Australian Government

Department of Infrastructure, Transport, Regional Development and Local Government Bureau of Infrastructure, Transport and Regional Economics



Overview

- Australia's main cities (those over 100 000 population) are a significant driver of employment opportunities, contributing 81 per cent of national net job creation in the five years to 2006. Sixty-five per cent of national net job creation was due to the capital cities and 15 per cent to other main cities.
- Between 2001 and 2006, the three industries with the highest average annual growth in employment were mining, government administration and defence, and construction. Output of most industries grew faster than the respective industry employment except for the mining, government administration and defence, and electricity, gas and water supply industries.
- The industry structure of the main cities was relatively stable, evolving slowly during the period.
- Government administration was a major source of job creation in the main cities between 2001 and 2006. Government administration's national employment grew at an average annual rate of 7 per cent, making it one of the fastest growing industries, particularly in Melbourne, Hobart, Geelong and the Sunshine Coast.
- Strong growth in the construction industry reflects the expansionary cycle of local economies during the period. For Perth and the cities in Queensland the general construction industry was the largest source of jobs added.
- Employment in the business and financial sector was highly concentrated in the major capital cities in Australia (83 per cent), reflecting the agglomeration process and the large population base in these cities.
- This information sheet builds on BITRE's previous industry study (BTRE 2003) and highlights the dynamics of industries in Australia's main cities. This analysis of the industry structure of employment between 2001 and 2006 provides a valuable context for urban economies and informs regional development. The accompanying Industry Structure Database is based on ABS Census of Population and Housing data from the 1996, 2001 and 2006 censuses.

Background

How are urban centres changing in terms of employment by industry? The Bureau of Infrastructure, Transport and Regional Economics' (BITRE) study of Industry Structure tracks changes in Australian industry over time. Structural change, as shown in shifting industry structure of employment, affects a regional economy—shaping its income, its ability to grow, and its economic resilience. Structural change is a key factor in the social and spatial dynamics of an economy. This study analyses the shifting geography of employment in Australia—to expand the empirical base for regional development policy and programs.

This information sheet builds on the previous industry study, which included a database (BTRE 2003), and provides a snapshot of the recent state of employment by industry in Australia's main cities.

Main cities: definition

In line with Forster and Hamnett (2008), the main cities are defined as Australian urban centres of over 100 000 population, using ABS 2006 census data on the population of Statistical Divisions and Statistical Districts.

Over two-thirds of Australia's total population lives in these urban centres: the capital cities—Sydney, Melbourne, Brisbane, Perth, Adelaide, Hobart, Darwin, and Canberra—and the other main cities—Newcastle, Wollongong, Geelong, Gold Coast-Tweed Heads, Sunshine Coast, Townsville and Cairns. This information sheet accompanies an update of the BITRE database of employment by industry for 2006.

Box 1 Employment data from ABS Census of Population and Housing: coverage and caveats

The information on industry structure is based on ABS Census of Population and Housing data. The update of the accompanying Industry Structure Database was developed by BITRE from the Australian and New Zealand Standard Industrial Classification (ANZSIC) 1993 subdivision employment data from the 1996, 2001 and 2006 censuses. The information and analysis of industry structure in this information sheet covers changes mostly between 2001 and 2006. It focuses on the single concept of employed persons (aged 15 and over) by industry. The updated data were obtained from the 2006 population census based on each person's place of usual residence. While the ABS collected information on employment by place of work for 2006, place of work data was not available on a comparable basis over time.

The employment by industry data relies on census respondents providing an accurate description of their employment and the specific industry. The description was then matched with the ANZSIC industry classification structure. There are some cases where discretion was exercised that may result in some inconsistencies in the data. In addition, there are cases of unclear or unavailable information on employment, which were recorded as unstated or unclassified categories. For the purposes of this information sheet and database, the unstated/unclassified employment has been distributed proportionately over all industries, so that all employed persons are allocated to an industry. As estimates have been rounded, discrepancies may occur between sums of the component items and totals.

Box 1 Employment data from ABS Census of Population and Housing: coverage and caveats (continued)

Geographical units and coverage

The industry database update incorporates 2006 data from the Census of Population and Housing using Statistical Local Areas (SLA) and the BITRE working zones (previously called labour market regions). ABS census data on industry employment for all SLAs in Australia in 1996 and 2001 was concorded to match the SLA boundaries defined in the 2006 Australian Standard Geographic Classification (ASGC) to enable sound comparison. Since the data relates to where people live, not where they work, there are people enumerated in an SLA who commute to work in a different nearby SLA, particularly in Australia's main cities and the surrounds of regional centres. In cases where a significant proportion of people who live in an SLA work in another SLA, the employment data will be less meaningful. BITRE working zones are constructed to overcome this problem.

BITRE working zones are based on ASGC 2006 SLA boundaries. Working zones reflect the area within which people are willing to commute from their place of residence to their place of employment (BTRE 2003). BITRE has defined 391 working zones from approximately 1400 SLAs, based on commuting patterns revealed by the 2006 census. Offshore and migratory SLAs, and SLAs with zero or unknown number of employed persons, were excluded. For each working zone, the majority of employed residents work in the same region in which they live, and so employment by industry data provides a reasonable guide to the industry structure of the region's economy. Details of the working zone boundaries are presented in BITRE's Industry Structure Database.

A working zone was defined for each capital city. It typically included the capital city statistical division, plus any adjoining SLAs in which less than 70 per cent of employed residents worked in the SLA (i.e. more than 30 per cent commuted elsewhere). Similarly, SLAs which adjoined regional centres and had more than 30 per cent of employed residents commuting elsewhere, were included within the working zone for the regional centre. Similarly sized towns in close proximity with multi-directional commuting patterns led to a broader working zone being defined (for example Lismore, Casino, Ballina and surrounds). Such composite working zones have at least 75 per cent of employed residents working in the region.

Of the 391 working zones, 284 are stand alone SLAs and 107 contain multiple SLAs. Seven of the working zones cross state or territory borders (Albury-Wodonga and surrounds, Echuca and surrounds, Mildura and Wentworth, Swan Hill-Wakool and surrounds, Yarrawonga, Rutherglen, Corowa and surrounds, Gold Coast-Tweed, and Canberra and surrounds). The value added of providing working zone employment data is that each working zone forms a functional labour market as reflected in commuting patterns. The coverage of the database is all working zones in Australia. However, this information sheet highlights the significance of employment by industry in the 15 selected cities (main cities).

Industry employment rate of growth was mostly lower than the respective Gross Value Added growth

The Australian workforce is employed across 17 broad (1 digit) industries as defined in ANZSIC 1993 totalling to approximately 9.1 million employed persons in 2006. The labour force participation rate—the number of people who are either employed or looking for work as a proportion of all people aged 15 years and over—was 65 per cent. A mix of full-time and part-time employment opportunities provide flexibility in meeting the preferences of workers for work-life balance options. An estimated 71 per cent of employees were full-time workers in their main jobs and 29 per cent were part-time workers in their main jobs. The proportion of people in the labour force looking for work—the unemployment rate—was 5.2 per cent in 2006. Increases in the participation rate, reductions in unemployment, and population growth, resulted in employment growth of 9.9 per cent or 822 400 employed persons in the five years to 2006 (ABS 2007, 2009).

As shown in Table 1, between 2001 and 2006 national employment increased by an average annual growth rate of 1.9 per cent while the national economy, as shown by Gross Value Added (GVA), had a higher average annual growth rate of 3.3 per cent. The employment average annual growth for each industry was generally lower than the respective industry GVA growth, except for the mining, government administration and defence, and electricity, gas and water supply industries.

Nationally, the three industries with the highest average annual growth in employment (at 1 digit ANZSIC level) were mining (7.4 per cent), government administration and defence (6.1 per cent) and construction (4.9 per cent), offsetting declines in agriculture (–2.8 per cent), communication services (–2.2 per cent) and manufacturing (–0.1 per cent). The mining industry experienced strong job growth in recent years. However, the employment is concentrated in a relatively small number of locations. Mining employment increased from 76 600 to 109 400 employed persons and represented a very small share of national employment (1.2 per cent) in 2006.

	GVA	Employment	Sectoral share	of employment
	Average ann	ual growth	2001	2006
		(per ce	ent)	
Agriculture, forestry and fishing	1.6	-2.7	4.1	3.2
Mining	0.4	7.4	0.9	1.2
Manufacturing	0.1	-0. I	12.5	11.3
Electricity, gas and water supply	0.6	3.3	0.7	0.8
Construction	9.5	4.9	6.9	8.0
Wholesale trade	3.7	0.0	5.4	4.9
Retail trade	4.1	1.6	15.0	14.7
Accommodation, cafes and restaurants	3.1	1.2	5.1	4.9
Transport and storage	4.5	2.7	4.4	4.6
Communication services	5.4	-2.2	1.8	1.5
Finance and insurance	4.0	2.3	3.9	3.9
Property and business services	3.2	1.3	11.3	11.0
Government administration and defence	2.0	6.1	4.6	5.6
Education	1.4	2.8	7.3	7.6
Health and community services	4.6	4.1	9.9	11.0
Cultural and recreational services	3.7	0.0	2.5	2.3
Personal and other services	2.5	1.7	3.7	3.7
Australia	3.3	1.9	100.0	100.0
(thousands of employed persons)			8 282	9 1 0 4

Table 1 Gross Value Added and Employment for industry sectors, Australia 2001-06

Retail trade was a major employing industry which was accessible to new labour force entrants

In terms of the significance of the share of national employment in 2006 as shown in Table 2, the private services sector—defined as business and finance (15 per cent) and other private services (30 per cent)—dominated the workforce at just over 45 per cent. Other private services consist of retail trade (15 per cent), wholesale trade (5 per cent), accommodation, cafes and restaurants (5 per cent), cultural and personal services (6 per cent).

The retail trade industry (1 digit level) was the single largest employing industry in the Australian economy, employing 1.34 million workers nationally in 2006. Almost half of the employed persons were in Sydney, Melbourne and Brisbane, working in food retailing or personal and household good retailing (2 digit). Employment in the retail trade has limited skill requirements; hence it is accessible to a wide range of labour force entrants, particularly young workers. The retail trade industry is affected by the economic cycle, with interest rates, disposable income levels, consumer confidence and technological change impacting on the performance of the industry (DEEWR, 2008a).

Other main employing industries with over 1 million workers in 2006 included manufacturing, property and business services and health and community services equalling around 11 per cent of national employment in 2006.

Australia's main cities were a significant driver of employment opportunities

New job creation is the key to employment growth, but employment opportunities also arise from labour turnover. Australia's main cities contributed 81 per cent of national net job creation between 2001 and 2006 (666 100 employed persons). Sixty-five per cent of national net job creation was due to the capital cities (533 800) and 15 per cent to other main cities.

The economic geography of cities is integral to spatial patterns of economic growth which have emerged over time. Spatial concentration of industries and specialisation of cities reflects the advantage of economies of scale through agglomeration effects. Agglomeration effects may arise from favourable local labour markets, technological spillover and opportunities of trade presented by globalisation (Frenken and Bochma 2007). The geography of employment in Australia has become more complex as the main cities face the challenges of global competition. Different sectors in the economy respond differently to global competitive pressures depending on the cities' comparative advantage.

For all the main cities except Cairns, the employment growth rate was higher than the population growth rate between 2001 and 2006 as shown in Figure 1. The cities in Queensland had higher rates of average annual employment and population growth during the period. Employment growth in Brisbane (3.3 per cent), Gold Coast-Tweed (which crosses the state border of New South Wales—4.6 per cent), Sunshine Coast (5.4 per cent), Townsville (3.2 per cent) and Cairns (2.9 per cent) expanded faster than the rest of the main cities, with the private services sector as a significant driver of employment (Table 2). In contrast, Sydney had the lowest rate of employment growth and second slowest population growth (after Wollongong) among all the main cities. Since the majority of Australia's population and employment opportunities are concentrated in the main cities, this information sheet focusses on the industry structure of the major urban centres with more than 100 000 population in 2006 using BITRE working zones for the 15 selected cities (the main cities).



Figure 1 Employment and population rates of growth, 2001-06

The industry structure of cities evolved slowly over time

Structural adjustment in cities is often linked with deindustrialisation impacting negatively on employment. Competition, changing consumer preference and productivity growth, among other factors, continue to result in a relative decline in manufacturing. Displaced workers may not be able to acquire new jobs because of scarce employment and skill mismatches. As shown in Table 3, the main cities' manufacturing sector had negative annual growth (-0.4 per cent), whilst overall Australia's manufacturing declined by -0.1 per cent over the five-year-period to 2006.

Despite a continuing trend of job losses in Australian manufacturing (Productivity Commission 2003), structural change indexes as defined in Productivity Commission (1998) for the main cities showed small changes (index values of between 3 and 7) in the five years to 2006 as shown in Figure 2. A few larger capital cities, namely Sydney (structural change index of 3.6), Melbourne (3.9) and Brisbane (3.7) had limited structural change. These index values imply that less than 4 per cent of workers in 2006 would need to change industries to replicate the industry structure that existed in 2001.

The smaller the labour force in a city, the more volatile and typically less diversified is the industry structure, hence a relatively higher index of structural change is expected and observed for smaller cities such as Darwin and Cairns. Canberra had



Figure 2 Structural change indexes and employment, 2006

a relatively small labour force and the highest structural change index among the main cities (6.4). Newcastle, although having a relatively small size, underwent little structural change within the period. Newcastle's structural change indexes of 3, 4 and 10 for the periods of 2001–2006, 1996–2001 and 1991–1996 respectively, suggest that the larger change in industry structure, particularly the adjustment associated with declining manufacturing, had occurred prior to 1996.

Table 2 shows that in 2006, manufacturing, which used to be an important sector in the cities, accounted for 12 per cent or less of total employment in Sydney, Brisbane, Perth, and Newcastle; and between 13 and 14 per cent in Melbourne, Adelaide, Geelong and Wollongong. In contrast, Canberra as the capital city of the nation had the lowest proportion of employed persons in manufacturing (4 per cent). However, it had a relatively large government and defence workforce contributing 28 per cent of its total employment.

Melbourne and Brisbane contributed the highest net job creation

While 822 400 net jobs were added to the Australian economy between 2001 and 2006, some industries experienced a net job loss either nationally or in specific working zones. The current dataset for working zones at the 1 digit level identifies 891 700 jobs created and 69 300 jobs lost, netting to give an overall increase of 822 400 employed persons. In the main cities, it identifies 712 200 jobs created and 46 100 jobs lost, netting to give an overall increase of 81 per cent of the national job growth.

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Sectoral share and number of employed persons, main cities, 2006 Table 2

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Private services sector is defined as consisting of (1) business and finance (property and business, finance and insurance) and (2) other private services (wholesale trade, retail trade, accommodation, cafes and restaurants, cultural and recreational and personal and other services). Infrastructure sector is defined as consisting of construction, communications, transport, electricity, gas and water.

Total may not add up due to rounding. ف

Between 2001 and 2006 Melbourne contributed the highest share of the main cities' net jobs created (21 per cent), followed by Brisbane (20 per cent), Perth (14 per cent) and Sydney (12 per cent) whilst the rest of the 11 cities contributed between 1 and 7 per cent each of the total additional employed persons. The government and defence and health and education sectors made a significant contribution to employment creation in the cities and the rest of Australia (Table 3).

	Main cities	Balance of Australia	Australia
		(per cent)	
Agriculture, forestry and fishing	-3.3	-2.6	-2.7
Mining	8.7	6.2	7.4
Manufacturing	-0.4	1.6	-0.I
Electricity, gas and water supply	3.5	2.8	3.3
Construction	4.7	5.7	4.9
Wholesale trade	0.4	-2.0	0.0
Retail trade	1.5	1.8	1.6
Accommodation, cafes and restaurants	1.2	1.5	1.2
Transport and storage	2.8	2.1	2.7
Communication services	-2.3	-1.0	-2.2
Finance and insurance	2.2	3.4	2.3
Property and business services	1.2	2.6	1.3
Government administration and defence	6.3	5.5	6.1
Education	2.9	2.4	2.8
Health and community services	4.0	4.2	4.1
Cultural and recreational services	0.0	0.1	0.0
Personal and other services	1.7	1.4	1.7

Table 3Cities average annual growth of employment by industry, 2001-06

Government administration was a major source of job creation in the cities

Between 2001 and 2006, at the 2 digit level of industry, government administration was the single largest source of job creation in five of the capital cities (Table 4). Government administration's national employment grew at an average annual rate of 7 per cent, making it one of the fastest growing industries and increasing its workforce from 314 200 employed persons in 2001 to 438 400 in 2006. Government administration was one of the three top job creation industries for all of the main cities. In 2006, 78 per cent of the industry's workforce was employed in the main cities. Sydney (16 per cent), Melbourne (14 per cent) and Canberra and Brisbane (11 per cent each) had the highest shares of the industry's national employment.

Canberra's government administration industry accounted for 47 100 employed persons in 2006 with an average annual growth of 7 per cent between 2001 and 2006. This industry grew at even higher annual rates in Melbourne (9 per cent), Brisbane (8 per cent), Hobart (9 per cent), Darwin (8 per cent), Geelong (10 per cent), Gold Coast-Tweed (8 per cent) and Sunshine Coast (10 per cent).

Table 4 Cor	ıtribution to job	creation and loss, mair	ı cities by indus	try, 2001–06	
BITRE working zone	Net job creation (thousands)	Highest job creation	Change in employed persons (thousands)	Highest job loss	Change in employed persons (thousands)
Sydney	79.0	Health services	17.9	Machinery and equipment manufacturing	0.6-
Melbourne	141.7	Government administration	21.7	Textile, clothing, footwear and leather manufacturing	-10.0
Brisbane	135.5	Government administration	15.1	Other transport	-2.9
Adelaide	46.7	Community services	10.1	Machinery and equipment manufacturing	-2.7
Perth	95.9	General construction	10.4	Personal and household good wholesaling	4.1-
Hobart	10.9	Government administration	3.4	Health services	-0.6
Darwin	4.0	Government administration	2.0	Electricity and gas supply	-0.2
Canberra	20.1	Government administration	12.9	Business services	-1.8
Newcastle	22.1	Health services	2.8	Personal and household good wholesaling	-0.6
Wollongong	6.2	Education	1.4	Metal product manufacturing	-1.0
Geelong	10.9	Government administration	1.5	Textile, clothing, footwear and leather manufacturing	-0.6
Gold Coast-Tweed	45.9	General construction	6.0	Agriculture	-0.7
Sunshine Coast	27.6	General construction	3.1	Agriculture	-0.6
Townsville	1.1	General construction	1.6	Personal and household good wholesaling	-0.3
Cairns	8.5	General construction	1.4	Agriculture	-0.3

Contribution to job creation and loss, main cities by industry, 2001–06

2 digit level of ANZSIC Note: Figure 3 shows the rates of growth of three strong growth sectors for the main cities, namely infrastructure, health and education and government and defence. The growth of the health and education sector for the main cities was mostly higher than the main cities' total employment growth over the period. As shown in Table 4, the health services industry was the largest source of job creation in Sydney and Newcastle, whilst community services was the largest source in Adelaide and education was the largest source in Wollongong. In contrast to this mostly public sector led growth, Perth, Gold Coast-Tweed, Sunshine Coast, Townsville and Cairns had the highest net jobs added in the general construction industry reflecting the acceleration in local economies during the period, particularly in residential and other development activities.



Figure 3 Average annual growth of selected industries, 2001–06

Manufacturing was declining, but exceeds total employed persons in mining and agriculture

Table 4 depicts manufacturing (2 digit level) as the largest source of net job loss in Sydney (machinery and equipment manufacturing), Melbourne (textile, clothing, footwear and leather manufacturing), Adelaide (machinery and equipment manufacturing), Wollongong (metal product manufacturing), and Geelong (textile, clothing, footwear and leather manufacturing). Manufacturing employment in the cities has declined in relative and absolute terms over time, which can be attributed to some extent to increases in productivity, outsourcing, and also a change in preferences towards services as income rises (Productivity Commission 2003). Nevertheless the manufacturing industry remains a significant employing industry with a share of over 11 per cent of national employment in 2006 (Table 1). Manufacturing levels of output (as shown by the GVA) exceeded the combined output of the mining and agriculture industries and its employment was more than double that of the two primary industries equalling over 1 million employed persons in 2006.

Finance and business sector was heavily concentrated in Sydney, Melbourne and Brisbane

A key feature of an advanced or developed economy is a high share of the workforce employed in the production and delivery of services. In 2006, the private services sector (business and finance and other private services) comprised 47 per cent of the main cities' total workers or approximately 3.4 million employed persons. As shown in Table 2, in 2006, business and finance remained key employing industries in Sydney (21 per cent), Melbourne (18 per cent) and Brisbane and Perth (16 per cent of the respective city's total employment). Other private services (wholesale trade; retail trade; accommodation, cafes and restaurants; cultural and recreational services; and personal and other services) were also significant employing industries accounting for 31 per cent of total employment in the main cities (2.2 million employed persons).

Employment in the business and financial sector is highly concentrated in the major capital cities (83 per cent), reflecting the agglomeration process and the large population base in these cities. In 2006, the business services industry in Australia (2 digit) employed 855 200 persons with the majority (88 per cent) being employed in the main cities. Whilst the finance, insurance, and services to finance and insurance industries in Australia had 356 100 employed persons in 2006, the bulk were employed in Sydney (35 per cent), Melbourne (23 per cent), Brisbane (9 per cent) and Perth (7 per cent). The major capital cities of Sydney, Melbourne and Brisbane together had a concentration of 68 per cent of finance industry national employment. These three international gateways to Australia have large population bases which allow economies of scale and agglomeration effects to support their competitive advantage in providing a range of services. As the national business and financial centres, Sydney and Melbourne connect Australia with the global market.

The specific industries within the business and finance sector at the 2 digit level industry behaved differently between 2001 and 2006. Canberra suffered a decline in business services employment from 24700 in 2001 to 22 900 employed persons in 2006, consisting of a loss of jobs in scientific research, computer services, marketing and business management and other business services. Melbourne, Brisbane, Perth and to a lesser extent Sydney, experienced an expansion of employment in the finance, and services to finance and insurance industries, offsetting an employment contraction in the insurance subdivision (Sydney, Melbourne, Adelaide and Perth) and in business services (Sydney). In the same period, insurance industry employment (2 digit) has shown negative average annual growth rates in all capital cities except Brisbane. Canberra suffered the largest negative average annual growth (-14 per cent) in insurance employment over the period. Insurance industry employment is relatively small in Australia (71 200 employed persons) and is affected by the macroeconomic environment, financial deregulation, technology and global economic conditions (DEEWR 2008b). In contrast, the services to finance and insurance industry showed positive average annual growth of above 5 per cent in all capital cities.

Construction industry's strong growth indicated the expansionary cycle of local economies

Employment in the construction industry had one of the highest average growth rates (4.9 per cent at 1 digit level) between 2001 and 2006 reflecting the strength of the domestic economy. During the period the construction industry in Australia added 153 600 employed people. The construction industry is influenced by economic cycles and thus susceptible to skill shortages or oversupply for some skills as the economy fluctuates (DEWR, 2008c). The main cities had a 79 per cent share of the total employed persons in construction (1 digit), accounting for 572 200 employed persons in 2006.

Table 4 suggests that Queensland's cities—Gold Coast-Tweed, Sunshine Coast, Cairns and Townsville—experienced property booms, with their general construction industry (2 digit) having the highest net jobs created between 2001 and 2006. Figure 4 further shows the general construction industry in these cities growing strongly during the period, with average annual growth between 12.4 per cent and 13.5 per cent. The number of employed persons in this industry expanded in all the main cities. Sydney and Wollongong had the lowest average annual growth at 4.1 per cent and 4.2 per cent respectively. A turnaround in the Tasmanian economy in the early 2000s created a substantial increase in its construction industry (BITRE 2008) resulting in a high growth of general construction employment in Hobart (12.2 per cent). Brisbane (9.6 per cent), Perth (9.7 per cent) and Darwin (9.3 per cent) had a similar experience in construction employment growth reflecting the strength of the local economies.



Figure 4 General construction industry

Melbourne's industry specialisation

Melbourne is an example of the ways agglomeration process may benefit the city's economy. Figure 5(a) and 5(b) present Melbourne's spatial structure of employment by industry in 2006. The maps reveal spatial specialisations of industry and employment and reflect the different functions of various parts of the city. They provide snapshots of urban structure in 2006 showing industry specialisations and the SLA's largest employing industry. Unlike the rest of this information sheet, the analysis is based on place of work data.

Figure 5(a) Major industry specialisation for Melbourne's SLAs, 2006





Figure 5(b) Largest employing industry for Melbourne's SLAs, 2006

Source: Derived and analysed from BITRE industry database, Place of Work dataset, SLAs in Melbourne working zone 2006 Note: Specialisation of industry covers 6 top industries, so SLAs with specialisation in other industries do not appear in Figure 5(a).

The top specialisation for each SLA can be calculated using location quotients, which compare the industry's local share of employment to its national share of employment. Figure 5(a) shows the top industry specialisation for Melbourne SLAs. For the manufacturing industry the location quotients reveal a concentration mainly in the outer north, in the west and in the outer east. Figure 5(b) shows there were 25 Melbourne SLAs in which manufacturing was the largest employing industry. These were primarily in the outer south-east, northern and western suburbs. Specialisation in manufacturing coincided with the largest employing industry in Hume–Broadmeadows, Brimbank–Sunshine, Kingston–North, Greater Dandenong–Dandenong, Greater Dandenong Balance, and Knox–North-East.

Property and business services was the largest employing industry in 23 SLAs and was concentrated in the inner part of Melbourne. However, property and business services was not the top specialisation for any individual SLAs.

Melbourne's retail trade structure was spread among the middle and outer suburban SLAs. The top specialisation was retail in Moonee Valley–West, Banyule–North, Hume–Sunbury, Manningham–West, Knox–North-West, Maroondah–Ringwood, Stonnington–Malvern, Casey–Berwick and Casey–Cranbourne. The 28 SLAs where the largest employing industry was retail trade are shown in Figure 5(b). All of the SLAs with a retail trade specialisation also had this as the largest employing industry except for Casey–Berwick and Casey–Cranbourne where retail was the second largest employing industry in the SLA and Stonnington–Malvern where retail was the third largest employer.

Construction was the major employer in Nillumbik Balance, an urban fringe location. Health and community services was the primary employer in Banyule–Heidelberg in the north, whilst agriculture, forestry and fishing was the major employer in Cardinia–South, an urban fringe area of Melbourne.

A cluster of cultural and recreational services' specialisation can be found in the southern suburbs extending from Melbourne–Southbank-Docklands to Bayside–South.

Figures 5(a) and 5(b) highlight the diversity of functions that exist within a major city, with different suburbs specialising in specific industries and contributing in distinct ways to the operation of the city's economy.

Concluding remarks

The geography of employment in Australia has become more complex and this is reflected in changes in urban structures in terms of the commuting patterns, industry location and networks. This information sheet of changes in industry structure explores the dynamics of significant industries in urban economies. The overall structure of urban economies tended to evolve fairly slowly over the five-year-period to 2006. There were no main cities where more than 7 per cent of jobs changed industries. However, particular industries grew significantly (for example mining) or declined (for example communication) in terms of employment between 2001 and 2006.

This updated information highlights recent developments in employment by industry in Australia's main cities between 2001 and 2006. It is important to interpret the historic data on the industry structure of urban economies cautiously. The recent global economic downturn will impact the industry structure of Australia's main cities. Economic shocks often induce structural change. Inefficient firms or industries are forced to adjust or exit the market creating changes in employment by industry. In the aftermath of a shock, industries and cities are expected to adjust and recover. The period of adjustment will depend on each industry or city's capacity, which is determined by its competitiveness. A highly competitive firm, industry or city will expand and attract labour. An industry or city which is less competitive will be at risk of being left behind and facing problems of social dislocation. Skilled workers may migrate to other cities offering better opportunities whist the resulting availability of cheaper housing will attract people with looser connections to the labour force, hence compounding socioeconomic disadvantage of the location.

The main cities accounted for 81 per cent of the net employment created in the country over the five years to 2006. Most of the additional employment was in the capital cities, reflecting the significance of the dynamics of capital cities' industries to the national economy. Sydney, Melbourne and Brisbane are an example of the ways cities are central to the national economy through the spillover effects of agglomeration. The growth of cities is linked to industry structure, as the spatial concentration of industries and specialisation of cities can generate agglomeration effects which in turn generate further dynamic process in cities economies. Sydney, Melbourne, and Brisbane have significant concentrations of globally linked industries - particularly in the business and finance sector and also in other private services. The roles of the main cities in the national economy are based on their principal functionality in urban hierarchies in global competition. Thus the performance of the national economy centres on the capacity and performance of the main cities in the global market. However, the increased agglomeration also has costs, with increased population presenting issues of congestion, social and environmental challenges.

The update of BITRE's Industry Structure Database which accompanies this information paper presents data on recent changes which were taking place in cities as well as in regional Australia. This information is publicly available on the BITRE website <www.bitre.gov.au> and provides a base for analysis underpinning regional development and program formulation for local economies. Analysis of BITRE's Industry Structure Database will also help to increase knowledge of the geography of employment in Australia.

Box 2 Industry database content

- Metadata:
 - Census data, limitations, methodology and classifications
 - Regions: statistical local areas (SLAs), local government areas (LGAs) and BITRE working zones
 - The BITRE working zone classification
 - ANZSIC industry classification
- 2006 data on the industry structure of employment for working zones
- 2001 data on the industry structure of employment for working zones
- 1996 data on the industry structure of employment for working zones
- Changes in industry structure between 1996, 2001 and 2006 for working zones
- 2006 data on the industry structure of employment for SLAs
- 2001 data on the industry structure of employment for SLAs
- 1996 data on the industry structure of employment for SLAs
- Changes in industry structure between 1996, 2001 and 2006 for SLAs
- 2006 data on the industry structure of employment for SLAs, by Place of Work

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ISSN 1440-9593 June 2009/Infrastructure 08472

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Desktop publishing by Paul Gunning

Printed by New Millenium

Typset in Optima Ltd Std and Gill Sans MT [Mac]

Paper 113gsm Sovereign Silk