on traditional agricultural commodities (Group 3 in figure 3.8). For example, the rate of job loss in the broadacre sector has been above the agricultural industry average of 2 per cent since the mid-1970s. In contrast, there has been significant employment growth in the horticultural sector in a number of States. These patterns have implications for employment, services, and adjustment pressures in country areas.

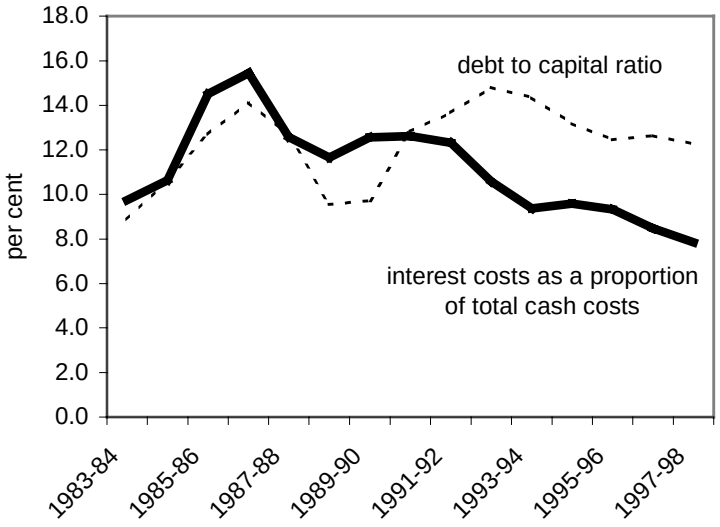
Figure 3.13 **Number of agricultural establishments and average size[a], 1960-61 to 1985-86**

[a] The ABS uses estimated value of agricultural output (EVAO) to determine those establishments within the scope of the agricultural census. For the period 1960-61 to 1985-86, the EVAO cutoff was set at $2500.

Source: ABS (1996).

As the Wheatbelt Area Consultative Committee

Figure 3.14 **Interest costs as a proportion of total cash costs and the debt-to-capital ratio[a] for the average broadacre farm, 1983-84 to 1997-98**



[a] As at 30 June.

Source: ABARE (1999).

Inc. of Western Australia has said:

> The necessity for agriculture to be and remain internationally competitive has resulted in economies of scale such as increasing farm size, increasing mechanisation and reduction of the labour capital ratio. Inevitably these have had an impact on population. (sub. 41, p. 7)

This was echoed by the Eyre Regional Development Board:

> Over the past several decades, Eyre Peninsula has observed a contraction of the number of people employed in agriculture, as economic necessity has witnessed the trend towards larger and larger farms, combined with significant advances in farming methods and equipment technology. (sub. 20, p. 1)

Finally, there is a perception that farmers are facing increasingly high debt levels. In 1997-98, the average broadacre farm was estimated to have more than $150 000 of debt and to have paid over $12 000 in interest on that debt (ABARE 1999).

However, broadacre farmers have increased their debt-to-farm-capital ratio only slightly over the last 15 years. The ratio has actually fallen since 1993 (figure 3.14). Moreover, debt levels as a proportion of broadacre farm capital, at an average of around 12 per cent, are not high in comparison with other industries. For example, the average ratio in manufacturing is around 50 per cent (IC 1996d).

The impact that these borrowings have had on the cash flow of broadacre farms is illustrated by the ratio of the interest payments to total cash costs (also in figure 3.14). Since the early 1990s interest rates have decreased markedly, helping to reduce the burden of interest payments on farmers.

Mining

Mining is even more reliant on overseas demand for its output than is agriculture. In volume terms, the proportion of Australian mineral production which is exported ranges from around 70 to almost 100 per cent (table 3.3).

Table 3.3 **Export orientation of Australia's mining sectors, 1996-97**

Commodity[a]	*Export orientation*[b]
Crude oil and condensate	39.9
LPG	63.9
Uranium	95.1
Coal	70.2
Iron ore	89.6
Manganese ore	78.2
Alumina	83.1
Rutile	94.4
Zircon	92.9
Gold[c]	>100.0

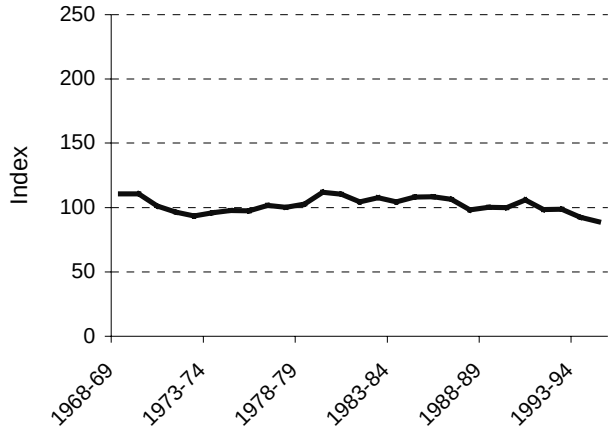
[a] Specified in volume terms: megalitre (ML), megatonne (Mt), kilotonne (kt), and tonne (t). [b] Volume of exports as a proportion of domestic production. [c] Reflects sale of stocks and re-exports.

Sources: PC estimates; ABARE (1998d).

Notwithstanding Australia's significance as a major producer of mining and energy-based products — it is among the world's top three producers of most major mineral commodities except black coal and nickel — Australian mining industries are still price takers on world markets and, consequently, are vulnerable to changes in world prices.

The world prices for several major mining commodities have declined over the last few decades. For example, the world coal price fell by 2–3 per cent a year between 1988 and 1998, and around 28 per cent over the last three years (Graham 1999); the world price of gold fell from around US$1200/oz in 1980 to US$260/oz in 1999; and the world price index for base metals fell from just under 300 in 1989-90 to 100 in 1997-98 (Davies et al. 1999).

Figure 3.15 **Mining industries' terms of trade[a], 1969-70 to 1994-95**



[a] Ratio of index of prices received by miners in Australian dollars to index of prices paid for material and service inputs by miners. Index 1989-90 = 100.

Source: PC estimates.

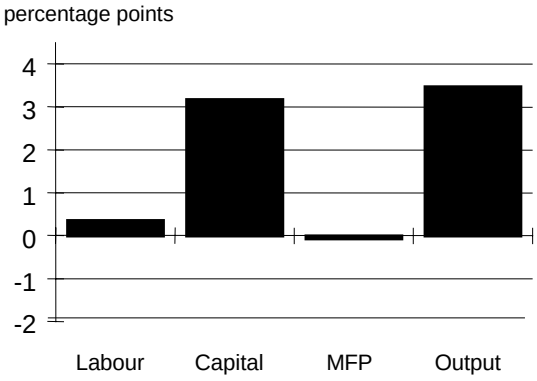
Despite these price reductions, the net price pressures faced by miners since the 1980s — as reflected in the terms of trade for mining — have been relatively flat since the early 1970s. The terms of trade for mining are shown in figure 3.15.

Mining output increased strongly between 1974-75 and 1995-96, by an average of almost 3.5 per cent a year (figure 3.16). In many cases, increased output followed new

technological developments which either reduced the ore grade at which mining is economically viable (such as gold in the early 1980s), or increased the effectiveness of exploration (such as oil and gas in the early 1990s).

These technological developments, as well as an increase in (State and Commonwealth) government-funded exploration expenditure, have led to an increase in investment which has been the major factor behind expanding mineral production (shown by the increase in capital in figure 3.16).

Figure 3.16 **Contributions to average annual output growth for mining[a], 1974-75 to 1995-96**

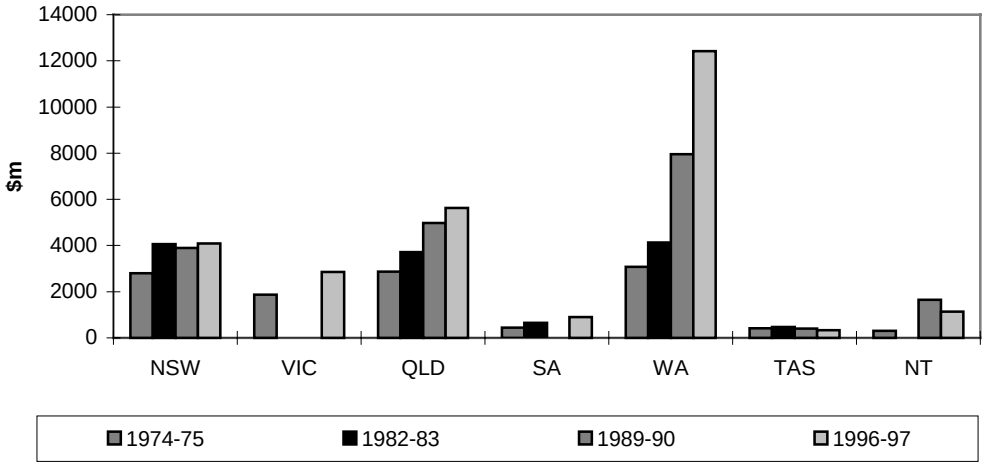


a Labour is measured by total hours worked. MFP is multi-factor productivity and is estimated by subtracting from output growth, the contribution due to labour and capital.

Source: PC estimates based on Gretton and Fisher (1997).

Thus, in mining, the increased output appears to have been driven by increased capital investment, whereas in agriculture it has been driven by increased productivity. It is possible, however, that the contribution of productivity growth to increased mining output over the period may have been underestimated because exploration, which has experienced productivity improvement, has been excluded.

Figure 3.17 **Mining output by State (all minerals)[a], 1974-75 to 1996-97**
Constant value (base year 1989-90)



a metallic minerals, coal, oil and gas, and construction minerals.

Source: ABS (*The Australian Mining Industry*, Cat. no. 8405.0, 8414.0).

Figure 3.17 shows changes in mining activity at the State and Territory level. The figure shows that while mining has become more important in New South Wales, Victoria, and particularly Queensland, Western Australia's dominance has also increased significantly over the last 20 years.

At the regional or local level, the discovery or depletion of a mineral resource can have significant employment ramifications. Since growth in aggregate mining output has been reasonably strong, the changing regional impacts of mining are likely to be driven less by terms of trade pressures than by local factors such as resource depletion and the changing nature of mining projects (box 3.5).

Box 3.5 **Local impacts of mining**

Since 1967, mining-related activity has been responsible for 25 new towns, 12 new ports, 20 airfields and 1900 kilometres of rail track (DPIE 1998c). In some instances, mining companies were compelled, as a condition of mining leases, to provide townships. In recent years, tighter environment protection standards, changing lifestyle preferences of mine workers and their families, and new cost-recovery imperatives for major public infrastructure assets, have all changed the nature of new large scale mining projects. In addition, the use of fly-in fly-out (FIFO) employment practices have become more commonplace for new mining projects. This reduces the local employment impacts of new mines, both because the resident population is reduced and because employment opportunities in other sectors (retail, schools, construction etc) are correspondingly curtailed.

The Regional Development Council of Western Australia said FIFO 'does not contribute to further regional development and employment' (sub. 33, p. 15). On the other hand, the development of some more marginal operations would not have proceeded had mining companies been required to provide permanent social infrastructure, as in the past.

FIFO is being driven by technological change which has made FIFO more cost effective and, most importantly, by the preferences of workers and their families, who often prefer to live in a provincial or major urban centre. The increased use of FIFO avoids the significant infrastructure costs of building single-industry mining towns (such as start-up and closure costs) and the adjustment problems that tend to emerge in towns with a narrow economic base. It also makes smaller projects more viable and allows mining companies to utilise the more diversified range of labour skills available to employers in larger centres.

Services

Rising incomes are driving the increased demand for services as a share of GDP. In addition, efficiency improvements in many service industries have contributed by making services cheaper. In many cases, these efficiency gains are the result of

structural reforms which have brought about productivity improvements — electricity and communications are examples. Other service industries have been at the heart of significant technological advances, as in the information and communications sectors. Advances in communications technology have also triggered significant changes in the way other services, such as banking, are delivered.

Table 3.4 shows the productivity changes for the major service industries between the mid-1980s and mid-1990s. The industries which achieved the biggest productivity improvements were EGW, finance and insurance, and communications.

Table 3.4 **Productivity growth in key service industries, 1985-86 to 1995-96**

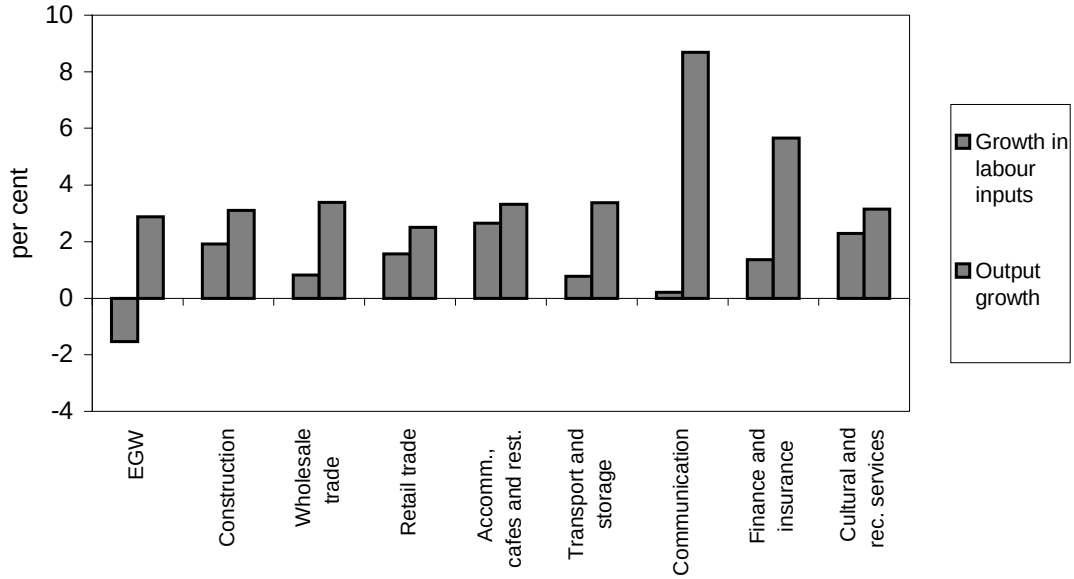
Industry sector	*MFP*[a]
Electricity gas and water	3.8
Construction	0.9
Wholesale trade	1.9
Retail trade	0.2
Accom., cafes and restaurants	-1.6
Transport and storage	0.9
Communication	2.1
Finance and insurance	2.5
Cultural & recreational services	-1.6

a Multi-factor productivity.

Source: Updated from Gretton and Fisher (1997).

Productivity growth can have regional employment and output effects. For example, the productivity growth in EGW since the mid-1980s (figure 3.18) was accompanied by a reduction in the size of the labour force, which fell by 2 per cent between 1984-85 and 1997-98. This has had an economic impact on regions in which EGW are important sources of employment; job losses associated with this productivity growth have been an

Figure 3.18 **Growth in output and labour inputs for key service industries, 1985-86 to 1997-98**



Source: PC estimates based on unpublished ABS data.

important source of structural change in areas such as Gippsland (Victoria) and Flinders Ranges/Pirie (South Australia).

In other service industries, productivity growth has been associated, at least at a national level, with job gains. Even where productivity growth is associated at the local level with short term job losses, lower prices can lead to cost reductions for other local industries. In the longer term, the improved productivity and profitability of such enterprises can play a significant role in revitalising regional economies by attracting new activities and industries.

Other factors driving the pattern of the economy

Trade and industry assistance

The level and pattern of government assistance provided to Australian industries has changed significantly over the last 25 years. Assistance levels provided to most agricultural and manufacturing industries have been reduced considerably, although the extent of the reductions in assistance has varied markedly. The clothing and footwear, textiles, transport equipment (including passenger motor vehicles), paper and printing, fabricated metal products, other machinery and equipment, tobacco growing, dairying, eggs, citrus, dried vine fruits and sugar industries have experienced the largest reductions. Many of these industries have a significant presence in country Australia.

Most agricultural industries, like most manufacturing industries, now have low levels of assistance. The overall level of assistance to agriculture is dominated by the high level of assistance provided to the dairy industry (PC 1998f). In the case of manufacturing, only the motor vehicle and textile, clothing and footwear industries still receive substantial assistance.

While the industries which have had their assistance reduced have faced adjustment pressures, assistance reductions directly benefit other industries, including many in country Australia. Examples include lower tariffs on plant and machinery and other inputs used by agriculture. The Commission has estimated that the tax effect of tariffs on inputs for the agriculture sector fell from $106 million to $57 million over the relatively short period from 1992-93 to 1996-97 (PC 1998f).

Reduced levels of assistance have contributed to higher overall economic growth (PC 1998d). Some manufacturing industries have become more export-oriented. In the agricultural sector, reductions in assistance have led to changes in the relative competitiveness of different industries, with some declining and others expanding.

Reduced assistance is thus a source of structural change in both country areas and cities.

Labour market flexibility

A feature of the Australian industrial relations system which has influenced structural change in country Australia has been the high degree of labour market rigidity. This has made it more difficult than it otherwise would have been to achieve productivity gains through greater workplace flexibility; such gains could have helped to cushion the impact of declining commodity prices and other sources of adjustment in country areas.

Over the past decade, however, the wage system has become increasingly flexible through the introduction of enterprise bargaining and a reduced role for centralised wage determination. The awards are now becoming a minimum standard, or 'floor', below which pay and conditions cannot fall because of the 'no disadvantage' clause.

This floor can still be an issue for those regions, or industries, which are in decline. As the Industry Commission said in an earlier inquiry into regional adjustment:

> … where award wages are binding there is little scope for regions facing difficulties to better position themselves to ride out a regional shock and to improve their competitiveness. (IC 1993b, p. 108)

However, this wage floor should become less relevant over time as improved workplace flexibility leads to better labour productivity and higher real wages, such that the floor is well below the 'market' level of wages. Continued reforms to labour markets will make it easier for rural and regional Australia to respond to economic shocks by changing work practices, thereby improving productivity and lowering costs. In the meantime, though, the capacity of firms in regionally depressed areas to attempt to re-establish some degree of competitiveness vis-à-vis other regions may remain constrained to some extent by the industrial relations system.

Regional infrastructure policies

Historically, a key feature of government regional development policies has been the subsidised provision of major infrastructure — such as highways, dams and irrigation networks — and the supply of associated services at prices considerably below the costs of their provision. Large infrastructure projects such as the Ord River and the Snowy River irrigation schemes, and the soldier settlement schemes, have driven the patterns of regional development in many areas.

From the 1980s through to the CoAG Agreement in 1994 and NCP in 1995, the provision of major infrastructure assets has been subject to considerable reforms requiring cost recovery through cost-reflective pricing and appropriate asset valuation, removal of barriers to entry, and competitive neutrality between public infrastructure providers and private sector competitors.

Thus far, reforms are most advanced in the gas and electricity sectors and, as already suggested, these have led to considerable structural change in parts of country Australia. Other sectors such as water and transport have yet to complete their reform programs. These issues, which are discussed in detail in part B of this report, could have significant implications for future structure and growth of some country areas.

Access to natural resources

Native forests have long provided an important source of employment for rural communities. For example, in the Eden forest region, 12 per cent of employed people are employed in sawmilling and woodchipping (DPIE 1998).

The forestry industries have experienced considerable structural change as a result of changes in the availability of logs and pressure to increase their competitiveness. For example, in Western Australia:

> The starting point was … 1960. At this time, significant modernisation of the timber industry began and the issue of forest conservation for values other than timber began to be addressed. … Many major mill closures occurred in the 1970s and 1980s. However, adjustments are still occurring with older, less efficient mills closing … Production facilities are becoming larger, more efficient and more centralised. Processing and value adding of timber products occurs at large regional centres and logs are transported over larger distances. (WA 1998, p. 104)

More recently, some potentially significant changes in the forestry industry's ability to gain access to native forests may result from the Regional Forest Agreements (RFAs) currently being implemented. RFAs have been, or are in the process of being, put in place for each major native forest area in New South Wales, Victoria, Tasmania, Western Australia and Queensland. Additional reductions in wood availability resulting from the RFAs will increase the pressures for structural change and could have significant economic and social consequences for some forest-based communities. In Tasmania, for example, the increase in the area of forest reserved for conservation was estimated to lead to a reduction in output from sawn timber and woodchip mills of 5 per cent and 6 per cent, respectively, in 1998, rising to 6.5 per cent for sawmills and 13 per cent for woodchip mills by 2020 (Dann et al. 1997, table 17).

The *mining industry's* access to public land for mineral exploration and mining has been made less certain as a result of legislative and judicial decisions relating to native title. Between the passage of the *Native Title Act* in 1993, and June 1998, native title claims were lodged over 54 per cent of Australia's land area, and 82 per cent of Western Australia (these over-estimate the actual area under claim because the boundaries include freehold tenures on which native title has been extinguished, and pastoral leasehold which can co-exist with native title). By August 1999 the number of outstanding claims for native title totalled over 700 (information provided by the National Native Title Tribunal).

Evidence is emerging that native title may be having an impact on mineral exploration in Australia, in particular by redirecting exploration activity away from so called 'greenfields' exploration and towards exploration on existing tenements and licences over known deposits (so called 'brownfields' exploration) which are not subject to native title negotiations. Australian companies are also increasingly exploring offshore (IC 1996b; Davies et al. 1999). These trends have potential long-term implications for mineral production in Australia. This is particularly true for gold, oil and gas, for which known reserves are relatively low, and hence which tend to have active exploration programs. For example, the mining industry has claimed that, in some cases, the costs of negotiating access to land with native title claimants can be as high as 20 per cent of explorations budgets (Wells 1998). To the extent that resolution of native title issues leads to a slowing in the discovery and development of new deposits, these long-term implications may become more apparent once world prices for mineral commodities have recovered and exploration would normally start to rise again.

Resolution of native title issues may also have implications for agricultural producers where pastoral leaseholders are required to negotiate changes in activity with native title claimants — possibly affecting their ability to change activity in response to changing market conditions. For communities in country Australia for which forestry, mining and pastoral industries are significant sources of local employment or output, resource access issues relating to RFAs and native title may limit future adjustment and development options.

Environment protection

There has been growing community concern to protect the environment and, in some instances, to develop remedial programs to repair environmental damage. For example, by 1993, some 7 per cent of Australia's land area had been classified as *nature conservation reserves* (national parks). Almost 60 per cent of the country has been assessed as having a wilderness quality value of 12 (out of a maximum value of 20), while 44 per cent has a wilderness quality value of 15 (East et al. 1997).

While these wilderness indexes are not yet used in land management decisions, they introduce a degree of uncertainty about the terms on which such lands can be developed for mining or forestry activities. At the same time, such areas may be used increasingly for services (eg eco-tourism). Concern about river health as a result of increasing diversions of water for irrigation led the Council of Australian Governments to require that *environmental flows*, or water entitlements for the environment, be considered as part of the water industry reform process. This reduces the volume of water available to agriculture from some of Australia's major inland waterways. For example, it has been estimated that restoring a 25 per cent environmental flow to the Snowy River would reduce water available to irrigators by almost 12 per cent (Scoccimarro et al. 1997). If such increased environmental flows are required, they could add to the adjustment pressures facing irrigators as a result of water pricing reforms, although they also present opportunities for switching to higher value crops and provide farmers with an additional source of revenue from the sale of water entitlements (chapter 5).

Under the December 1997 Kyoto Protocol to the United Nations Framework Convention on Climate Change, developed countries agreed, by 2008–12, to reduce their emissions of *greenhouse gases* by at least 5 per cent from 1990 levels. Australia's agreed target reduction is 8 per cent (Polidano et al. 1999). Reductions in emissions from greenhouse gas sources, and removal of carbon dioxide by emissions sinks such as forestry, will contribute to meeting this target.

The choice of mechanisms to be used to achieve the targets (transferable permits, taxes, etc) may have significant implications for the final economic costs of reducing greenhouse gas emissions. Estimates to date suggest that these costs will be most significant for energy-intensive sectors in Australia, leading to possible substantial reductions in output for the coal, iron and steel, non-ferrous metals, livestock, and meat and meat products industries (Polidano et. al. 1999). This could give rise to considerable structural change in country Australia.

FINDING 3.4

Broad long-term economic forces which are beyond the control or influence of governments have been key drivers of the economic and social changes of particular relevance to country Australia. These include: changing technology and increasing productivity; rising incomes and changing lifestyles; and declining world agricultural and mineral commodity prices.

It is against this backdrop of significant ongoing structural change that the impacts of NCP on country Australia are assessed.