

## CHAPTER 6

# The big picture: Australia 1911–2006

### Key points

- Australia has experienced large upheavals over the past century, including two world wars and the Great Depression.
- Industry sectors have experienced substantial structural changes from the long-term decline in the importance of agricultural employment; the boom and bust cycles of mining; the rise, then fall of manufacturing employment share; and the spectacular post-war increase in the proportion of service industry employment.
- Technological change has impacted on almost all areas of life, including industry, communications, consumer goods and transport.
- Transport and communications have revolutionised how people access markets.
- The social profile of Australians has significantly changed.
- A feature of the twentieth century has been the increasing wealth of Australians overall, especially through the housing market.
- Government policies have played an important role in many of the changes occurring through the century.

### Introduction

The twentieth century saw some of the most rapid development of technology and lifestyle in human history. It also saw some of the most momentous events—global wars, and economic depressions and booms. It would seem inevitable that these would all impact heavily on settlement patterns. This chapter considers how.

Chapters 4 and 5 examined the changes in settlement patterns from 1911 to 2006. Over this time, Australia has undergone some fundamental changes relating to technological advancement, social change, world wars, government policies and a more competitive and globalised economy.

The purpose of this chapter is to discuss some of these factors which may have affected town development and settlement patterns. The approach is broad and overarching, in order to highlight some of the substantial changes that have occurred in the twentieth century with a focus on their spatial impacts. The chapter divides into eight sections to capture some of the potential influences on the settlement pattern, which include:

1. International events
2. Australia's economic performance
3. Industry structural change
4. Technological change
5. Transport
6. Infrastructure and networks
7. Social changes
8. Government policies

## 1. International events

Some of the most dramatic events for the country's history occurred in the first half of the twentieth century, changing the demographics, the economy and social outlooks of Australians. Firstly, and most importantly, in 1901, the colonies were joined in Federation to form a new nation.

In this first decade the new nation experienced a relative prosperous and stable period. This changed with the outbreak of the First World War in 1914. The war had a huge impact on the fledgling nation and its people. For instance, 417 000 men enlisted, representing almost 40 per cent of 18 to 40 year old males. Of those, 60 000 were killed (1.4 per cent of the population), and a further 156 000 were wounded (AWM n.d.p.(a)). In fact, the losses of men as a percentage of the population were comparable with those of the major European combatants. At home, the war saw major interventions in the economy with government acquisition of the entire wool clip and the formation of wheat pools (see Scott 1941).

The next major international impact was the Great Depression beginning in 1929. It was a time of extreme hardship with very high levels of unemployment (up to 32 per cent at times in 1932) that extended from the late 1920s until the Second World War. The extreme levels of unemployment in the early 1930s are evident even in the annual estimates shown in Figure 6.1. This period of history was a time of extreme social dislocation and desperation for many Australian families. A common impression of the period was of the itinerant worker forced 'onto the track' in search of work.

In 1939, Australia entered the Second World War, with almost a million people joining the armed services (AWM n.d.p.(b)). It was the first time that Australia itself was threatened and directly attacked. As well as the direct impact of the war on the economy, it produced a lingering sense of vulnerability that greatly influenced post-war policy, directly contributing to a migration boom.

As Chapter 4 revealed, settlement change in the period between 1911 and 1961 was modest compared with the greater change occurring between 1961 and 2006. The wars and the depression do not appear to have been engines of change of settlement patterns in themselves, but rather may have constrained that change. The increased production during the Second World War was directed towards the war efforts, not towards the domestic economy. The lack of growth during the depression, and the government response, meant that there was little capacity for building (physical and economic). Population growth rates were also comparatively more modest during these times (see Table 6.1).

The wars had some indirect effects on other things such as stimulating manufacturing in particular areas and changing immigration policy, which will be discussed later in this chapter. However, in terms of change to overall settlement patterns, there was very little change within the first half of the century when these significant events were going on. Change was small relative to the later change which occurred in more prosperous times.

## 2. Australia's economic performance

Australia has experienced many boom and bust cycles over its history, but Australians have had a substantial increase in their standard of living (see Table 6.1 reproduced from McLean 2004). Mining booms, World Wars and a Great Depression have been some of the influences to the population and the National Gross Domestic Product (GDP) growth rates and their association.

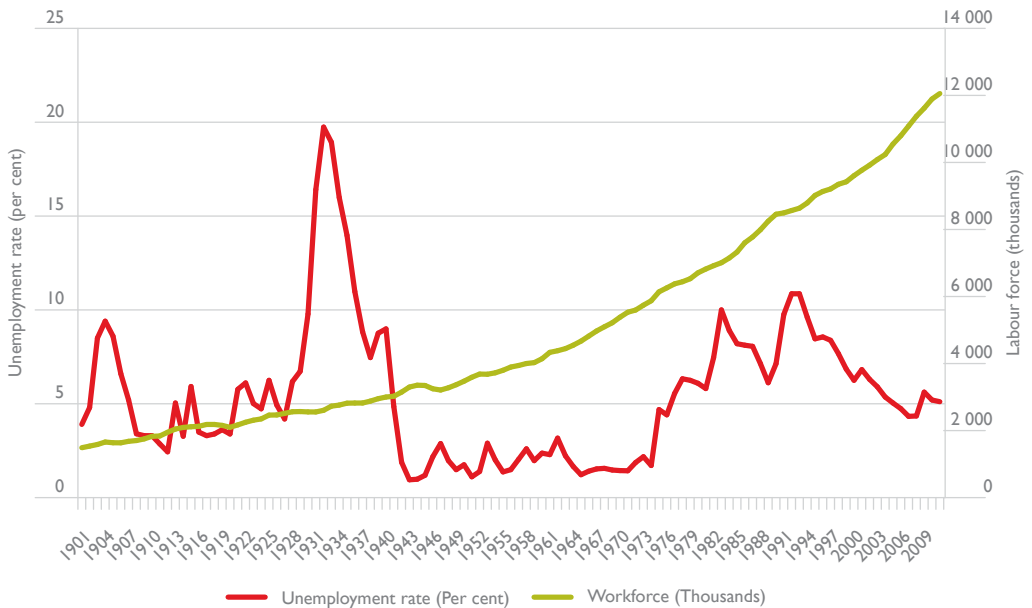
Table 6.1 shows an association between low population and low (or negative) real GDP growth with the First World War and the Great Depression of the 1930s, in contrast with the rising real GDP during the Second World War. When considering the difference, it should be noted that the First World War followed ten years of high growth whereas the Second World War followed a long period of low growth through the Depression. Unemployment going into the First World War was low (3.3 per cent in 1914), whereas in 1939 it was 8.8 per cent. Therefore the capacity for growth in the First World War was constrained by full employment and then the workforce was further reduced by the large number of recruits. These changes in the overall size of the workforce and unemployment rates can be seen in Figure 6.1, from 1901 to 2011.

At least initially, the increasing labour demands for the war effort during the Second World War could be met from the unemployment pool, although this was quickly absorbed. The increasingly tight labour conditions in both world wars led to widespread recruitment of women into the workforce and accelerated their acceptance in the labour market.

**Table 6.1** Australian economic growth 1828–2000 (average annual percentage growth rates between end years)

Years	Real GDP (per cent)	Population (per cent)	Real GDP per capita (per cent)
1828–1840	13.2	10.4	2.6
1840–1850	8.7	7.8	0.8
1850–1860	12.8	10.9	1.8
1861–1889	4.8	3.5	1.3
1889–1905	0.8	1.7	–0.8
1905–1914	5.2	2.3	2.9
1914–1920	–1.6	1.3	–2.6
1920–1930	3.2	1.9	1.1
1930–1939	1.6	0.8	0.6
1939–1946	3.4	1.0	2.4
1946–1974	4.8	2.2	2.5
1974–2000	3.2	1.3	1.9
2000–2012	3.2	1.6	1.6

Source: McLean (2004) and RBA (2012).

**Figure 6.1** Australian labour force and unemployment rate from 1901 to 2011

Source: BITRE based on data from Withers, Endres and Perry (1985); ABS (1979 and 2012a).

The period following the Second World War until 1974 has been described as 'the long boom'. It was a period of high growth in both population and GDP, extremely low unemployment and a rapidly expanding labour force. It was a time of reconstruction and growth and included the wheat and wool price booms of the early 1950s and extended through until the oil price shocks and the rise of 'stagflation' in the early 1970s. Government policy through this time included population growth through high immigration, encouraging manufacturing through tariff protection and direct support for rural industry. It was a period of building and change.

Then in a single year, 1974, there was a fundamental change of fortune. Unemployment rose from around 2 per cent to almost 5 per cent at year's end. Prices rose 16 per cent but were outstripped by wages that rose by 28 per cent (The Age 2005). The current account slid into deficit, profits collapsed, industrial disputes escalated and the housing boom turned to bust (The Age 2005). GDP and GDP per capita fell through the year (ABS 2012a). The long period of low inflation and low unemployment growth was at an end.

The result was a period of 'economic malaise', lasting for the next two decades (Productivity Commission 2005a). It was a period categorised by slow output growth compared with the immediate post-war period, continuing inflation, rising unemployment and relatively slow productivity gains (Productivity Commission 2005a).

These conditions were the spur for a process of reform to open the Australian economy and promote the country's global competitiveness. Reforms ranged from financial and trade liberalisation such as floating the exchange rate and reducing tariffs, restructuring the labour market to link wages to productivity and enhanced flexibility, and reforming the taxation system. To achieve this, governments embarked on a program of micro-economic reform across the economy. The result was a sustained period of strong economic growth. The OECD (2006) describes the performance as:

*'...(Australia) "has also made its own luck" through a series of structural reforms and the introduction of a robust macroeconomic framework which have bolstered resilience. This is illustrated by its macroeconomic stability in the face of a string of recent shocks, in stark contrast to the macroeconomic chaos which followed the commodities boom of the early 1970s.'*

Between 1974 and 2000, real GDP growth averaged 3.2 per cent per annum. This was channelled into increased wealth that allowed change. This is reflected in the fact that most change in the settlement pattern occurred in the second half of the century (see Chapter 4).

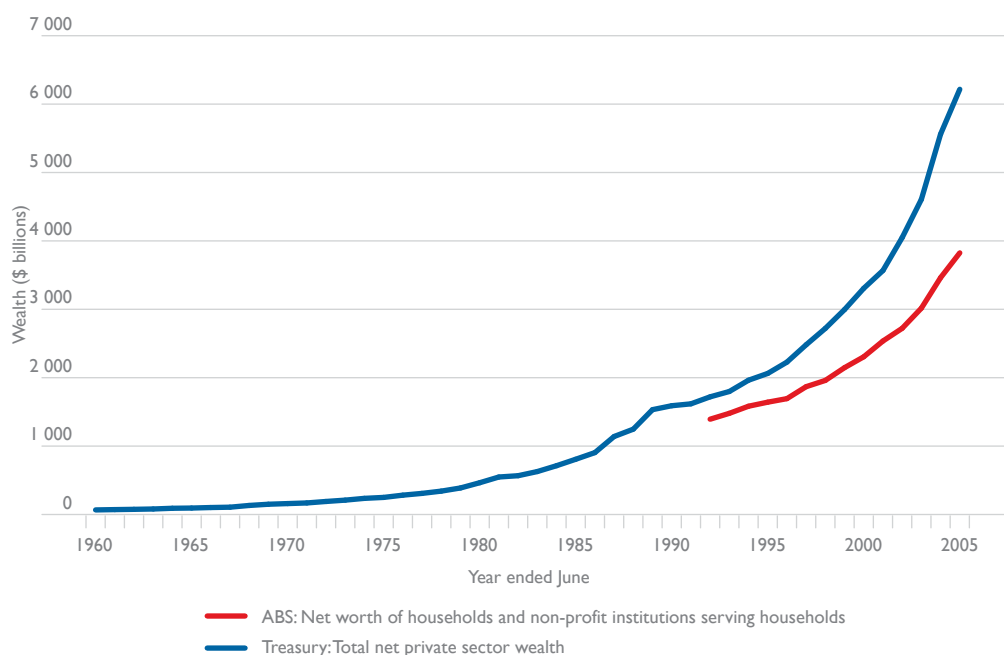
This overall pattern is confirmed by Coombs and Roberts (2007), who reported on total fixed capital investment as a proportion of GDP from Federation to 2006. They indicated that '[i]n the years from Federation to World War II, public investment in infrastructure increased to complement industrial development, the spread of the use of the motor vehicle and utility networks for sewerage and electricity', but fell in both World Wars 'as resources were switched to the war efforts'. For three decades after the Second World War, public sector investment was strong. Immediately after the war, it rose in response to the 'backlog' of public works projects on hold from the recession and wartime. At the same time as Australia was experiencing strong population growth, this investment 'underpinned the rapid industrial expansion and urban development' after the war (Coombs and Roberts 2007).

The period from 2000 to 2006 saw overall growth but with an increasing shift towards the resource sector based on demand from emerging Asian economies. It also saw the development of the 'two speed' or 'patchwork' economy as growth levels have varied sharply between regions.

## Changes in wealth

The increase in the standard of living of Australians is also reflected by their increase in wealth. Figure 6.2 presents the two main Australian sources of time-series data on wealth from the Australian Bureau of Statistics (ABS) and the Department of Treasury—both of which extend beyond the household sector and are in nominal terms. Growth in nominal wealth has been quite rapid, averaging 10.6 per cent per annum between June 1960 and June 2005<sup>26</sup>.

<sup>26</sup> As a point of comparison, Australia's GDP in nominal prices grew at an average annual rate of 9.3 per cent over the same period (ABS 2012a).

**Figure 6.2** Time series measures of wealth, Australia, 1960–2005

Source: BITRE (2009b), citing The Treasury (2006) and ABS Cat. 5204.0 (2004–05).

Wealth contributes to economic well-being by generating increased consumption opportunities, income flows and economic security. It provides a pool of savings available to capitalise new and existing businesses and raise economic activity. As a result, people have more options, flexibility and confidence to make personal and economic choices. Household wealth can also provide a buffer against falls in income, both for individuals and local economies, underpin investor confidence as well as being a source of capital for businesses (BITRE 2009b).

This has meant that individuals' capacity to make changes to their lifestyle has improved. This has come at the same time as other improvements: for example, bigger and better housing and the rise of motor transport. Not only did cars become available, but because people had the means to buy them, the use of personal transport became almost universal.

The increasing wealth of households has substantially occurred through the property market, essentially the family home. In fact, for most Australian households, the family home is their main source of wealth, with net owner-occupied property assets contributing 45 per cent of net household wealth (BITRE 2009b). Moreover, the family home is a major source of raising household wealth because of increasing property capital values over the past decades. This is further compounded by indirect housing assistance for owner-occupiers through capital gains tax exemptions, which places even more emphasis on the family home as a source of wealth.

This relationship between functional and financial benefits of housing has meant that housing plays an increasingly important financial role (Tually et al. 2010). A major store of wealth in bricks and mortar and from raising the capital value of the asset has made the decision to invest critical for many households. Many factors contribute to the home location decision such as access to services, access to quality education institutions, community connections, environmental amenities, employment opportunities and lifestyle pursuits.

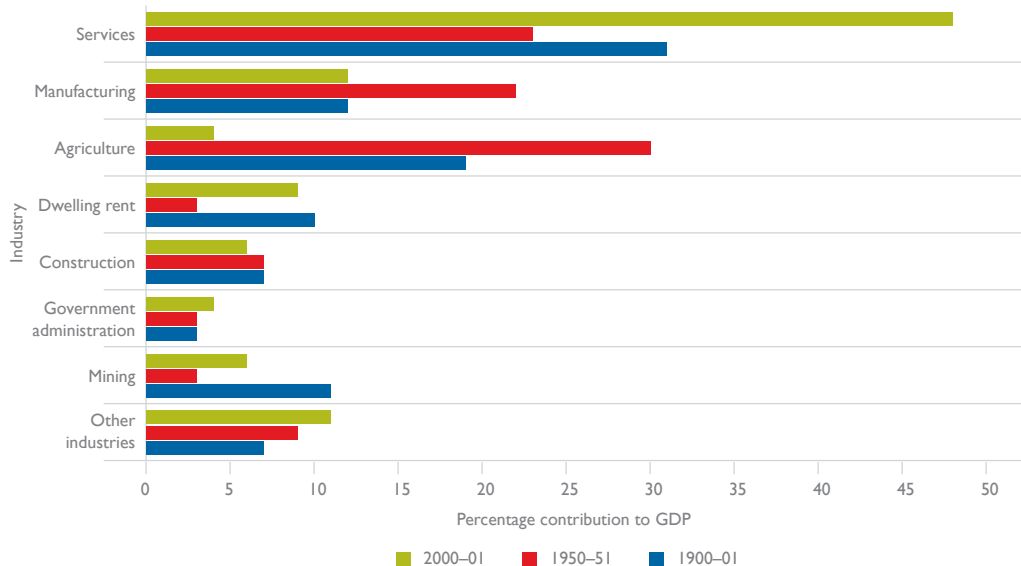
As a result it is increasingly important to consider the expected growth potential of a location when considering investing in or living in a regional town. This is significant because there is a capacity for families to become ‘entrapped’ in low value housing in small towns (Tually et al. 2010). The Rural Centres Housing study (Econsult 1989) noted that ‘households in declining small country towns may find themselves tied to homes they own that have little or no value within the market’ (cited in Tually et al. 2010, p.34).

### 3. Industry structural change

Australia has followed the broad development pattern of all industrialised countries, shifting emphasis from agriculture to manufacturing and then to services. This transition was highlighted by the Productivity Commission (1999), which found that while output in agriculture, mining and manufacturing grew in absolute terms since the 1970s, ‘their shares of gross domestic product have declined, while that of the services sector has risen’ (Productivity Commission 1999, p.xliii).

In 2005, the ABS’s annual Year Book included a feature article on 100 years of change in Australian industry. Included was Figure 6.3 presenting the GDP share of various industries over three snapshot periods (1900–01, 1950–51 and 2000–01). This figure reflects some of the major trends that have occurred in the Australian economy over the past century. Of particular note is the high proportions coming from agriculture and manufacturing in 1950–51, the dominance of services in 1900–01 and 2000–01 and the relatively consistent contributions of the construction and government administration sectors. Agriculture’s high share in 1950–51 of just over 30 per cent was inflated in the short term by the boom times and high prices due to the Korean War (ABS 2005).

**Figure 6.3** Share of GDP by industry, 1900–01, 1950–51 and 2000–01

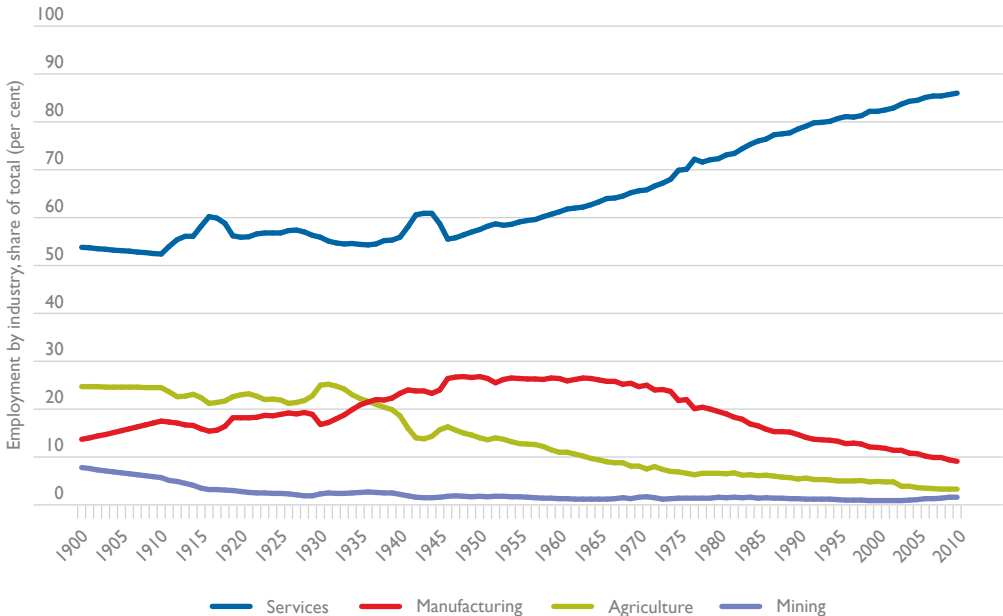


Source: ABS (2005).



As important as GDP share is as an economic indicator, the number of people employed is most likely to be important to settlement patterns. Figure 6.4 provides a broad assessment of industry type by employment numbers from 1900 to 2010.

**Figure 6.4** Employment by industry, share of total, 1900 to 2010



Note: Data interpolated between 1900 and 1910.

Source: Reproduced from Connolly and Lewis (2010), citing ABS, RBA and Withers, Endres and Perry (1985).

The key issues flowing from this graph are: the long-term decline in the importance of agricultural employment; the rise and fall of manufacturing's employment share; the spectacular post-war increase in service industries; and the decline in the (already small) share of mining employment in the early part of the century to a relatively unchanging share in the second half, despite the boom and bust cycles of mining.

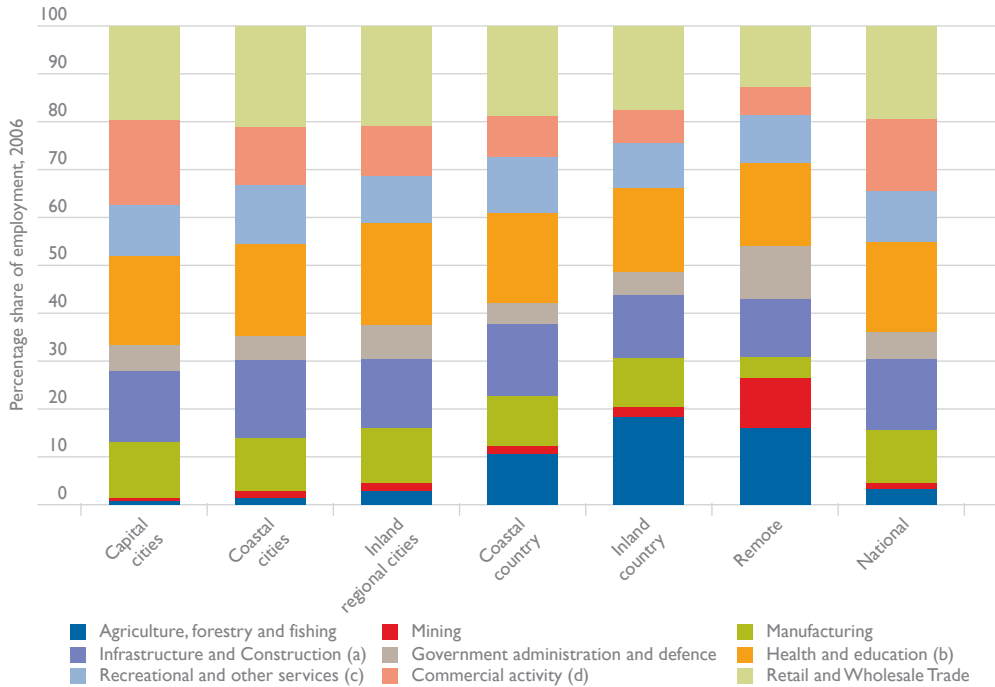
These changes also have spatial consequences. Growing industries bring economic well-being for residents by providing economic opportunities, while simultaneously attracting new migrants and investors. Industries in decline, however, hinder development, even leading to the loss of the town itself.

To illustrate the inherent geographical differences, Figure 6.5 presents the proportion of sector employment by regional type in 2006. Industry is shown to be more diverse in major cities, while regional areas (which include towns) have an industry structure more closely tied to their remoteness. For example:

- Agriculture is an important industry for remote, inland and coastal country areas. Inland country has the highest share at over 18 per cent. By contrast, capital cities have less than 1 per cent.
- The proportion of mining workers in remote locations is significantly higher than other regional classifications.

- The government administration & defence share of employment is similar for all regional classifications except for a high share in remote areas<sup>27</sup>.
- Capital cities have a large commercial activity sector, representing an 18 per cent employment share, in contrast with its declining share by increasing remoteness.

**Figure 6.5 Industry mix at regional classification scale, 2006**



Notes: (a) Infrastructure and Construction includes Electricity, gas & water supply, Communication services, Transport & storage and Construction.  
 (b) Health & education include Health & community services and Education.  
 (c) Recreational & other services include Accommodation, cafes & restaurants, Cultural & recreation services, and Personal & other services.  
 (d) Commercial activity includes Finance & Insurance and Property & business services.

Source: BITRE (2009a).

Towns best able to handle change or shocks to local industries are those with a high degree of diversification. These tend to be major cities which on average, have more stable economic outcomes (BITRE 2003a). Examining structural change spatially<sup>28</sup>, between 1981 and 1996, the Productivity Commission (1998) also found that service-based regions were expanding their employment base, while agriculturally-dependent regions tended to have declining employment. This outcome is also reflected in the fact that more structural change occurred in non-metropolitan regions (Productivity Commission 1998).

A feature of industry development however, has been the increasing degree of specialisation at the regional city scale. Beer and Clower's (2009) analysis of centres of over 10 000 persons

<sup>27</sup> A contributor to this category's high share in remote areas is due to people participating in the Community Development Employment Programme (CDEP) being classified as Government administration. CDEP was a program primarily for Indigenous persons to pool unemployment benefits into wages for choosing to participate in various community development programs.

<sup>28</sup> The Productivity Commission (1998) investigated 113 metropolitan and non-metropolitan regions across Australia.

found that regional cities have become more specialised on average. In fact, this increasing degree of specialisation has been associated with greater success in their population and labour force growth. An important aspect to consider in developing a specialised industry structure is the direction taken. As Beer and Clower (2009) found a town transitioning towards greater specialisation in a declining industry is liable to experience poorer economic growth or further decline. Their cluster analysis highlights that cities with strong economic growth had industry structures based on specialist tourism or recreation services or provided general services to their region in a service centre role (Beer and Clower 2009). Conversely, declines occurred in manufacturing and specialised mining cities<sup>29</sup>. They go on to state that 'this outcome should remind us that economic development is a process and that drivers with the global economy are likely to guide regional cities into more specialised roles' (Beer and Clower 2009, p.385).

### *The decline of agricultural employment*

As Figure 6.3 illustrated, in 1900–01, agriculture represented almost 20 per cent of Australia's GDP. By 2000, agriculture's contribution to GDP declined to only 4 per cent, equal lowest with government administration. This fall reflects an industry under continuous pressure to restructure. This is also indicated in Figure 6.4, as this suggests that the post-war decline in agricultural employment has been persistent rather than in response to specific events.

The real impact for small towns has been total agricultural employment falling from 474 000 in 1911 to 293 000 by 2006, even with significant overall population and employment growth. Farmers were continuously implored to 'get big or get out' (ABARE 2002, p.1). Droughts and commodity prices often provided the obvious stimulus for change, but the ongoing mechanisation and other technological improvements allowed savings in labour costs to raise productivity, and ultimately allowed the industry to remain competitive.

This decline in agricultural labour has been disproportionately borne by regional towns. To illustrate, in 2006, agriculture accounted for just 3 per cent of the nation's employment compared to 24.1 per cent in 1911. Yet spatially, agriculture in 2006 was the single largest industry employer in 38 per cent of Australia's Local Government Areas (LGAs), especially in rural and regional Australia. This proportion is nearly 50 per cent if we include regions where agriculture is the 2nd or 3rd largest source of employment for LGAs. Unfortunately, agriculture was also the major contributor to employment losses for 60 per cent of these regions (BITRE 2009a).

There is however a degree of variation in agriculture's impact on local towns and their growth prospects. For instance, while wheat-sheep belt towns were in decline, other towns positioned along the coast transferred their economic focus into other activities such as tourism, or becoming lifestyle locations. To capture some of this complexity, Map 6.1 provides a spatial illustration of some of the dynamics occurring. The variables presented include:

- Average annual population growth by Urban Centres and Localities (UCL) from 1961 to 2006, with higher growth areas in green.
- The proportion of persons that work in agriculture in 2006 by Statistical Local Areas (SLA). Higher proportions are represented by darker shades of blue.

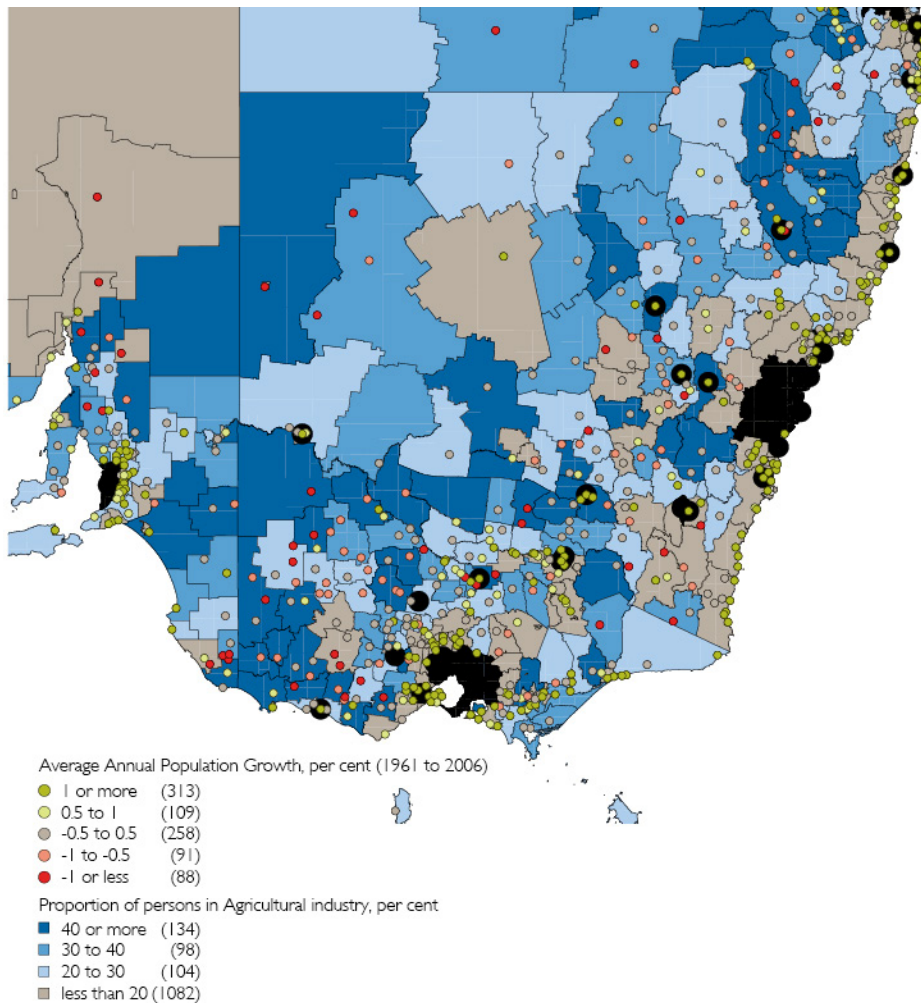
<sup>29</sup> It is important to note that this study excludes the substantial economic growth in the mining sector in Australia after 2004.

- Regional cities with greater than 25 000 persons and capital cities are shaded by large black circles and the shape of the Statistical Division (SD) for capital cities.

Map 6.1 shows a number of key features:

- The connection between population declines and high local agricultural employment.
- Strong population growth in coastal locations with limited agricultural employment.
- Large regional cities are associated with growth in surrounding towns regardless of whether there is a high proportion of agricultural employment.

**Map 6.1** Agricultural share of employment (2006) with UCL population average annual growth from 1961 to 2006



Source: BITRE (2009a) and BITRE analysis of Censuses 1961 and 2006.

Areas with strong population growth and agricultural activities have tended to be attractive 'amenity landscape(s)' (Barr 2002, p.41). As Budge (2005) points out, there are some rural locations that surround cities which have experienced high levels of growth in recent years, commonly referred to as peri-urban areas. In Victoria, for example, these areas typically have

very high natural and built amenity, and are associated with having significant agricultural activity. For example, the Port Phillip region close to Melbourne 'is the second highest producer of agricultural products in Victoria, and its agricultural output per hectare is four times the state average' (Land & Water Australia 2008, p.3).

Hence, increasingly, agricultural activities—particularly in the wine industry—which are located in 'amenity landscapes' on the periphery of metropolitan and regional cities are sources of growth rather than decline. Thus a location's attractiveness and proximity to a city combined with the agricultural activities are generating growth for these locations. This point is examined further in Chapter 11.

### *Sporadic impact of mining booms*

In Chapter 3, we discussed the impact of gold rushes in the 1850s as an important contributor to the distribution and size of settlements, particularly in Victoria. However, since then, Australia has experienced a series of mining booms, each changing the landscape of economic activity radically in the short term and leaving a long-term legacy. Battellino (2010) identifies several major booms after the 1850s gold rushes. These include:

- the late nineteenth century mineral boom—the discovery of new gold and metal mines, particularly in Western Australia, Queensland and western New South Wales.
- the 1960s/early 1970s mineral energy boom—broadly based and capital intensive with increases in demand for coal and iron ore and development of oil and bauxite.
- the late 1970s/early 1980s energy boom—driven by the energy sector; this boom was short lived.
- the 2000s boom, which was both a mineral and energy boom—broadly based with expansion in coal, ore and gas industries, particularly driven by demand in emerging economies such as China.

These mining booms have been powerful forces shaping the Australian economy and its settlement patterns. What is notable about many mining towns is that they came into existence solely because of the discovery of natural resources. These towns were not created on the basis of other factors such as networks, proximity to other towns, fertility of land for growing or amenity. Rather, mining locations that provided these other factors were to become major centres for regional Australia, such as Bendigo, Ballarat, Newcastle, Maitland and Cairns.

For example, a study by Maxwell (2004, p.22) found that for Western Australia, the mining booms provided the foundation for a more broadly-based economy, as well as 'establishing a viable sub-state regional and rural community' that underpins Perth. As a consequence, large discoveries that have provided time to establish more permanent settlements with substantial infrastructure investment have been able to foster greater industry diversity, once the resources base declines or disappears. As Freestone (2010, p.119) reports, '[t]he discovery of gold in New South Wales, Victoria and Western Australia profoundly impacted on the spread of settlement and the formation of towns in regional Australia'.

In more recent times, Freestone (2010, p.130) considered the establishment of new mining towns in the 1950s to the 1970s to be the 'principal offsetting force' against the growing dominance of the major cities (save for the growth of Canberra). The ABS estimates that mining

has contributed to building 25 new towns since 1967 (ABS 2001), such as Dysart, Glenden, Teri and Moranbah in Queensland, Roxby Downs in South Australia, and Pannawonica, Newman and Leinster in Western Australia.

In contrast, the development of mining towns towards regional centres in more remote locations has been less successful. Maxwell (2004) also found that for Western Australian mining towns, the long-term impact can be terminal, with only 40 of the 172 mining towns established in the preceding 110 years still existing in 1996. Of these, only three had a population of more than 10 000 people. In fact, Maxwell suggested that many of the remaining small towns will also disappear—signalling the high degree of risk associated with mining, as the town's economic base waxes and wanes.

A recent example of this type of instability has occurred in the Queensland town of Dysart. Established to provide accommodation for workers for nearby mines, along with servicing the surrounding cattle and grain properties (CQU 2003), its economic base was eroded with the closure of the Norwich Park mine in 2012. This severely impacted on the Dysart community, with The Rockhampton Morning Bulletin (2012) article pointing out that from 'a Dysart source...about 20 families a week were leaving town'.

### The rise of fly-in/fly-out and drive-in/drive-out

Substantial improvements in mining productivity have reduced the demand for labour, similar to the situation in agriculture. A KPMG (1998) study found that significant population loss was strongly associated with changes in mining practices, illustrated by a 44 per cent decline in population in western Tasmania (cited in Kenyon and Black 2001).

The reduced demand for labour is also contributing to changes in labour market access. The increasing use of fly-in/fly-out and drive-in/drive-out by workers is having important flow on effects for towns, further contributing to population losses. This arrangement entails workers living elsewhere and then travelling to the mine site by plane or car, to stay in pre-fabricated single person quarters while they are on shift. Workers might alternate between 2 or 3 weeks on shift at the mine, and 1 or 2 weeks off.

Fly-in/fly-out (and drive-in/drive-out) has been driven by a number of factors. As highlighted earlier, one factor is the volatility of the resources sector, along with reasons such as:

- the cost of building and maintaining remote towns
- the cost and difficulty of closing towns once the resources have been depleted
- technological advancements that have shortened a mine life because minerals are extracted more rapidly, making it more costly and impractical to build infrastructure for communities (Haslam McKenzie 2008).

To consider the use of fly-in/fly-out (and drive-in/drive-out) the ABS (2008b) found that in Perth only 4 per cent of workers were directly employed in the mining industry, but of these employees 72 per cent worked outside of Perth. This is supported by a recent BITRE (2010a) study on Perth's working zone<sup>30</sup> residents, which found that the five largest commuting destinations for Perth residents outside the Perth working zone were all mining regions operating on a fly-in/fly-out or drive-in/drive-out basis such as Laverton, Leonora & Menzies

<sup>30</sup> Working zones are based on commuting patterns of workers to estimate the functional area of a city or town.

(2257 commuters), East Pilbara (1756 commuters), Ashburton (1525 commuters), Roebourne (1036 commuters) and Wiluna (918 commuters) (BITRE 2010a).

To understand the difference between non-resident workers and residents in mining locations, Queensland Treasury and Trade (2012) produces full-time equivalent (FTE) population estimates for key localities (see Table 6.2). To illustrate, the town of Middlemount has been estimated to have a greater number of non-residents workers (2110 workers) than residents (1960 persons). This population difference impacts on towns in various ways such as the ability of local governments to generate rates revenues and provide services.

**Table 6.2** FTE population of selected mining communities, June 2012

Town	Estimated resident population	Number of non-resident workers	FTE population estimate	Non-resident workers as per cent of FTE
Dysart	3 280	2 365	5 645	42
Glenden	1 340	535	1 875	29
Middlemount	1 960	2 110	4 070	52
Moranbah	8 990	4 585	13 575	34
Tieri	1 520	735	2 255	33

Source: Adapted from Queensland Treasury and Trade (2012).

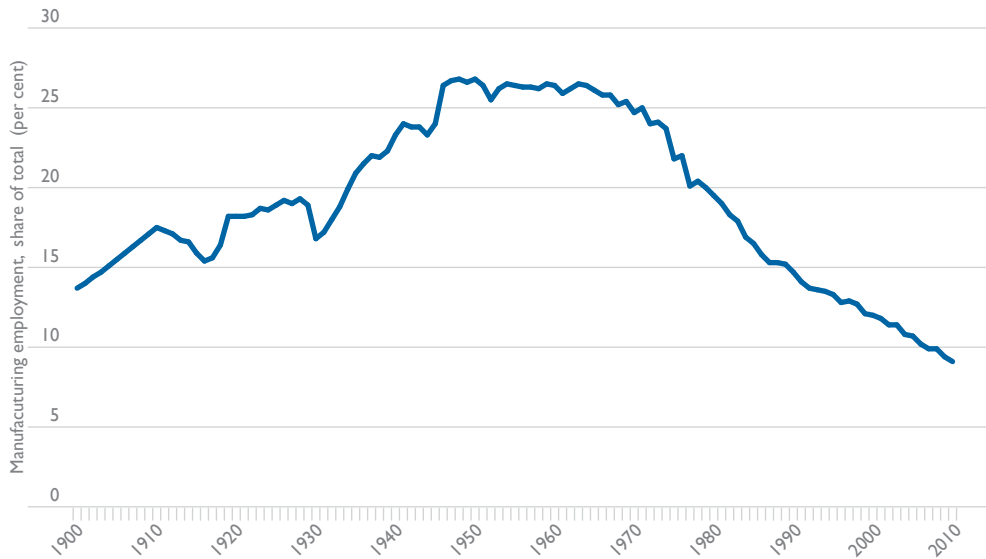
The rise of fly-in/fly-out (and drive-in/drive-out) has meant that mine workers and their families no longer necessarily live where they work, and so the earlier trend of opening towns alongside mines has declined. It also adds to the complexity of household decision-making, as families of miners can live in larger centres.

While fly-in/fly-out (and drive-in/drive-out) is an extreme example of the geographical separation between a person's place of work and their place of residence, the rise of private transport and improvements in communication technologies means people have a greater capacity to 'choose' their preferred location. This choice is based on a range of factors such as proximity to their extended family, access to services (especially education and health), locating in attractive areas and individual assessment of the risk of investing in towns heavily reliant on a volatile industry. This influences both the town where the workplace is located, and the town where the worker's family resides.

## *Rise and fall of manufacturing*

The fall in agriculture's GDP share, employment numbers and capital formation was counterbalanced by a rise in manufacturing's share of output and employment in the first half of the century (Frost and O'Hanlon 2009 citing Merrett and Ville 2007) (see Figure 6.6). Manufacturing employment increased from 190 000 in 1903 to 440 000 by 1929, a rise of 132 per cent (ABS 1988). Manufacturing grew in the earlier part of the twentieth century within an 'expansionary fiscal policy' framework to raise Australia's self-sufficiency by broadening the industrial base (ABS 1988).

**Figure 6.6** Manufacturing employment share, 1900 to 2010



Note: Data interpolated between 1900 and 1910.

Source: Reproduced from Connolly and Lewis (2010), citing ABS, RBA and Withers, Endres and Perry (1985).

Manufacturing was also a beneficiary of protectionist economic policies throughout the twentieth century, due to the belief that it would stimulate the beginnings of the manufacturing industry (and so economic growth) and increase labour demand. For example, in the decades following Federation, tariffs were raised multiple times (Anderson 1987, p. 176) as a government response to a range of factors such as declining in international shipping costs and in response to the Great Depression in the 1930s.

With the outbreak of the Second World War, Australia’s manufacturing sector and industrialisation progressed at pace. It was more advanced and in a better position than in the First World War to take advantage of the increased manufacturing requirements of a wartime economy. By 1940–41 for the first time manufacturing’s share of employment rose above rural industries (ABS 1988).

After the Second World War, a prolonged period of growth and expansion occurred for the industry, greatly stimulated by increases in population. Combined with tariff protection and import controls, new factory jobs clustered in built up areas emerged. This in turn attracted greater migration and raised demand for manufactured goods, further contributing to manufacturing growth.

The rise of manufacturing’s share of GDP was followed by its decline in the second half of the century (see ABS 2005). Manufacturing employment fell by 80 000 jobs, between 1973 and 1980. The 1970s saw a downward shift in the world’s economy, particularly with the oil shocks beginning in 1973. Several factors contributed to the fall in manufacturing’s share of employment and GDP in the 1970s: the mining boom, increasing competition from industrialising economies and in 1973, tariffs were reduced by 25 per cent, with more cuts following later in the decade (Anderson 1987). However, the textile, clothing and footwear and motor vehicles and parts industries were increasingly protected by quotas (Anderson 1987).



The decline in the importance of manufacturing to the economy also 'stems primarily from the fact that most new jobs have been created in the services sector, rather than as a symptom of massive net labour shedding in manufacturing' and increases in labour productivity reducing labour demand while increasing output (Productivity Commission 2003, p.28). Spatially, 'the evidence suggests less reliance on manufacturing as a source of regional activity and employment. For example, in 1981, there were eight areas in which manufacturing accounted for 24 per cent or more of area employment. By 1996, there was just one such area (Whyalla)' (Productivity Commission 2003, p.75).

This pattern of manufacturing decline is consistent with most other OECD countries. The emergence of low cost developing countries has resulted in a shift in global manufacturing, particularly to south-east Asia and China.

As in agriculture, individual manufacturing sectors have fared differently over time. The Productivity Commission (2003) found that natural endowment-based manufactures and products with higher skills and R&D requirements in 2000–01 contributed a higher share to manufacturing value added than they did in 1968–69. In contrast, manufactures which are less complex have more competition from imports, explaining the reduction in the importance of textile, clothing and footwear and other sectors (Productivity Commission 2003).

## Distribution of manufacturing

The largest site for manufacturers to locate was in capital cities, leading to a strong concentration of activity. However in the pre-Second World War years, small rural manufacturers survived due to the 'location' protection afforded by relative isolation.

This degree of 'location' protection was eroded because of the falling costs of transport. The formation of large-scale, single factories resulted in the transport of goods across large areas, such as the butter factory example provided in Box 6.1. The effect was a dismantling of small-scale manufacturers in regional towns as they found it more difficult to compete. Improvements in transport enabled a regionally-based system of production, with fewer firms located in a regional centre.

### Box 6.1 Butter factories in Victoria

Butter factories in Victoria provide an example of how secondary industry initially stimulated many small towns, but changes to technology and economies of scale led to larger scale operations in fewer centres.

For most of the 1800s, butter was made on individual farms, but by 1905 there were almost 200 butter factories in Victoria. In addition, each butter factory had several geographically dispersed creameries, where farmers took their milk to be separated. Townships grew on the back of these creameries (Keneley 2005).

Keneley (2005) reports that this system for manufacturing butter 'created new urban industries' and these butter factories and creameries 'became an important feature of many small towns'.

However, in the 1920s, individual milk separators for farmers were eventually adopted to save transport costs to the creameries. This made creameries obsolete and left many small townships without a secondary industry (Keneley 2005).

Transport also changed the spatial pattern of butter factories. Motorised transport in the 1920s and 1930s enabled wider milk collection, causing milk factories to expand and amalgamate, with the consequence of employment loss (Keneley 2005, Department of State Development, Business and Innovation 2010). The potential catchment for milk collection further expanded with refrigerated tankers in the 1950s (Farrer 2005).

Additionally, economies of scale resulted from 'more capital-intensive technologies' (Farrer 2005, p.172). Due to these transport and industry technologies and other innovations, between 1946 and 1970, the number of dairy factories in Australia halved (Farrer 1988). In Victoria, most local butter factories had closed by the 1960s or had been 'swallowed by large dairy conglomerates' (Department of State Development, Business and Innovation 2010).

In a few locations manufacturing became a substantial basic sector for regional cities such as Newcastle, Gladstone, Geelong, George Town and Whyalla (see Box 6.2). It provided them with a strong growth mechanism over and above those generated through developing services in the mid-twentieth century. For example, Geelong was a major port but became an important manufacturing hub with major companies entering. As The Geelong Manufacturing Council (n.d.p.) reported, the 'Ford Motor Company (1925), Pilkington Glass (1937), Shell Refinery (1954), and Alcoa Australia (1963) were followed by a range of other national and multi-national companies' that formed the backbone of the city's basic industry<sup>31</sup>.

Governments have made attempts to decentralise more manufacturing jobs to alleviate congestion in capital cities and promote regional development. In fact it did partly fuel urban growth in regional areas. Following the Second World War 'it was agreed that State governments should promote decentralisation by offering incentives to certain industries, while the Commonwealth further assisted decentralisation through its allocation of defence activities and by encouraging migrants and overseas firms to establish themselves in provincial areas' (ABS 1988, p.674). For example, Victoria's state governments encouraged manufacturing to be more decentralised by subsidising rail and power generation for regions outside of Melbourne (Frost et al. 2002). Dingle (1985) notes that between 1950 and 1953, the number of manufacturing jobs outside Melbourne doubled with the expansion of, for example, towns in Gippsland developing electric power facilities, paper manufacturing and oil deposits (Frost et al. 2002). Within the Melbourne sphere of influence, new suburbs were also built—Broadmeadows and Dandenong were designed especially for the car industry.

Yet Self (1995, p.258) argues that government initiatives to promote growth in regional areas were undertaken with little consideration for a region's real economic potential and describes these policies as 'scattergun' in nature. So while some areas profited from the shift to manufacturing, other areas were unable to attract new firms and lost economic ground.

<sup>31</sup> More recently, Geelong has been and continues to experience structural changes to its local economy.

**Box 6.2** Whyalla, South Australia

A city that grew from a manufacturing base is Whyalla on the Spencer Gulf, in South Australia (discussed in Chapter 5). It had an average annual population growth rate of 6 per cent from 1911 to 2006, but most of this growth occurred in the middle of the century through expansion into industrial manufacturing. This town grew from the discovery of iron ore, but expanded considerably with the BHP Indenture Act with the construction of a blast furnace and harbour at the beginning of the Second World War (City of Whyalla n.d.p.). This was combined with opening of ship building operations next to the furnace for the construction of the navy's patrol boats and the opening of BHP's steelworks to enable ore to be processed in South Australia. These new jobs required workers, which led to the rapid expansion of the town. In fact, the South Australian Department of Lands made preliminary plans for a city of 100 000 persons in the 1970s (Houghton 2011).

Yet, the city, as with other industrial cities, had its traditional employment base adversely impacted by the increasing competition from other industrialising nations, along with changes to tariff structures and productivity gains. In the case of Whyalla, the city's population peaked at 33 000 in 1976 (City of Whyalla n.d.p.), and by 2006 had just over 21 000 persons. BITRE's (2011a) study into population change found a similar pattern for other industrial coastal cities. These cities, such as Newcastle, Wollongong, Geelong and Burnie-Devonport, are associated with the restructuring in manufacturing.

In the latter part of the century, the distribution of manufacturing on a spatial level was also becoming much more complex. While some key regional manufacturing hubs experienced considerable contraction in employment, many areas experienced employment growth, though the Productivity Commission (2003) states that this is partly attributable to overall population and employment growth. These geographic differences are a testament to the fact that while manufacturing employment and shares have declined overall, this does not mean that all types of manufacturing have (Productivity Commission 2003). For example, food, beverage and tobacco manufacturing has grown strongly in some regions, while declining in others (BTRE 2003a). Regions specialising in food, beverage and tobacco manufacturing are strongly clustered in south-east Australia and in coastal southwest Western Australia (BTRE 2003a).

### *Expansion of service industries*

A dominant feature of the Australian economy has been the consistent growth of service industries since the Second World War, as shown in Figures 6.3 and 6.4. The service sector has consistently been a large contributor to GDP and by 2000–01 it had almost doubled its share post-war<sup>32</sup>.

The proportion of the Australian workforce engaged in service industries has grown substantially over the past 50 years, rising from around 60 per cent in the 1960s to over 80 per cent at the beginning of this century (Connolly and Lewis 2010) (see Figure 6.4). In the 1950s, the service sector was closely linked to manufacturing. But with the decline in the relative importance of

<sup>32</sup> In Figures 6.3 and 6.4 the 'services' category incorporates a wide collection of services such as retail trade, accommodation and cafes, health and community services, communication services and business services.

manufacturing the growth has been in social services and in finance sectors such as property & business services and finance & insurance.

Connolly and Lewis (2010) argue that the rise in the services sector largely reflects both rising consumer demand and real incomes. Spending on health, education, recreational and financial services has coincided with rising labour force participation, particularly by women. For example, services previously provided within a household such as childcare are being demanded to meet the changing needs of families.

The rise in services also reflects the relatively high Australian wage rates compared to other nations. This has meant that tradeable goods are being sourced offshore while non-tradeable goods (and the majority of services) have to be sourced locally due to the need for a local physical presence. The rise of offshore call centres shows that some services too can be effectively imported.

The service sector's increasing importance is shifting the role that non-basic industries have to a local economy's performance. Of particular importance is the location of service providers. Traditionally, towns and regions have been based on primary or secondary industries that produce 'things' for export outside the region (see Chapter 2). A traditional exception has been tourism, as services provided to tourists are effectively exports, creating a flow of income from outside.

In the early part of the century, the shift towards services was to the advantage of larger regional centres that provided the economies of scale and urbanisation advantages resulting in increasing degrees of centralisation. As McLachlan et al. (2002, p.XIX) observed, 'service jobs are concentrated in the capital cities', but at the same time, they still account for the majority of employment in non-metropolitan regions. In fact, in almost all non-metropolitan regions, the share of service sector employment increased between 1981 and 1996.

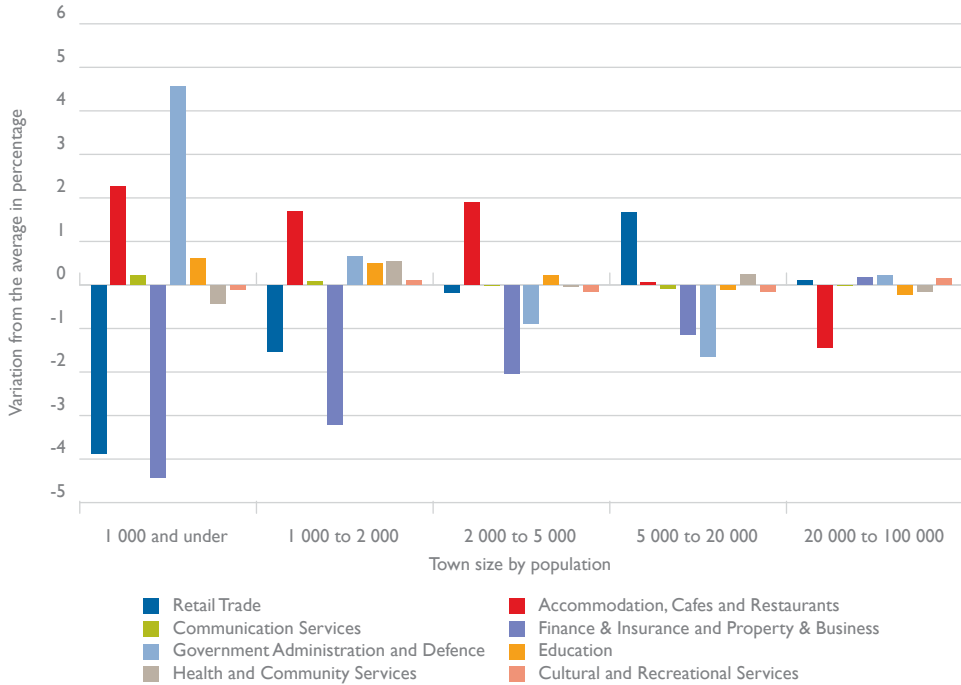
While the share of employment in services has risen for non-metropolitan locations, there are differences in both the type of employment and the size of towns. Figure 6.7 presents the industry mix of towns based on their variation from the average industry mix for towns with up to 100 000 persons, in 2006. Several features are evident:

- The proportion of retail trade in smaller towns is low in comparison to the average, and is particularly low in towns of fewer than 1000 persons. In contrast, retail trade forms an important component in the industry mix of towns over 5000 persons.
- The accommodation, cafes & restaurants industry has a high personal contact requirement and is found to be more important for smaller towns.
- There is a high proportion of government administration & defence employment in small towns.
- Finance & insurance and property & business services employment is proportionally higher in larger centres, while very low for small towns.

The differences in the industry mix for various town sizes illustrates that higher order services are positioned in larger towns and cities, such as finance & insurance and property & business services. For example, there have been substantial changes in how people access banking, which has resulted in the closure of bank branches for many small towns. A closer look at the impact of branch closures is presented in Box 6.3.

In addition, services that require personal contact or goods consumed immediately have either a higher or similar proportion in small towns when compared to large towns.

**Figure 6.7** Service industry employment by town size (variation from a city of 100 000 persons), 2006



Note: Cities above 100 000 are excluded.

Source: ABS Census of Population and Housing 2006.

Contributing to the difference in the mix of services, many small towns are within easy commute to a larger centre. Improvements in transport provided consumers with the capacity to access goods and services in regional centres that would out-compete small towns on price, quantity and variety in many instances. There was an expansion in competition spatially that was shifting economic activity increasingly to the benefit of larger regional hubs. This point is examined further in Chapter 10.

However, sometimes towns in close proximity to a regional city can use this proximity to become attractive small communities socially and environmentally, while drawing their economic power and access to services from the larger centre. Their traditional function of providing services to their residents and the surrounding hinterland has declined, but they can transform their function to become attractive residential locations for the larger regional centre's labour force. Towns in this situation can develop a symbiotic relationship with the larger centre. For example, Forth (2001, p.75) points out that there are many regional towns of less than 4000 people that have successfully reinvented themselves into 'tourism, aged retirement or commuter centres and whose future viability is assured'. Essentially, they have adopted a new economic base. Nevertheless, there are numerous cases in which small towns have been overwhelmed economically by the larger centre, resulting in their long-term decline. As Beer and Clower (2009, p.385–6) acknowledge, modifying peripheral economies to meet this challenge is very difficult.

### Box 6.3      Restructuring in the banking industry

Banking was previously regarded as a guide to a town's economic prosperity, because banks would open and close based on the size of the market they served (Ralston and Beal 2000). However, the changing nature of the banking sector through technological advancements, globalisation and deregulation has allowed banks to reform their service delivery networks, particularly through ATMs and the internet. This effectively changes the role of banks and the way in which services are provided.

A consequence has been bank branch closures, which were particularly prominent during the 1990s with the closure of 21 per cent of bank branches, between June 1993 and June 1998 (CAFI 1998). This represented a fall of over 1400 branches (CAFI 1998). The closure of these bank branches provided an empirical illustration of how the removal of a service from a town flows through the local economy and shows how people adapt to that change. CAFI (1998, p.7) investigated the initial impact on communities and found three main outcomes:

- 'financial drain from the community;
- loss of financial investment; and
- a loss of confidence in the community'.

The loss of confidence in the community was expressed in terms of population decline, loss of businesses and services, decreased property prices and lower employment opportunities (CAFI 1998).

However, analysis of these same towns after several years revealed major changes through greater access to self-service delivery and the entry of credit unions. After the initial significant impact, local residents made active choices with regards to their financial arrangements (CAFI 1998). CAFI (1998, p.29) concluded that even though towns are still losing retail spending, in towns that 'more strongly recognise[d] the need to support local commercial activity, residents [would] travel to bank and shop much less frequently' and surmised that '[i]t is evident that the awareness and behaviour of residents is vitally important for the future of rural communities'.

## 4.      Technological change

Technological change has impacted on almost all areas of life, including industry, communications, consumer goods and transport. In fact, in the second half of the twentieth century, internationally there was a 'radical speeding up' of technological advances (Soubbotina 2004, p.65–66).

Technological advancements in industry have increased efficiency. As technology changed, the requirements and practices of industry changed. For example, Keneley (2005) examined urban development in western Victoria between 1890 and 1930, and found that the connection between technology and settlement was not straightforward over time. After settlement, there was not much of a connection between town and workers in the country, because the nature of farming at the time required a lot of land to be profitable, so people were spread out. Keneley (2005) noted that in western Victoria prior to 1890, the wool industry did not create demand for the services found in country towns, as pastoral estates were quite self-contained.

Yet from 1890, farming could be carried out on smaller lots due to technological changes which increased the productivity of the land. This transitioned local economies towards small wheat

farms that required towns to provide services (Keneley 2005). Workers were positioned closer together and towns could grow. Then in the 1930s more technological changes (including in transport) made fewer, larger farms viable, and so towns with economies based on farm services declined (Keneley 2005). The resultant productivity increases led to a decrease in the number of workers required.

Due to the reduction in labour requirements, technological change is not always embraced by workers. However, Banks (2000) pointed out that while technology such as mechanisation in farming reduces the amount of labour required, it also enables the industry to grow (and survive) because of increased productivity.

Nossal and Gooday (2009, p.4) reported that 'increased production in Australian agriculture has been almost entirely a result of productivity improvements', while the Productivity Commission (2005b, p.XL) considered the use of new knowledge or technologies to be 'a key source of productivity growth in agriculture'. Types of new technologies include farm machinery/equipment, chemicals which increase yields (such as fertilisers), better farming systems and genetic modification. Other sources of productivity growth include better management practices due to competitive pressures internationally, ICT, and structural changes (Productivity Commission 2005b). Agriculture also benefited from improved transport.

Technological change also led to the emergence of large-scale production (for example, farms, manufacturing plants), resulting from high capital requirements to achieve economies of scale. This in turn makes it more difficult for smaller operations to compete because of the need to invest in capital items. Also, the reach of individual firms has improved because innovations in, for example, transport, refrigeration and packaging meant that larger scale production became possible (Farrer 2005). An illustration of the change has been discussed previously in Box 6.1, which examined the change in butter factories in Victoria.

Large-scale farming is accompanied by rationalisation of farming activities. One example of the decrease in farm numbers was in the dairy industry. The Industry Commission (1991) found that between 1971 and 1990, the number of dairy farms in Australia fell from 43 000 to 15 000. Essentially, operations were fewer and larger, with an increase in productivity per cow. This pattern of dairy farm decline and the rise in average herd size occurred across all states, although the falls vary in severity across the states. Table 6.3 shows the declining number of registered dairy farms between 1971 and 1990.

**Table 6.3** Registered dairy farms by state, 1971 to 1990

State	1971	1981	1990	1971–1990 (per cent)
New South Wales	7 735	3 256	2 218	–71
Western Australia	1 491	615	496	–67
South Australia	3 836	1 722	969	–75
Tasmania	3 117	1 384	880	–72

Note: Excludes Victoria and Queensland as data is not comparable across the time period for these states.

Source: Industry Commission (1991), Table B1 (p.168).

Technology also affected the location of dairy farms. Dairy farms used to be close to major population centres because of the perishable nature of milk. The combination of 'refrigeration, improved transport, and pressure on land use from urbanisation' allowed dairy farming regions to move further away from major centres (Industry Commission 1991, pp.5–6).

Advancements also occurred in the production of food. Innovation and technology have changed the ways in which food can be produced, packaged, preserved, transported and stored. These innovations affect how food manufacturing and retail function, which in turn affects the functions of individual towns. From the manufacturing perspective, these innovations contributed to centralisation of operations. Preservation techniques which extend the shelf lives of different types of food and the availability of household refrigeration have also decreased the required frequency of food shopping visits.

Consumer preference also changed during the twentieth century because of influences such as other cultures, rising incomes, new inventions and the changing role of women. This stimulated industry to change, grow and innovate to meet new consumer demands.

More women in the workforce following the Second World War led to rising demand for convenience food (Farrer 2005). Technological innovations (such as in freezing and packaging) enabled convenience food to be produced to meet this demand. Another example is the presence of American troops during the Second World War exposing Australians to the American fondness for orange juice, creating a local industry (Farrer 2005).

The example of orange juice also illustrates the way in which larger industries substantially changed their composition, and within them, individual sectors grew or declined. For example, the Productivity Commission (1999) noted that while agriculture production was increasing, its makeup changed from an emphasis on beef and wool towards cotton, wine grapes and other horticulture associated with irrigation. This changing structure had an impact on which towns grew and which declined.

Uptake of innovations can expand the productive area of a natural resource-related industry by making previously unprofitable undertakings worthwhile. In the past 100 years, new innovations in exploration, extraction and processing changed the geographic spread of mining (and the location of support towns), decreased the need for labour, and increased the productivity—and hence the viability—of mines. For example, improvements in mining and transport technology since 1911 meant that 'previously uneconomic' deposits could be mined (although the world economy also determined which mines were viable) (ABS 2001, p.672).

Manufacturing is another industry that has radically changed with mechanisation, computers, improved production processes and economies of scale, making the industry more productive and reducing labour needs. Innovations in materials have also changed the industry: the Productivity Commission (2003, p.181) calls the advances in lighter, stronger and cheaper materials (such as plastics, high tensile steel and aluminium) the 'quiet revolution' in manufacturing.

## Communications

Communications technology has evolved radically in the last 100 years. At the beginning of the twentieth century, communication was comparatively basic, expensive and time consuming, but today it is ubiquitous, affordable and fast—in some cases, instantaneous. The timing of access



to these communications technologies differed spatially, with major centres tending to benefit first, and the most remote areas much later or sometimes not at all.

Two key widespread communication services at the beginning of the twentieth century were the postal service and the telegraph. At Federation, the Commonwealth was responsible for postal, telegraphic, telephonic and similar services. While telephones were not yet a standard form of communication for the wider population by 1901—each state had its own telephone network, but each was unconnected to the others, with only an average of one telephone service per 1000 people (Lee 2003). In terms of mass media, newspapers dominated—radio services did not commence until 1923, and the first television broadcast was fifty years away (ABS 2001).

In the regions, by 1905 many towns had postal services, telegraph and money-order services, in one or more offices, indicating how essential communication services were (Australian Handbook 1905). In fact, from 1851, 'a remarkable increase in the number of post offices in Australia' occurred (ABS/CBCS 1913, p.746). By the beginning of the twentieth century, even very small towns contained a post office and 'were focal centres of social interaction' (Lee 2003). Post offices also contributed to employment for these small towns, with 5664 post offices open in Australia in 1911 or 8054 post and receiving offices, equal to an office for every 567 people (ABS/CBCS 1913).

This substantial distribution of post offices meant later post office closures affected employment and services in many towns. In 1962, there were 8001 (official and non-official) post offices, equivalent to 1338 inhabitants per office (ABS/CBCS 1963). By 1990, there were 4401 post offices and agencies (ABS 1992), and by the end of the century (1999–2000) this had fallen to 3887 corporate outlets and licensed post offices (ABS 2002). This shows the decline in the number of post offices across Australia, despite the growing population. These closures reflect a focus on efficiencies, but also the wider effect of declining towns and technological shifts towards other communications, such as the telephone. More recently, since 2000, mail volumes first stabilised and then declined with the rise of email, but parcel volumes increased with online shopping (Fahour 2013).

The telegram was a major form of long-distance communication in the early twentieth century, and led to the establishment of some towns. For example, the Overland Telegraph between Port Augusta and Darwin, established in 1872, connected Australia to an overseas network. It required repeater stations along the route, and this 'gave birth to a string of iconic Australian towns, such as Alice Springs... Tennant Creek and Daly Waters' (Australia Post n.d.p.). Millions of telegrams were sent each year for most of the twentieth century. For the first half of the century, the number of telegrams sent increased with the population, and as the cost fell. The frequency of use peaked after the Second World War at 35 million telegrams, falling to 18 million in 1975 as telephone services improved (Lee 2003).

Telegrams declined with the development and wide spread use of the telephone. The development of telephone networks occurred in the late 1800s in cities and towns, long distance lines being slower to eventuate (Lee 2003). Over the first few decades of the twentieth century, the states were connected. Take up was slow before the end of the Second World War, with telephone subscribers expected to pay for the line to their property (Arnold 2005, Curtis and Pearcey 1988).

An interesting aspect was the establishment of telephone exchanges. These manual telephone exchanges created employment in almost every country town before eventually being replaced by automation. However, the process was a long one, with the change happening sooner in capital cities and later in country towns. In 1910, there were 58 telephone exchanges in regional Queensland (Kleinhöder and Mate 2010). Sydney city's last manual telephone exchange closed in the 1920s, but most smaller country towns still had manual exchanges in the 1960s, with the last closing in the early 1990s (Lee 2003). The closure of these exchanges meant the loss of telephonist jobs, but also a decline in social connection with people ringing in to spread word or to hear about new babies, sickness, bushfires and so on (Milliken 1991 reproduced in Ison 2000).

The most recent communications technologies, mobile phones and the internet, have quickly grown to be commonplace. The proportion of households with a mobile phone grew from 24 per cent in 1996 to 72 per cent in 2002 (ABS 2007), revealing the speed with which this technology was adopted.

Communications technology has enabled greater connection between people, decreasing distance much as transport has done. The change has meant that people are able to communicate across long distances for business and personal reasons. Like transport, this contributed to the spatial distribution of firms and the longer distances that can now exist between the home and the workplace.

## 5. Transport

Technological advances in transport have had such a profound impact on the movement of goods and people that it will be examined separately from other forms of technological progress.

Chapter 3 discussed transport in Australia up to 1911. Australia's railways were first built independently by each colony with different gauges. Their primary function was to connect a hinterland's agricultural and mineral production with seaports, usually the capital.

While early rail was less flexible than modern road transport, it was a vast improvement on the transport which existed at the time. Farmers benefited from lower transport costs with rail enabling produce to be moved to market more quickly and cheaply. The wheat industry and the railways were fundamentally linked. Being on the railway meant that towns became transport nodes as agricultural products were brought to railway sidings for transport to market. Rail became an important industry, as discussed in Chapter 5.

Rail remains a major transport option for some bulk goods, with mining and agriculture major users. The privately-operated Pilbara railways move vast quantities of iron ore to coastal ports. The recent expansion of the Fortescue Metals Group's Christmas Creek mine involved the construction of a 50 kilometre railroad to connect it with the Port Hedland line (Kable 2014). The Productivity Commission (1999, p.XXXV) reported that 'coal is the single largest commodity transported by rail' and 'export coal is transported almost exclusively by rail'.

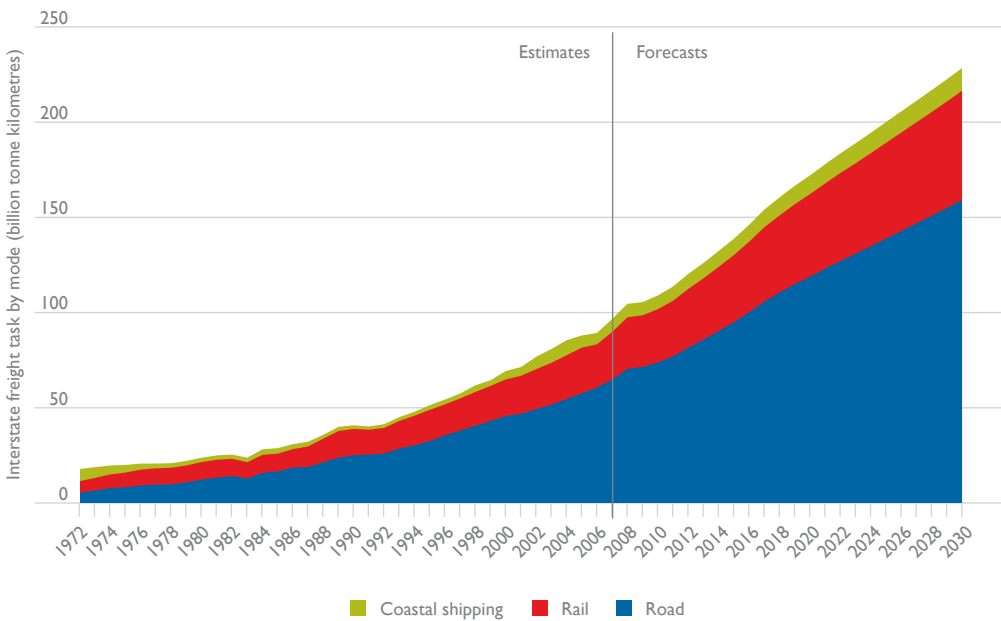
Today, wheat for export is still mostly transported by rail, with rail carrying an estimated three quarters of the total volume (Productivity Commission 2010). Rail rather than road is used when grain is transported from more distant areas. However there has been a recent shift

towards road transport. This has been accompanied by a consolidation and rationalisation of rail branch lines, particularly those with low volumes of wheat transport, as well as a reduction in rail grain wagons in favour of trucks (Productivity Commission 2010).

Despite the shift towards road, rail is still fundamental for some industries and in some circumstances. Nevertheless, the influence of rail on the spatial activities of people and businesses in regional areas has diminished over the past century.

For transporting interstate freight, road has dominated for decades, progressively gaining a larger share of the freight task (see Figure 6.8).

**Figure 6.8** Interstate freight estimates and forecasts, coastal shipping, rail and road, 1972–2030



Note: 1972 to 2007 figures are estimates; 2008 to 2030 figures are forecasts.

Source: BITRE (2010b), BITRE estimates.

Today, road freight is displacing rail as the first choice for transporting many goods. Freight movements highlight this shift. In 1972, along the North-South corridor<sup>33</sup>, road and rail moved 4.7 and 3.5 billion tonne kilometres respectively, but by 2007 road increased to 56.2 billion tonne kilometres compared to only 8.0 billion tonne kilometres by rail (BITRE 2010b). The mode share of freight by road increased substantially with the sealing and duplication of highways and vast improvements in truck productivity (for example, 6 axle articulated trucks and B-doubles) (BITRE 2010b).

Over the century, a more extensive road network was developed, with better roads enabling faster, safer travel. This was facilitated by technological improvements (for example, in surfacing). Cars put new pressures on roads and changed the 'state of balance in which the road network had existed with the other modes of travel and the land use patterns' (ABS 1974). Before

<sup>33</sup> The North-South corridor refers to freight movements with three distinct interstate general freight markets (Melbourne–Brisbane, Melbourne–Sydney and Sydney–Brisbane) as well as portions of more peripheral origin-destination routes.

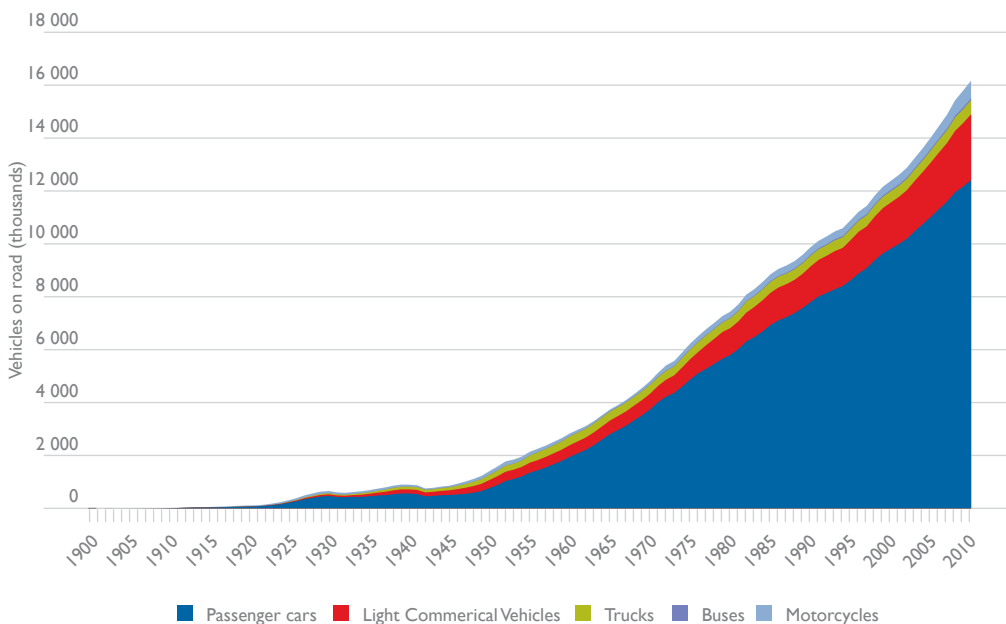
the car; the focus on rural roads was getting produce to a railway station or port (Lee 2003). Similarly, quality arterial roads had been unnecessary when rail was the main transport mode (ABS 1974).

The development of the national highway network was part of this improvement, connecting the nation's capital cities and putting in place important links that channel traffic along these corridors. Towns positioned along these routes have benefited from traffic, such as those along the Hume Highway between Melbourne and Sydney. Over very long distances, rail is still an important mode of transport, as pick-up and delivery costs are a smaller proportion of costs (BITRE 2010b). Compared to rail, road transport is extremely flexible.

Road transport is now the dominant mode of transport in Australia. The country went from 11 000 registered passenger cars in 1911 to over 11 million in 2006 (see Figure 6.9). Yet, as Lee (2003) reported it was not until the 1950s that car ownership rose sharply. It was 'very much an elite affair' with poor road quality contributing to the continued dominance of rail in the early decades of the twentieth century (Lee 2003). This is illustrated in Figure 6.9 with little growth in the number of cars on the road in the 1930s and 1940s.

The important turning point towards widespread car use was the 'long economic boom' after the Second World War (see Figure 6.10). This was a period of growing wealth, enabling people to purchase cars for personal transport. Motor companies shifted manufacturing from military to civilian cars, with the first all-Australian manufactured car produced in 1948 by Holden—'the FX'. The FX was priced at £733 and 'was an immediate success... Holden could not satisfy demand quickly enough. Eighteen thousand people had signed up and paid their deposit without even having seen the vehicle' (Australian Government 2007). With the increase in the number of cars, there was growth in motor vehicle retailing and service stations, which increased fourfold from 7500 in 1947–48 to over 32 000 locations in 1991–92 (ABS 2001).

**Figure 6.9** On-road vehicle stock, 1900 to 2010



Source: BITRE (2012).

## Spatial impacts of transport systems – customer mobility

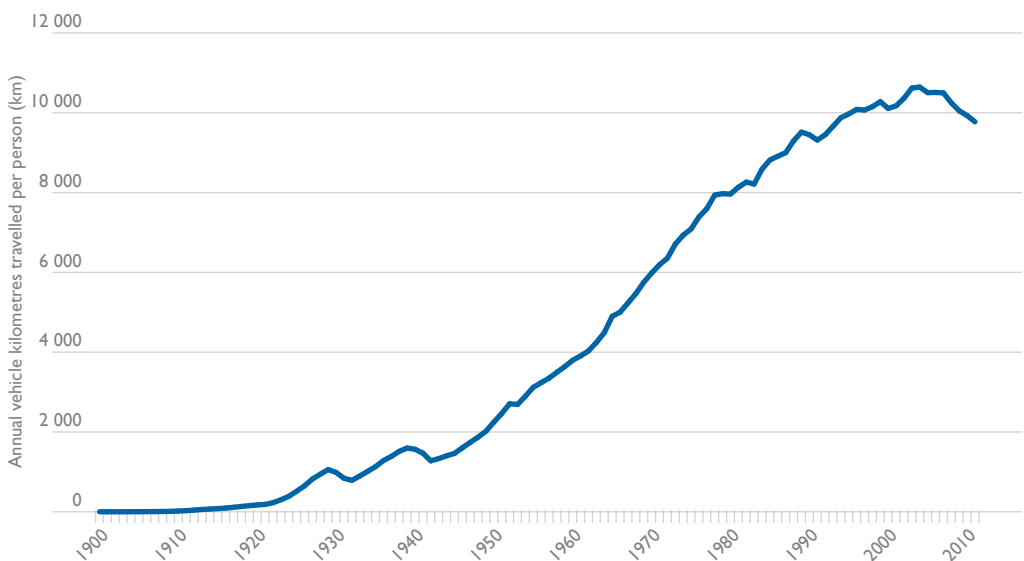
The rise of the motor vehicle fundamentally changed the spatial connection between towns and activities within them. It transformed how people accessed their place of work, shopped, conducted recreational activities and organised their lives. Today many people, particularly in regional Australia, would be unable to ‘function’ without access to a car.

The motor vehicle fundamentally changed personal mobility because it provided:

- flexibility of destination—people are able to move from origin to destination by one transport mode
- flexibility of time—people can leave at their own discretion without following a set timetable
- the ability to carry a reasonable load of goods and passengers
- increased range/ distance—people are able to travel further, substantially increasing the average distance a person travelled (see Figure 6.10).

Smailes (2000) provides a dramatic illustration of this change from South Australia through the use of postal surveys about travel patterns in 1968–69 and 1992–93. The responses show a ‘substantial reduction in mean travelling times’. Peripheral locations had roughly three hours cut from travel times, with the greatest falls being along major highways (Smailes 2000, p.161). This brought a substantial proportion of the upper south-east into easy contact with Adelaide (Smailes 2000).

**Figure 6.10** Australian trend in vehicle kilometres travelled per person, 1900 to 2010



Source: BITRE (2012).

The ability to travel further allowed people to expand their horizons, particularly their ability to access larger markets and social networks, which were generally located in metropolitan and regional centres. It provided people access to a wider range of products at relatively cheaper prices, and potentially greater employment opportunities. The link between the car

and changes in retailing was quickly recognised. Smailes (2000, p.164) found that in South Australia the 'burgeoning growth of large suburban shopping complexes has provided a new element of competition for retailers in country locations' with regional consumers drawn in.

Transport also influenced the movement of people within a location. Towns were originally compact with walking the most common form of movement. People had to be able to access all they needed in a limited space. People lived and worked in the same location. As Cosgrove (2011) points out, urban transport needs were minimal in the middle of the nineteenth century.

This changed dramatically around the 1900s, with the development of public transport (Cosgrove 2011). Electrified tramways were carrying around half a billion passengers a year by the First World War (Cosgrove 2011), enabling people to move to the suburbs, further from their place of work.

This type of transport system, however, principally changed the behaviour of people in the large capital cities. The introduction of rail in Melbourne is a clear example and substantially influenced the city's urban development. Rail lines fanned out into open countryside allowing the establishment of new suburbs, particularly in the 1880s 'land boom' (Mees 1994). This resulted in a strong connection between rail and low-density housing. It set in place the city's basic shape as a network of 'fingers' from the centre, especially towards the south and east of the CBD. The rail system laid down an element of path dependence for the city as its structure is still influencing current outcomes. In other words, the self-reinforcement locks a rational economic agent into one activity, but not necessarily the one with the best long-run potential (Arthur 1994, p.116). Once transport networks are in place, it can be difficult or cost prohibitive to transfer the activity to new locations or disperse activities. This will be discussed further in Chapter 8.

Subsequently, the widespread adoption of the car resulted in the 'filling in' of the spaces between railway lines in Melbourne (Mees 1994), while increasing the complexity and interconnections of transport flows both within the city and surrounding regions (BITRE 2011b). This pattern of growth is evident in other Australian cities, transforming them from a more tightly knit core-and-spoke configuration, to sprawling suburban low-density configurations (BITRE 2007).

## 6. Infrastructure

Infrastructure has influenced and reinforced settlement patterns. It is an investment in the physical systems and structures in a location and often a base on which towns grow. Timing is important in the establishment of infrastructure, as the technology of the day determines what infrastructure is constructed. An example is the electricity generation stations in the Latrobe Valley, in Victoria.

The Latrobe valley is made up of several cities—Warragul, Moe, Morwell and Traralgon—and a number of smaller towns and villages. Originally, the region developed with former miners being encouraged into agriculture. This was responsible for the development of many of the towns, with grazing and dairying becoming a prominent industry. However, the region's rich resource of brown coal became the driver in turning the region's basic industry from agriculture to electric power generation. For example, Yallourn 'A' station was opened in 1928 by the State Electricity Commission (SEC) to supply electricity for the state. This was followed by several

more plants over time. The town of Yallourn itself was a purpose-built site for Victoria's primary power generation workers and their families.

People were attracted to the region because of employment opportunities in this new industry. Existing towns benefited by providing residential accommodation for the expanding labour force. Moe had a population of 792 persons in 1911 and grew to over 15 000 persons by 1961.

Some towns in the Latrobe Valley were purpose-built developments. For example, the SEC built the town of Yallourn, which grew to a population of just over 5000 people. Houses in the town were not privately owned, but controlled and maintained by the SEC. A consequence of this was that Yallourn was dismantled after some 50 years, to access extensive coal deposits underneath, with the houses sold cheaply and relocated.

Another purpose-built town in the area was Churchill. It serviced the Hazelwood Power Station with construction commencing in 1965. Unlike Yallourn, houses in Churchill were privately-owned. Today the town has a population of around 5000 people and has a regional Monash University campus.

More recently, the privatisation of the electricity generators in the 1990s resulted in a substantial reduction in labour. This led to an extended period of population decline for local towns and cities. However, after the initial shock, the region began to grow steadily again.

Other examples of industry infrastructure include Tasmanian dams and hydropower stations and irrigation areas such as the Ord River Irrigation Scheme. Smaller types of industry infrastructure in towns can also provide a central point for primary producers to meet. Butter factories, saleyards, sugar mills, and the like have always provided a focus for agricultural producers.

Water pipelines are another example of infrastructure that reinforces the wider settlement pattern. These are established based on the strength of the existing settlement pattern, but also have the effect of reassuring its growth. For example, the Western Australian goldfields' water pipeline was constructed at the beginning of the twentieth century, delivering water from Perth to towns including Kalgoorlie. Similarly, the five water pipelines delivering Murray River water across South Australia, constructed between the 1940s and the 1970s, were created to meet demand and have helped retain the existing settlement pattern.

### *Town infrastructure*

Another type of infrastructure influencing settlement patterns is the town itself. This includes physical infrastructure such as the buildings, housing, utilities, schools, hospitals, but also the businesses, networks, shared history, organisations, social structures and so forth.

The building of infrastructure alone does not necessarily translate into greater economic activity for a location. For instance, while rail covered an extensive area of the country, only a few locations were able to become major hubs. The large construction phase of utilities which only need a few individuals to operate once completed, may not influence the base industry of the location. As Daley and Lancy (2011, p.38) have pointed out, better infrastructure cannot supersede the major drivers of long-term economic development: without changing the

economic fundamentals, simply placing infrastructure into towns piecemeal will not change their fortunes.

Quality infrastructure for a town or region provides a less tangible component in its development. Quality infrastructure can provide confidence because of the strong connection between the 'existence of quality infrastructure and the economic and social vibrancy of a community' (Amanor-Boadu and Burns 2008, p.4). Quality infrastructure gives people assurance about the future, regardless of current economic difficulties. Cities such as Bendigo and Ballarat and surrounding towns experienced a difficult economic outlook in the early 1990s, but residents did not believe the towns would disappear. Their well-developed infrastructure made residents confident that the towns would continue.

Infrastructure plays a powerful role in retaining a population. While other factors contribute to town decline, town infrastructure can have a moderating effect. As discussed with regard to wealth, people do not always have the option to move.

The existence of infrastructure reinforces the present settlement pattern. Local assets have a value, based on either retaining its existing use or shifting to a new use, depending on its relative value. The variety of new uses for local infrastructure is vast, for example factory warehouses renovated to accommodate flats or a weekend market. However, it is the presence of the infrastructure that retains activity within the location.

## 7. Social changes

The social profile of Australia has changed significantly since 1911, together with social attitudes and changes in activities.

One important social change has been the recognition of Indigenous people. Indigenous people have been greatly affected by prevailing social attitudes and government policy over time. Many government policies concerning Indigenous people in the early to mid-twentieth century restricted or determined movement or location. These policies were governed by broad ideological shifts in Indigenous policy over time. The first third of the century was characterised by 'protection' policies, which controlled the movement of Aborigines, regulated their employment, and included taking children. Assimilation policy dominated in the middle of the century, with an emphasis on Aborigines adopting mainstream Australian culture and beliefs, and gaining 'the same rights and privileges' (Law Reform Commission 1986, p.19). Later, policy moved towards integration rather than assimilation, acknowledging Aboriginal culture while aiming for improvements in health, education and employment. In the 1970s, government policy shifted again to self-management or self-determination (Law Reform Commission 1986). There have also been key changes, such as the 1967 referendum that removed two references in the Australian Constitution which discriminated against Indigenous people.

Australia is now more culturally diverse. In 1901, the vast majority of Australians were either born in Australia or the United Kingdom or Ireland (ABS 2000). More recently there has been a shift towards immigration from Asia and other countries (ABS 2012b).

After the Second World War, immigration policy changed to reflect the idea that there was a defensive advantage in having a large population, and assisted passage schemes were established to encourage migrants (Smith 1979). The Department of Immigration was established in 1945,



and a few years later immigration was booming (Department of Immigration and Citizenship 2009). The economic advantages of migration were also recognised and became increasingly important in immigration policy (Smith 1979). Economic advantages included the supply of labour for large projects such as the Snowy Mountains Hydro-Electric Scheme. Construction took place between 1949 and 1974, with migrants comprising 70 per cent of the workforce (Australian Government 2008).

Later, the emphasis of immigration policy shifted from assisting entry of large numbers to selectively focusing on skills (Jupp 2007). However, the White Australia Policy, established at the turn of the century, continued for several more decades after the war and was only relaxed in the 1960s. Not until 1972 did the government explicitly indicate that immigration decisions would not be based on race, colour or creed (Jupp 2007).

In 2011, 26 per cent of the Australian population was born overseas and another 20 per cent had at least one parent born overseas (ABS 2012b). Hugo and Harris (2011) argued that immigration has been important not just to the total population (which would be under 13 million without it), but also in the distribution of settlement, since immigrants do not settle in the same pattern as the existing population.

People born overseas are more likely to live in capital cities (82 per cent, compared with 66 per cent of the whole population). Overseas-born people who arrived in Australia in the last 20 years (since 1992) are even more likely (85 per cent) (ABS 2012b). While second-generation Australians were less likely than those born overseas to live in a capital city, third-generation Australians were even less likely than second-generation Australians (ABS 2012b). This tendency for recent immigrants to live in capital cities has become stronger over time. Hugo and Harris (2011) found that the percentage of new arrivals who settled in capital cities increased with each Census after the Second World War—except for 2006.

Demographic shifts have also occurred in the age profile of the nation. The ABS (2000) reported that on average, Australians are now older than they were at the start of the twentieth century. At the beginning of the twentieth century, 29 per cent of Australians were 35 years or older, compared with 50 per cent at the end of the century (ABS 2000). In 1901, over a third (35 per cent) of people were aged 14 or under, compared with about one fifth (21 per cent) at the end of the century (ABS 2000). A contributor to this change has been the increasing life expectancy of Australians. For example, 'compared with their counterparts in 1901–1910, boys born in 2010–2012 can expect to live around 25 years longer and girls live an extra 26 years' (AIHW 2013).

Age and wealth are also strongly connected, with older people (particularly in the 55 to 64 age group) having the most wealth. BITRE (2009b) found that differences in age structure across regions could explain about a quarter of the variation between regions in household wealth.

Another change has been the growth of a welfare system. Age or invalid pensions were introduced by a few states from 1900 to 1908, but the Commonwealth age and invalid pension did not come into effect until 1909 and 1910 (ABS 1988). At the time, a much smaller proportion of the population would live into old age, so in practice, these pensions were not as widely utilised as today. Another major development was unemployment benefits. While Queensland introduced unemployment insurance in 1923, it wasn't until 1945 that the Commonwealth brought in unemployment and sickness benefits (ABS 1988).

Australians have also become better educated. Throughout the twentieth century, the level of education in Australia has increased steeply, driven in part by economic growth (Evans and Kelley 2002). In 1911, only 31 per cent of 14–15 year olds still attended school, compared with 97 per cent in 1996 (ABS 2000). Only 0.2 per cent of people aged 20 and over participated in education in 1911, compared with 12.4 per cent in 1996 (ABS 2000).

While Evans and Kelley (2002) could not account for most of the increase in education levels, they hypothesised that perceived job opportunities would be important. They also argued for a relationship between technology, industry and education: '[t]he advance of science and technology in the course of the twentieth century created the knowledge necessary for an advanced industrial economy, while growth of education created a labour force able to take advantage of these new possibilities' (Evans and Kelley 2002, p.35). De Laine et al. (2000) found that skilled workers as a percentage of total employment has increased significantly since 1978. This has meant that the workforce is capable of more sophisticated and productive jobs.

Education and employment opportunities have also been an important pull factor in young people leaving regional locations and migrating to cities. This has been a long-standing trend, together with the rise of female participation in the labour force. Women were much more likely to have or be seeking employment in 1999 than in 1911, with the change particularly pronounced for women of childbearing/ rearing age (20 to 54 years) (ABS 2000). The effect of increased female workforce participation is that women are often financially independent with their own educational and professional ties in urban areas. This changes the decision-making process for family units about where they want to live, as now there are often two careers to be considered, at least one of which is likely to be based in a city. Family units are also able to generate wealth more quickly than before.

Another attitudinal change over the twentieth century was the shift from a focus on development to the environment (Koshin 2011). For more than half of the century, the emphasis was strongly on development. In about the 1960s, the environment began to play a greater role in Australians' values, and environmentalism 'appear[ed] as an increasingly popular ideology in the later twentieth century' (Koshin 2011, p.12). This also had the effect of creating new types of jobs and industries, including environmentally-focused tourism.

Tourism was beginning to become a major industry. The number of international tourists to Australia has been growing in the long term. The total number of visitors grew from 125 000 in 1963 to 3.0 million in 1993, and then doubled to 6 million in 2011–12 (ABS 1995, TRA 2012). With this tourism has become a more important part of town economies. Baum et al. (2005) discuss regional towns and cities which have strong population growth and also strong tourist industries—for example, Broome, Katherine and Cairns, the last of which they call 'a city driven by tourism'. This growth reflects the nature of tourism as an emerging industry. Tourism is a relatively recent function for Cairns, which grew for other reasons—industry and transport connections to the inland—in its early years. Towns which do not have a primary tourism focus can also benefit from through-traffic, and in this way, have greater markets for their retail sector and other businesses such as eateries and accommodation.

## 8. Government policies

BTRE (2003b, p.17) outlined three distinct periods of broader government policies and macro-economic influences: colonial policies (1788–1900); pre-trade liberalisation policies (1920–1970s); and post-trade liberalisation policies (from mid–1980s).

Colonial policies promoted primary export industries through the provision of infrastructure (for example, transport) and land releases and protected local industry, particularly manufacturing. However, these policies differed between the colonies. One of the most important events that changed the structure of Australia's economy was federalism. This saw a transition to a uniform trade regulation framework between the states and the move to a nationally consistent system of international protection measures. The consistent tariff regime was more effective than that of the disjointed colonial one and tended to aid the emerging manufacturing base which was located in larger cities (Sinclair 1976) rather than agricultural commodities and regions.

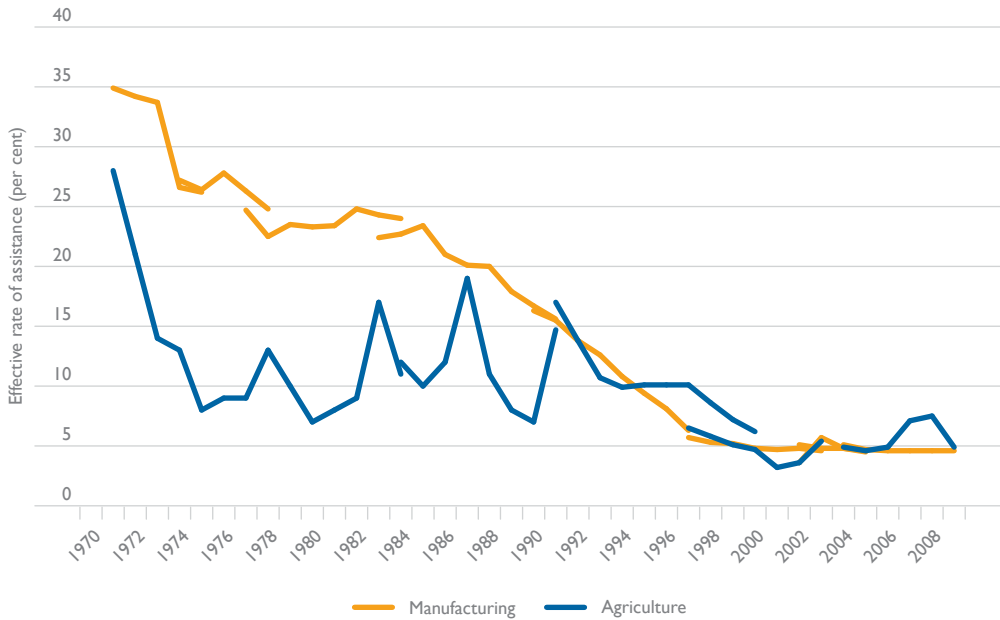
In the pre-trade liberalisation period from the 1920s to the 1970s, macro-economic and industry wide (protectionist) policies dominated the Commonwealth's approach. BTRE (2003b) argued that federally, policies were directed towards secondary and tertiary industries to support the diversification of industry but were not explicitly based on spatial objectives or were sporadic in nature.

The post-war emergence of Keynesian economic theory made governments more comfortable with an interventionist approach. It provided the theoretical underpinning for governments wishing to undertake big infrastructure projects (such as the Snowy Mountain Scheme).

The apparent failure of Keynesian economics in the late 1960s saw Australia's economy struggle in the 1970s and 1980s with slow output growth, inflation, rising unemployment and slow productivity gains (Productivity Commission 2005a, p.XIII). Governments tackled these issues with a widespread program of economic reforms which ranged from financial and trade liberalisation, a focus on raising productivity and the introduction of greater labour market flexibility.

Of particular note were the international trade reforms and floating of the Australian dollar which raised Australia's international competitiveness. As highlighted earlier the Federal Government introduced policies to improve efficiency and promote greater competition through tariff reductions. The Productivity Commission estimated the effective rate of assistance for the manufacturing and agricultural sectors (see Figure 6.11). Manufacturing industry's effective rate of assistance was estimated to have declined by around 30 percentage points from the 1970s to 2009. Agricultural assistance has also declined over the period but the sector has received sporadic assistance through tax concessions and subsidies in periods of drought or low commodity prices (Connolly and Lewis 2010). However while overall support has declined, the Productivity Commission states that it 'remains significant' (Productivity Commission 2007, p.VIII).

**Figure 6.11** Effective rates of assistance, 1970 to 2009



Note: Financial years.

Source: Reproduced from Connolly and Lewis (2010) citing the Productivity Commission.

An important policy initiative over the past decades was the National Competition Policy (NCP) introduced in 1995 (National Competition Council n.d.p.). The policy was designed to be far-reaching because of the perceived 'deteriorating performance' of the Australian economy (Productivity Commission 2005a, p.XIII). NCP covered both general and sector-specific reforms including reform of public monopolies and the requiring competitive neutrality for other government businesses (Productivity Commission 2005a). Consequently governmental services were rationalised and their operations 'mirrored those caused by the restructuring of the private sector' (Gerritsen 2000, p.124). This contributed to a major transformation in the way goods and services were provided<sup>34</sup>.

Overall, government policies moved from a more protectionist stance to stressing the importance of global competitiveness and market-oriented solutions to generate national and regional economic growth.

### Government regional development policies and interventions

Australian governments have a long history of public sector intervention to encourage economic and social development in regional locations (Tonts 2000), with state governments a key provider of social infrastructure (schools, hospitals and police stations). An important spatial approach adopted in the 1930s was the establishment of the Commonwealth Grants Commission to advise on the principle of 'fiscal equalisation', to equalise the capacity of each state to provide public services (Wilkinson 2003).

<sup>34</sup> Refer to Chapter 9 for more analysis into the privatisation and commercialisation of public enterprises and the effect on the provision of goods and services in regional areas.

The most obvious way governments have influenced the fortunes of towns and their local economies is through locational decisions. Defence is an example of this. The opening of defence facilities can provide development opportunities and provide a large part of the local industry base. Townsville is one such city, which during the Second World War became an important Pacific defence location for the air force and army. It 'is now home to Australia's largest contingent of defence personnel' (BTRE 2003b, p.79). From this foundation, combined with its traditional mineral processing base, Townsville quickly became an important service centre and port hub for northern Queensland.

The decision about where to produce defence materials (such as ship building, munitions factories) is another way in which government affects the development of towns and regional cities. Whyalla's population grew with its naval ship building role in the Second World War (as discussed in Chapter 5) (City of Whyalla n.d.p.). In Queensland, the provision of war supplies stimulated industrial development. Prior to the Second World War, the state's industries were focused on primary and related secondary production (Queensland Government 2012). The war stimulated food, timber and metal industries. Munitions were produced at Ipswich's rail workshops, Cairns manufactured landing craft and timber products, and meatworks were established at Mount Isa and Cape River, near Charters Towers to supply the military (Queensland Government 2012).

Another way in which government policy has affected settlement patterns over the last one hundred years has been the impact of laws relating to Indigenous Australians, particularly in the first half of the twentieth century. These early laws controlled movement—in some cases limiting it, and in others, forcing relocation. This has had a lasting impact, with some Indigenous settlements today having historical roots in old missions and government-established settlements. A discussion of the area around Tennant Creek is in Chapter 5.

Governments attempted to directly intervene in the development of cities, with Canberra the clearest example. The national capital was established by legislation. In the beginning the city developed slowly through the Great Depression and two World Wars. It was not until the 1950s that 'an active and political interest in the development of a planned Federal Capital re-emerged' (National Capital Authority 2010). To give impetus to this initiative 'a program of transferring public servants to Canberra, mainly from Melbourne' was introduced (National Capital Authority 2010)—a form of employment decentralisation. This transferred the function of federal governance to Canberra, to form the major component of the city's basic industry (representing nearly 30 per cent of the territory's workforce<sup>35</sup>). Another example was the establishment of irrigation areas which opened up previously unviable farming land, resulting in towns being established as service centres—notably Griffith, as discussed in Chapter 5.

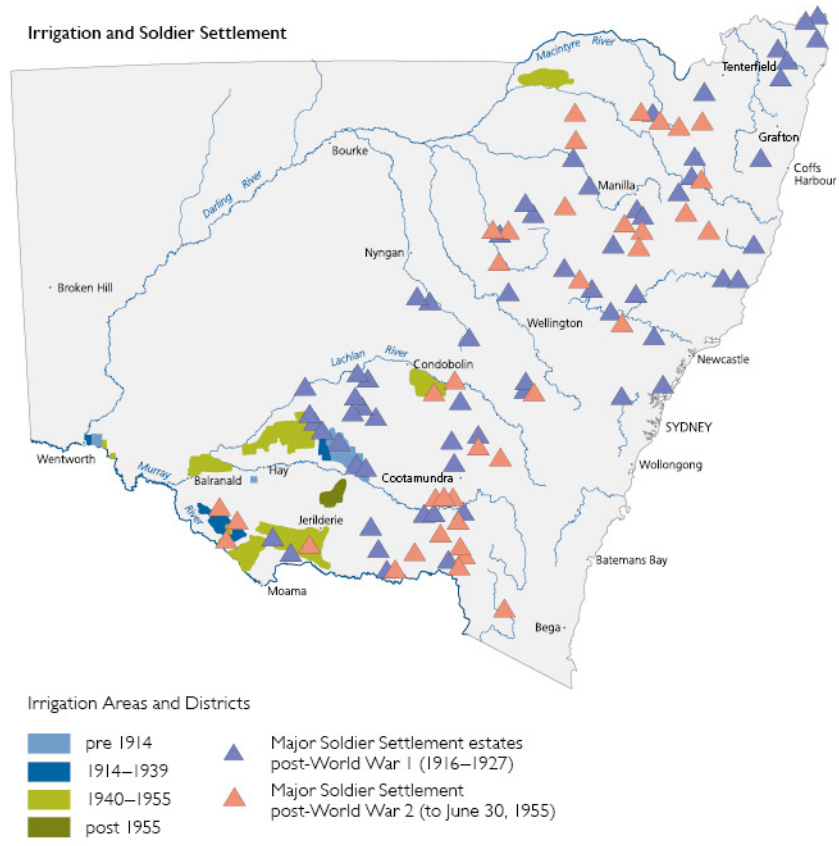
Other types of decentralisation of population or employment have been used by governments to actively influence Australia's settlement pattern and the industries within them. Initiatives include the Closer Settlement Acts (discussed in Chapter 3) and twentieth century programs such as the Soldier Settlement Schemes and the British Migrant Schemes (see Map 6.2). Analysis of the later Soldier Settlement Schemes and the British Migrant Schemes by Frost (1998) found they simply did not work. He provides five reasons for their failure: some of the soldiers returning from war were physically incapable of doing the labour; migrants from Britain did not have enough knowledge of Australian conditions to make a success of farming;

<sup>35</sup> The local government makes up 10 per cent of the persons working in government administration.

a drought occurred in the late 1920s; the prices of primary products crashed on the world market; and finally, many settlers did not have the capital backing needed to set up a new farm.

Many people were forced to walk away from the land and migrate to cities. While these schemes initially enabled towns to grow because of a greater concentration of people on the land, the subsequent loss of people from farms impacted on the towns' potential customer base.

**Map 6.2 Irrigation and soldier settlement program**



Source: Reproduced from Aplin (2011a).

One of the most cited cases of more recent decentralisation occurred during the Whitlam Government's term of office. The Department of Urban and Regional Development implemented a policy of population decentralisation by promoting a number of designated growth centres, as well as urban renewal projects in metropolitan cities.

Albury-Wodonga was one of these locations and provides an illustrative example of some of the difficulties of achieving economic and population growth through public sector intervention. The initial population target of 300 000 people by 2000 from a base of 37 931 residents in 1971 was unrealistic (BTRE 2003b). This target was incrementally revised downward over time to be 150 000 people and then 106 000 by the turn of the century, but at June 2011 the

combined Albury-Wodonga Local Government Areas population was 85 476 persons—still outside the targets (ABS 2013a).<sup>36</sup>

While some increase in population occurred, it was offset by wider exogenous changes in the economy. Falling employment in manufacturing during the 1970s made it difficult for regional areas to attract such business, especially when Australia's major cities were themselves struggling to retain these jobs.

These decentralisation initiatives are often regarded as failures, perhaps in part because of ambitious targets. However, it should be noted that some centres subject to these policies (such as Orange and Bathurst) did benefit from specific initiatives (for example, the relocation of government agencies), but the degree to which this has determined their overall growth and success as regional centres is unknown.

Government initiatives that tended to be more successful were those that fundamentally changed the economic characteristics of a region and worked with the underlying economic forces. In general, government was not able to significantly influence the overall settlement pattern, largely due to the fundamental nature of the forces effecting change.

## Overall impact

This chapter has discussed some major events and economic, social and technological changes throughout the twentieth century and considered how these may have impacted on settlement patterns.

Among the changes, those that contributed to prosperity and mobility are more likely to have contributed to settlement change. While large events—the wars and depression—might be expected to create change, there was not as much change in difficult times compared to prosperous ones. During the Great Depression, for example, the take-up of cars was limited by a lack of personal resources.

The Second World War led to some changes indirectly, such as better roads in some areas, stimulating manufacturing and bringing about a new immigration policy. Immigration is likely to have affected settlement patterns for three reasons: immigrants tend to prefer urban areas compared with people born in Australia, they contributed to population increase, and they provided a workforce for large infrastructure projects.

Industry has impacted on the spatial pattern through structural changes and technological advancements. These changes have reshaped how firms operate and in turn affected the location of activity, such as through productivity improvements and the increasing concentration of activity.

While technological change has affected every part of life, the widespread adoption of the car was a major contributor to reshaping settlement. Together with increasing wealth, motor vehicle ownership became ubiquitous and changed the nature of goods and services provision. Wealth also gave people more choices and opportunities, and provided a safety net; people have a greater ability to move if they are inclined. Pensions and superannuation have had a

<sup>36</sup> A superseded definition of Albury-Wodonga based on the ABS Statistical District has a population of 103 139 persons as of June 2011 (ABS 2013a).

similar effect. Related to this, the increase in the proportion of older Australians has made (often coastal, amenity-based) retirement areas more viable.

Government intervention, including large projects such as irrigation areas, the development of Canberra and of defence bases drove significant changes in particular areas. Overall government was not able to much influence the wider settlement pattern because of the fundamental nature of the forces creating change, although (particularly in the first half of the century), government policy greatly affected the settlement pattern of Indigenous Australians.

Many factors, some working together and some against one another, have shaped settlement patterns and the development of country towns. Given this, it is remarkable that there are such clear and consistent patterns of growth. Chapters 7 to 10 will examine these and try to explain the processes that caused them.