ECONOMIC CONTRIBUTION OF THE NSROC REGION

December 2004

Northern Sydney Regional Organisation of Councils
nsroc

Prepared by

Centre for International Economics
Canberra & Sydney

The Centre for International Economics is a private economic research agency that provides professional, independent and timely analysis of international and domestic events and policies.

The CIE's professional staff arrange, undertake and publish commissioned economic research and analysis for industry, corporations, governments, international agencies and individuals. Its focus is on international events and policies that affect us all.

The CIE is fully self-supporting and is funded by its commissioned studies, economic consultations provided and sales of publications.

The CIE is based in Canberra and has an office in Sydney.

CANBERRA

Centre for International Economics
Ian Potter House, Cnr Marcus Clarke Street & Edinburgh Avenue
Canberra ACT

GPO Box 2203
Canberra ACT Australia 2601

Telephone +61 2 6248 6699 Facsimile +61 2 6247 7484
Email cie@TheCIE.com.au
Website www.TheCIE.com.au

SYDNEY

Centre for International Economics
Level 8, 50 Margaret Street
Sydney NSW

GPO Box 397
Sydney NSW Australia 2001

Telephone +61 2 9262 6655 Facsimile +61 2 9262 6651
Email ciesyd@TheCIE.com.au
Website www.TheCIE.com.au

Contents

1 Introduction

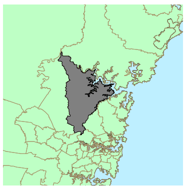
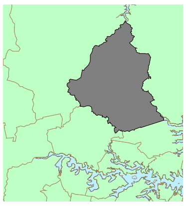
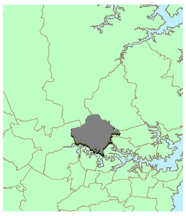
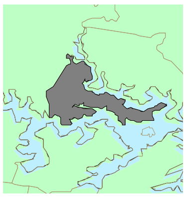
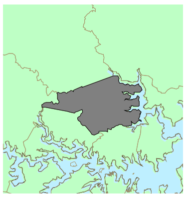
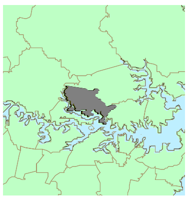
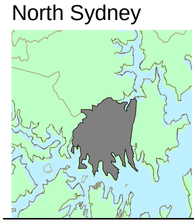
THE NORTHERN SYDNEY REGION also known as 'the NSROC region' encompasses the seven Local Government Areas (LGAs) of Hornsby, Hunter's Hill, Ku-ring-gai, Lane Cove, North Sydney, Ryde and Willoughby. NSROC spans more than 680 square kilometres (sq km), with a population of almost 530 000.

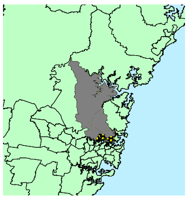
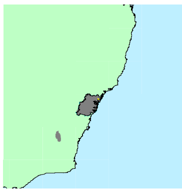
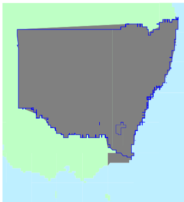
CIE has been commissioned by North Sydney Council, in partnership with the Northern Sydney Regional Organisation of Councils (NSROC Organisation), to undertake a study of the economic contribution of the NSROC region. The NSROC Organisation seeks to understand the role played by the region in the Sydney, New South Wales and national economies.

Our analysis of the NSROC region's economic contribution uses a comparative framework to place the region's activity in perspective. The analysis is structured around providing answers to five key economic questions:

- What is the economic contribution of the region?
- What is the nature of economic activity in the region?
- How many jobs are there in the NSROC region and what is the structure of the labour market?
- How is the NSROC region's economic contribution translated into its well being?
- How well supported is the region in terms of services and infra-structure?

The majority of data in this study is sourced from the Australian Bureau of Statistics (ABS) which provides information at various statistical levels that is consistent and provides a framework for comparison. NSROC regional data is based on the ABS Statistical Local Area which is broadly equivalent to a LGA for the seven councils examined in this study. Data for Sydney is based on the ABS Statistical Division (SD) of Sydney. The Sydney SD differs from the area of Sydney used in the Metropolitan Strategy being developed by the Department of Infrastructure, Planning and Natural Resources, as it includes Gosford and Wyong. Information about New South Wales is at the state level.

Region	
Hornsby 	▪ Population: 154 563 people ▪ Area: 510 sq km ▪ Population density: 303 people per sq km
Ku-ring-gai 	▪ Population: 108 212 people ▪ Area: 82 sq km ▪ Population density: 1320 people per sq km
Ryde 	▪ Population: 99 306 ▪ Area: 40 sq km ▪ Population density: 2456 people per sq km
Hunter's Hill 	▪ Population: 13 543 ▪ Area: 6 sq km ▪ Population density: 2257 people per sq km
Willoughby 	▪ Population: 62 869 ▪ Area: 22 sq km ▪ Population density: 2858 people per sq km
Lane Cove 	▪ Population: 32 111 ▪ Area: 11 sq km ▪ Population density: 3058 people per sq km
North Sydney 	▪ Population: 59 226 ▪ Area: 10 sq km ▪ Population density: 5923 people per sq km

Region	
NSROC 	▪ Total population: 529 830 ▪ Total area: 681 sq km ▪ Population density: 778 people per sq km
Sydney 	▪ Population: 4 million ▪ Area: 12 407 sq km ▪ Population density: 322 people per sq km
New South Wales 	▪ Population: 6.4 million ▪ Area: 801 431 sq km ▪ Population density: 8 people per sq km

Source: ABS (2002); ABS census data; DLG (2004).

2 Profile of NSROC's economic contribution

THE NSROC REGION had a resident population of 529 830 at the end of June 2002 (DLG 2004). Its population has grown by an average of 1 per cent per annum over the last five years. This is similar to the five year average population growth experienced in Sydney and the state of 1.1 per cent and 1.2 per cent respectively. The NSROC region has a relatively high population density, with 778 people per sq km compared to 322 people per sq km on average in Sydney.

NSROC – making a significant contribution to GDP

The NSROC region's gross regional product (GRP) in 2003-04 is estimated to be around $32 billion. A break up of this GRP by LGA is provided in table 2.1.

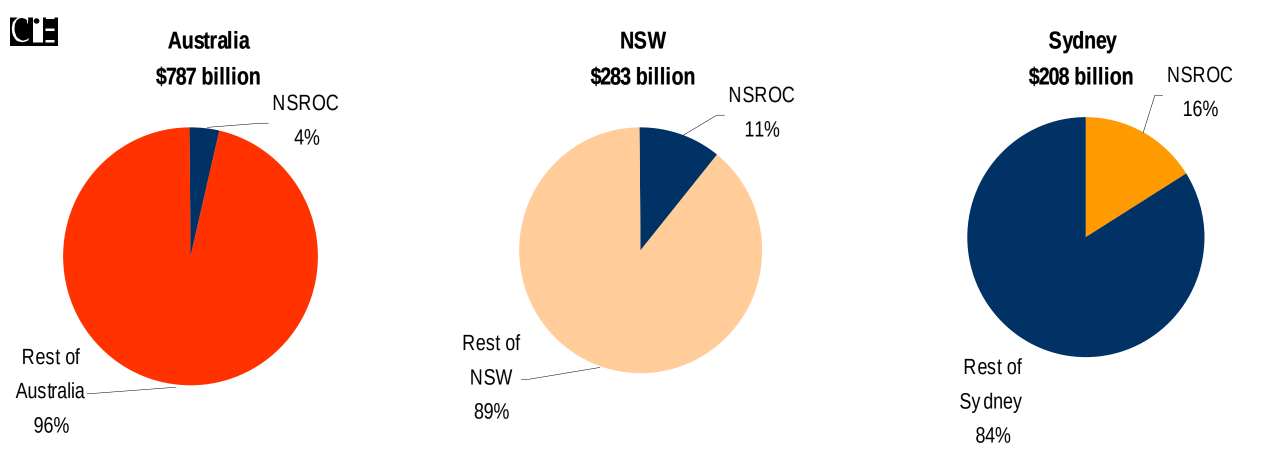
2.1 **Estimated gross regional product by LGA** 2003-04

Region	*GRP*
	$ billion
Hornsby	7.2
Hunter's Hill	0.6
Ku-ring-gai	5.4
Lane Cove	2.5
North Sydney	6.5
Ryde	6.0
Willoughby	4.3
NSROC	32.5

Sources: CIE estimates; ABS (2004); ABS census data.

CIE analysis indicates that the NSROC region is a highly productive region, producing a significant proportion of the output from Sydney and gross state product (GSP) for New South Wales. The NSROC region is estimated to contribute approximately 16 per cent of Sydney's GRP (of $208 billion), 11 per cent of New South Wales' estimated GSP (of $283 billion) and 4 per cent of national output or gross domestic product (GDP) (of $787 billion) (see chart 2.2).

2.2 Economic contribution of NSROC by region



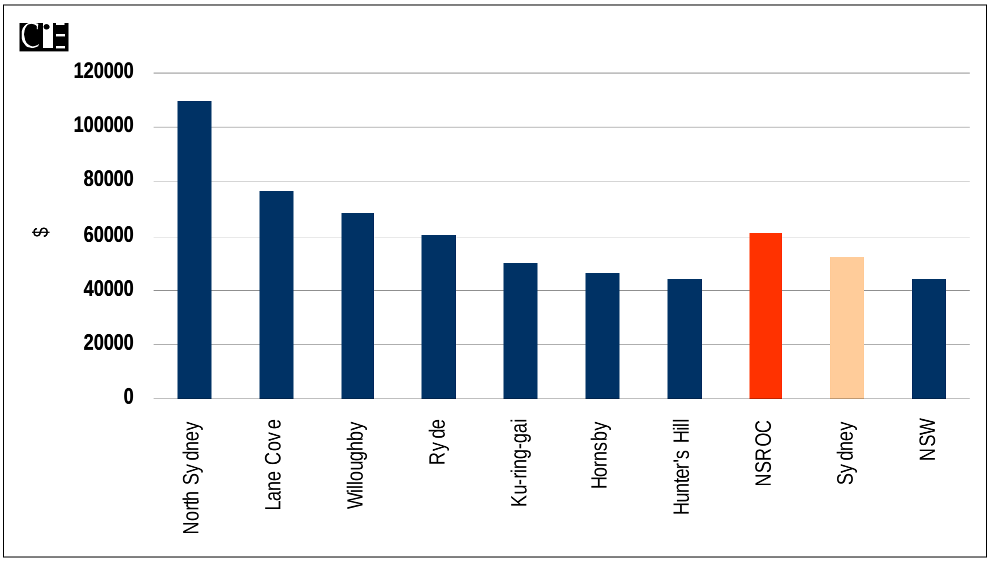
Data sources: CIE estimates; ABS (2004); ABS census data.

The NSROC region produces a sizeable 11 per cent of the state's GSP, despite only accounting for 8 per cent of its population and less than 1 per cent of its total area (ABS census data, ABS 2002 and NSROC Organisation 2002).

In terms of gross product divided by the population, Sydney's GRP per capita is above the states' average GSP per capita (chart 2.3). Reflecting the high level of economic activity in the northern Sydney region, on average NSROC's estimated GRP per capita is higher than Sydney's. Average GRP per capita for the NSROC region is nearly $62 000 compared to Sydney's $52 000.

It should be noted that most of the figures for NSROC regional output and productivity reported in this section are estimates. While information on gross product at the national and state level is compiled and analysed by

2.3 Estimated GRP/GSP per capita 2003-04



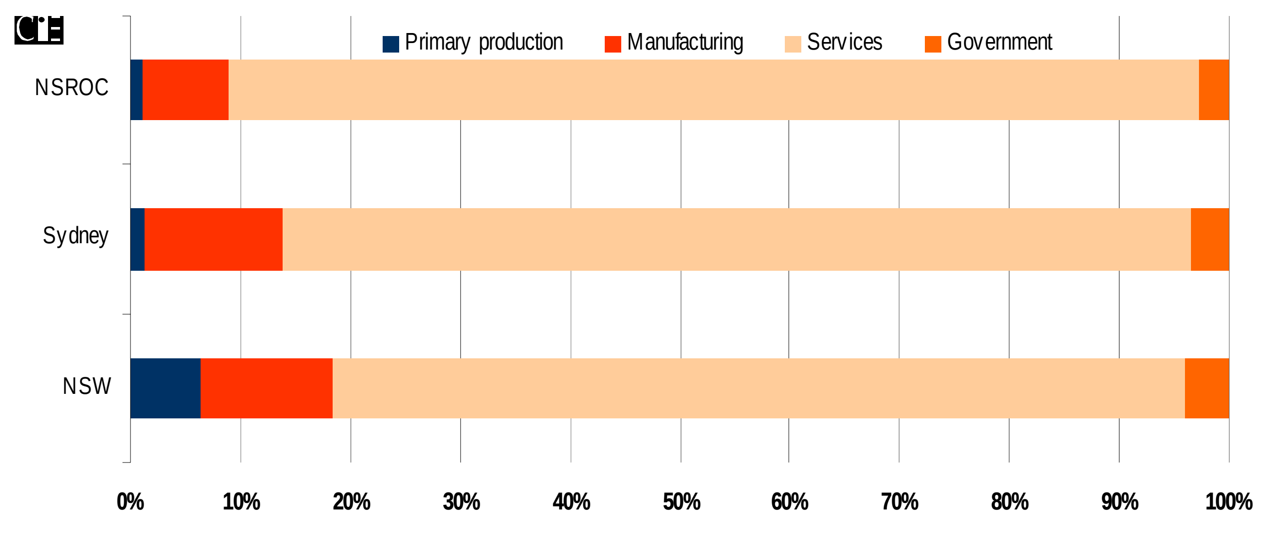
Data sources: CIE estimates; DLG (2004); ABS (2002).

the ABS, this data is not available at the regional level. Gross product at the regional level has been estimated by apportioning Australia's GDP by industry based on the number of people employed in each LGA by industry sector.

NSROC's economic activity is services-based

The NSROC region economy is heavily services oriented. Out of the four broad industry groupings[1] of primary production, manufacturing, services and government, services make the largest contribution to GDP in New South Wales, Sydney and the NSROC region. However, in the NSROC region, the services sector is an even more dominant sector of its economy. The services sector accounts for 88 per cent of the NSROC regional economy, 83 per cent of Sydney's economy and 78 per cent of the New South Wales economy. The structure of the NSROC region, Sydney and NSW economies is depicted in chart 2.4.

2.4 **Contribution to GDP by industry grouping**



Data sources: CIE estimates; ABS (2004); ABS census data.

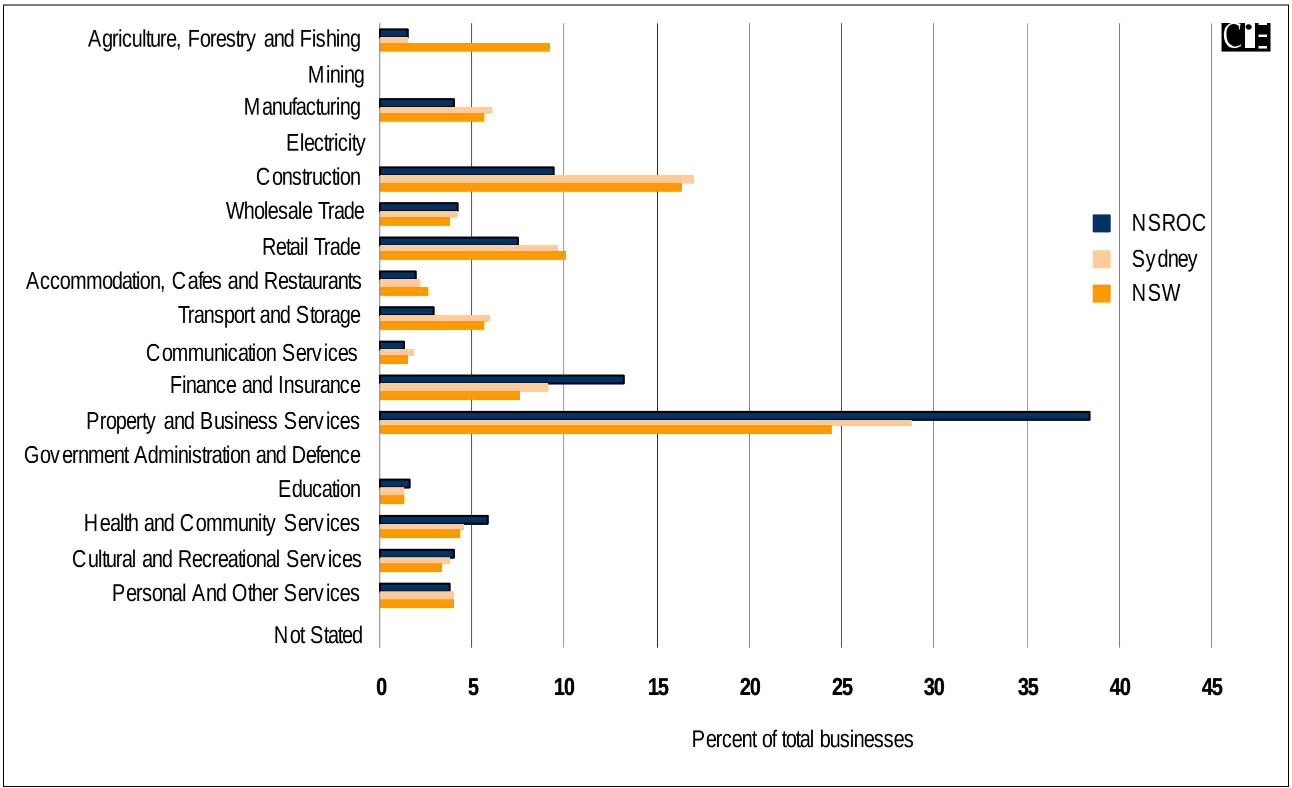
[1] The four industry groupings combine all industries in the ABS system of national accounts. The ABS system of national accounts uses the industry classification system of the Australian and New Zealand Standard Industrial Classification 1993 (ANZSIC). The four industry groupings above combine national accounts data for industries at the ANZSIC Division level (the broadest level), which are set out in Appendix A.

Most NSROC firms are in the property and business services sector

The property and business services sector is the most significant industry in the NSROC region. The property and business services sector comprises a variety of activities such as property development, real estate agency, scientific and technical research, computer services, legal and accounting services, and marketing and business management services. Based on the ABS Business Register, out of approximately 74 550 businesses operating in the NSROC region, 38 per cent are in the property and business sector (ABS 2004). The next largest industry sector in the NSROC region by number of businesses is finance and insurance, with 13 per cent or nearly 10 000 enterprises. Construction, retail trade and health and community services are the next most important industry sectors, comprising 9 per cent, 7 per cent and 6 per cent respectively of all business. The number of businesses in various industries by region[2] is demonstrated in chart 2.5.

The dominance of the property and business services industry is consistent within all of the LGAs in the NSROC region. This sector accounts for a

2.5 **Businesses operating by industry**



Data source: ABS census data.

[2] Further detail on operating businesses in each LGA of the NSROC region compared to Sydney and the state is provided in Appendix B.

significant majority of all businesses. Maintaining the theme about the importance of the services sector, finance and insurance is the second largest industry in each LGA except for Ryde and Hornsby which have a greater number of construction businesses.

Although property and business services dominate the number of businesses in New South Wales and Sydney, the pattern is more prevalent in the NSROC region. Some 38 per cent of businesses are in this category in the NSROC region compared to 29 per cent for Sydney and 24 per cent for New South Wales. As mentioned above, the finance and insurance sector is the NSROC region's second largest industry. In contrast, construction is the second most important industry to Sydney and New South Wales.

Emerging industries

New South Wales and Sydney in particular are home to a number of world leading biotechnology research bodies and companies – and NSROC is part of this. Some of the biotechnology organisations operating in this region include Macquarie University Research Park, CSIRO Riverside Corporate Park and BioMed North (Department of State and Regional Development (DSRD) 2004). BioMed North seeks to bring together research groups working in the northern corridor of Sydney to share ideas on priority research areas and key platform technologies (DSRD 2003). It also draws hospitals, industry, and investors together to assist in the commercialisation of research outputs.

NSROC is well known for housing a significant cluster of Information and Communications Technology (ICT) businesses. A recent review by one of Australia's main ICT industry bodies, the Australian Information Industry Association (AIIA) (2002) confirms this. It found that the largest proportion of successful[3] small and medium ICT firms across Australia were located in the 'Northern Sydney Corridor', stretching from Ryde to North Sydney.

Labour market strengths in NSROC

Employment

The NSROC region employs a significant proportion of the Sydney and state workforce. In 2001, 9 per cent of the state's and 14 per cent of Sydney's

[3] The AIIA judged companies to be successful based on their achievement of industry and government awards and revenue.

workforce were in the NSROC region (ABS census data). There were a total of 245 771 NSROC residents who were either full-time or part-time employed at the last census. The portion of part time workers in the employed workforce in 2001 was similar for NSROC and Sydney at 31.3 per cent and 30.3 per cent respectively. In New South Wales as a whole, part-time work accounts for a relatively lower proportion of total employment at 26.2 per cent.

The NSROC region has enjoyed significant employment growth over the past decade. Between 1991 and 2001, the number of people employed in the region expanded by 13 per cent. This compares to 16.7 per cent for Sydney and 14 per cent for New South Wales. Within the NSROC region, Hornsby, North Sydney and Willoughby, experienced employment growth above the Sydney and state averages, at 20.2 per cent, 17.1 and 17.5 per cent respectively (table 2.6).

The majority of employment growth for the NSROC region, Sydney and New South Wales was in part-time work. In the NSROC region part-time work increased by 32.8 per cent and full time work increased by 8.8 per cent, compared to Sydney which had a 42.1 per cent increase in part-time work and an 11.2 per cent increase in full time work. At a state level, part-time and full-time employment expanded by 43.6 per cent and 8 per cent respectively.

2.6 **Current employment by region and trends over time**

Region	*Full time employment*	*Part time employment*	*Portion of part time to full time*	*Total employment growth*[a]
	no	no	per cent	per cent
Hornsby	46 865	23 698	33.6	20.2
Hunter's Hill	3 662	1 751	32.3	12.2
Ku-ring-gai	28 478	16 996	37.4	4.3
Lane Cove	11 314	4 594	28.9	10.4
North Sydney	26 433	7 680	22.5	17.1
Ryde	31 711	13 774	30.3	7.5
Willoughby	20 358	8 457	29.3	17.5
NSROC	168 821	76 950	31.3	13.0
Sydney	1 227 661	532 740	30.3	16.7
NSW	1 805 433	858 483	26.2	14.6

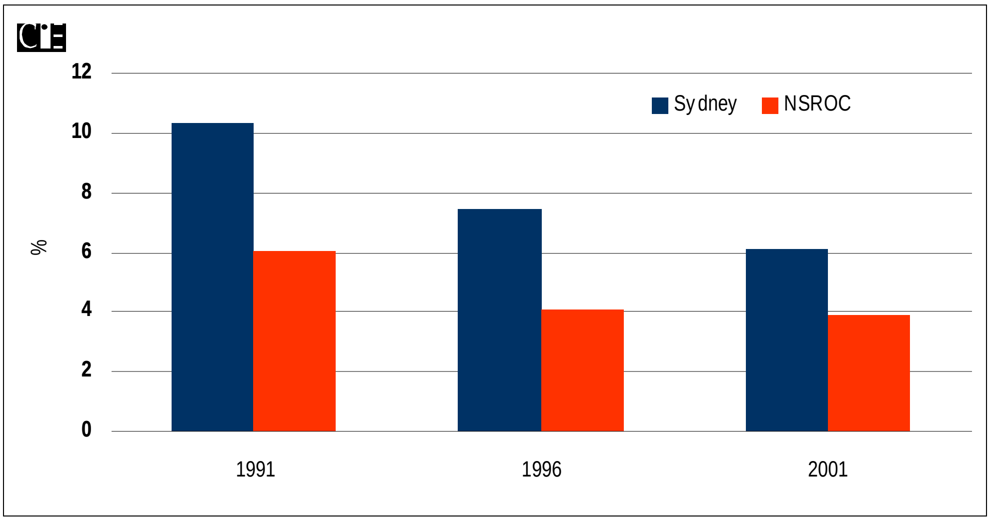
a 1991 to 2001.

Source: ABS census data.

Unemployment in NSROC is lower than the state average

Overall employment levels and employment growth in the NSROC region have been sufficient to result in a low unemployment rate. The NSROC region has experienced a much lower unemployment rate than Sydney

2.7 **Unemployment rate by region** 1991–2001

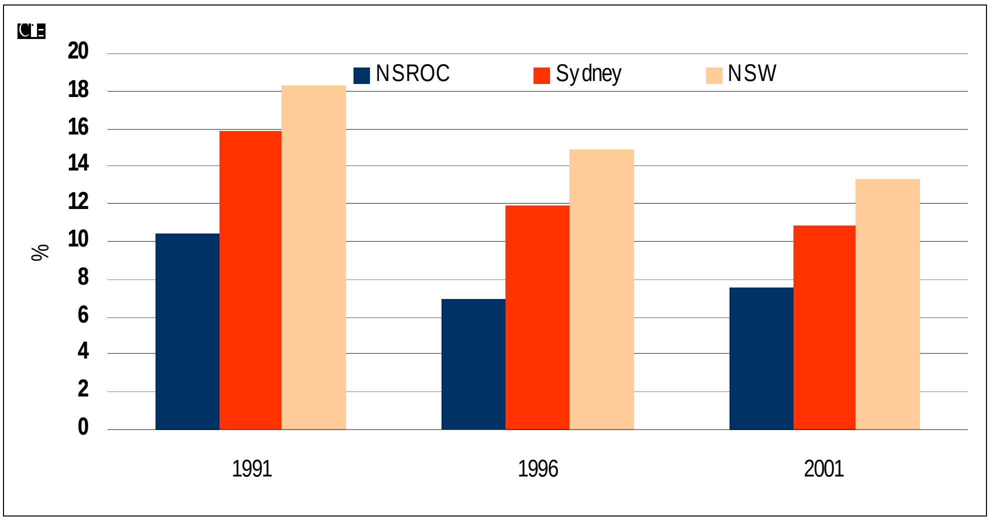


Data source: ABS census data and CIE calculations.

over the period spanning 1991 to 2001 (chart 2.7). Unemployment in the NSROC region was around 3.9 per cent in 2001 compared to 6.1 per cent in Sydney. The relatively small decrease in the unemployment rate between 1996 and 2001 compared to Sydney is indicative of the higher proportion of the NSROC labour force who have been employed over this time. At the beginning of the 1990s, 94 per cent of NSROC's labour force were employed relative to 90 per cent of Sydney's labour force (ABS census data).

Youth unemployment in the NSROC region is also lower on average than in Sydney and the state as a whole. In 2001, youth unemployment was 7.6 per cent in the NSROC region, which was significantly lower than in Sydney or New South Wales at 10.9 and 13.3 per cent respectively (chart 2.8). Since 1991, youth unemployment in the NSROC region has been consistently lower than in either Sydney or New South Wales. This may reflect the higher levels of education typically achieved by NSROC youth, or the capacity of NSROC businesses to generate youth employment opportunities.

2.8 **Youth unemployment by region**[a]



[a] 15 to 24 years old

Data source: ABS census data.

Property and business services — providing jobs for the region

Industries in the NSROC region provide jobs for just over a quarter of a million people. The property and business services sector provides the greatest source of employment in the NSROC region[4], with almost 22 per cent of all jobs or 55 000 positions. The retail trade, health and community services industries are the next most important industries in this region based on employment.

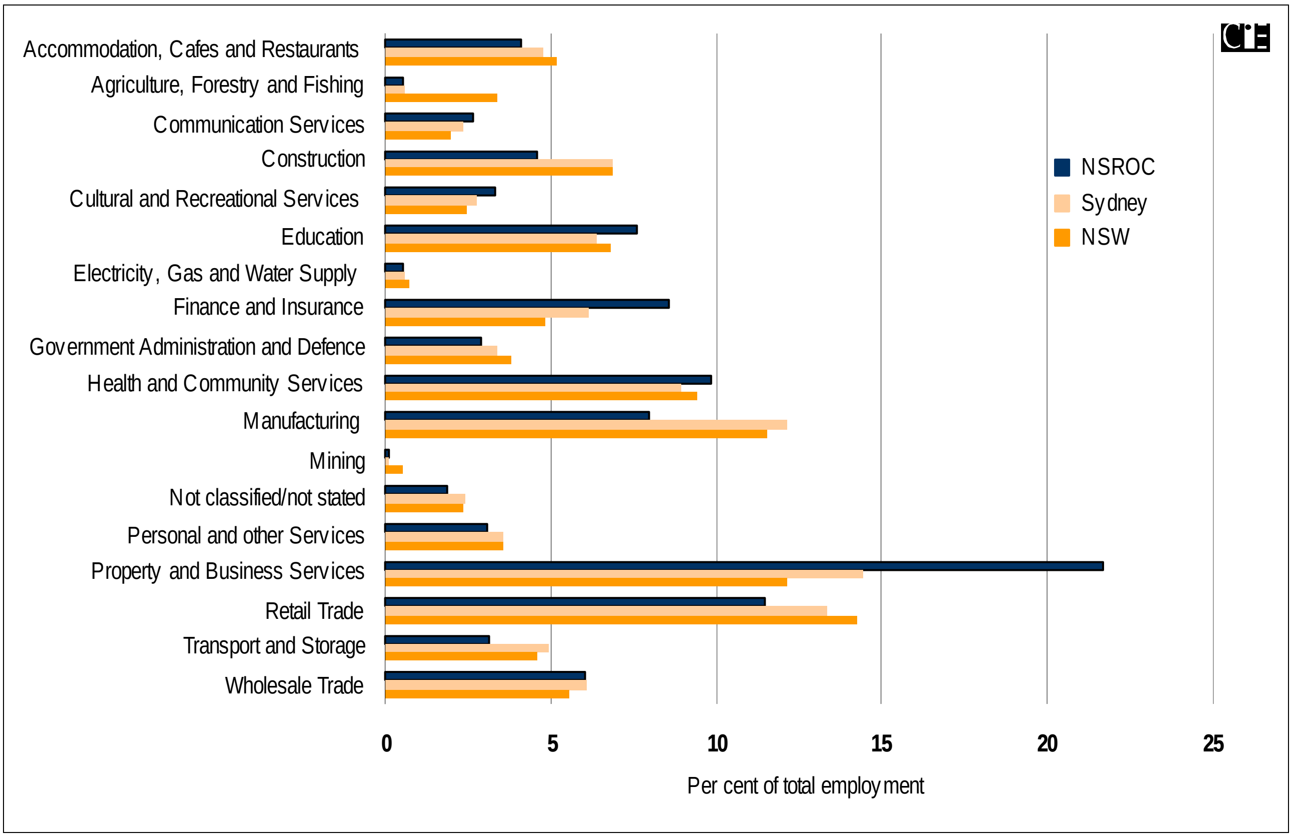
Similar to the discussion above on the number of businesses, the property and business services sector provides a much greater proportion of total jobs for the NSROC region at 22 per cent compared to Sydney at 14 per cent and New South Wales at 12 per cent. For Sydney, the retail trade and manufacturing industries each provide almost the same number of jobs as property and business services (chart 2.9).

Over the past decade, the industry profile of the NSROC region[5] in terms of employment has not changed a great deal. The most significant change has been the increased importance of the property and business services industry. The property and business services industry has been a growing source of jobs. In 1991, it provided 35 000 jobs or 15.7 per cent of total

[4] Further detail on employment by industry in each LGA of the NSROC region compared to Sydney and the state is provided in Appendix B.

[5] See Appendix B for detail on industries of employment in each LGA of the NSROC region over time compared to Sydney and the state.

2.9 **Employment by industry** 2001



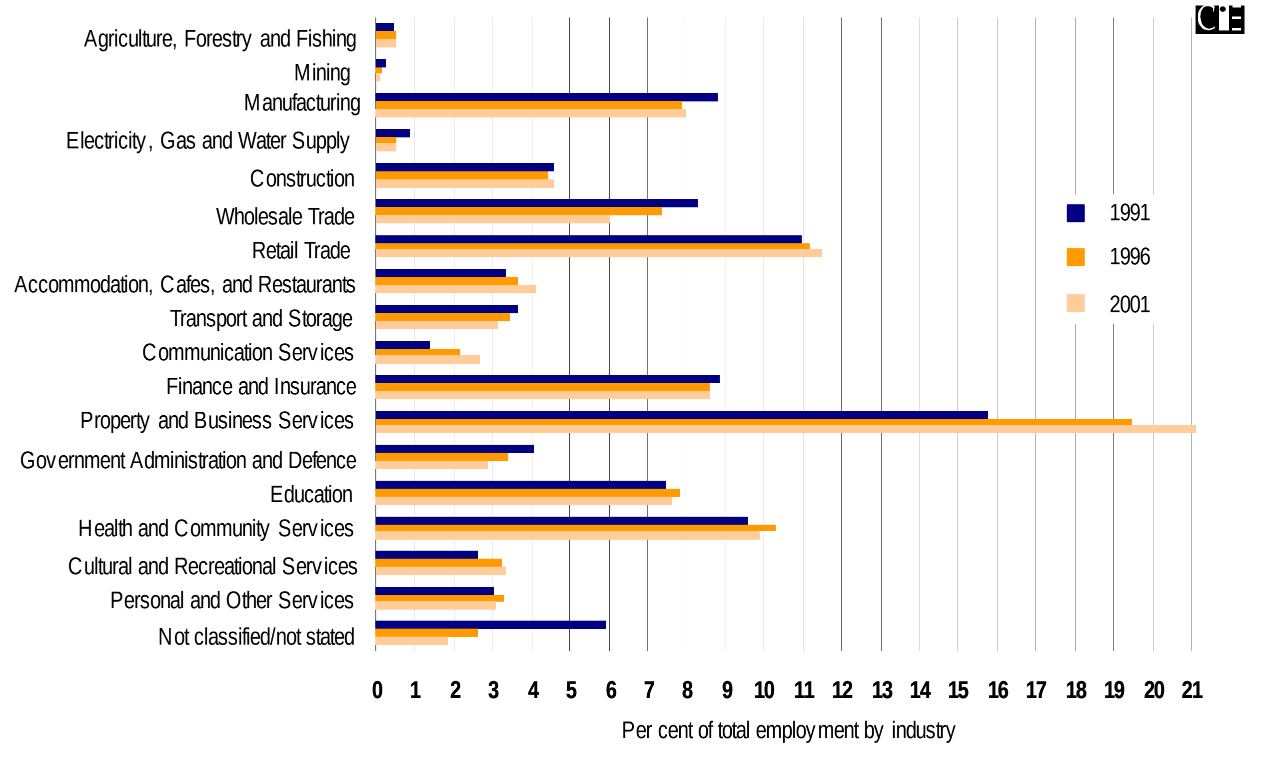
Data source: ABS census data.

employment, rising to close to 55 000 jobs or 21.7 per cent of all positions in 2001 (chart 2.10).

Employment in the communication services area has increased from around 3 000 positions in 1991 to nearly 6 800 positions. More jobs have been created in the accommodation, cafes and restaurants sector, rising from just over 7 400 in 1991 to 10 300 in 2001. Retail trade has been a relatively stable source of work over the past ten years.

The proportion of jobs sourced from the manufacturing sector out of total employment has declined over time from 8.8 per cent at the beginning of the 1990s to 8 per cent in 2001. The wholesale trade sector and government industries have also become a slightly less significant source of employment over this time.

2.10 **Employment by industry over time**



Data source: ABS census data.

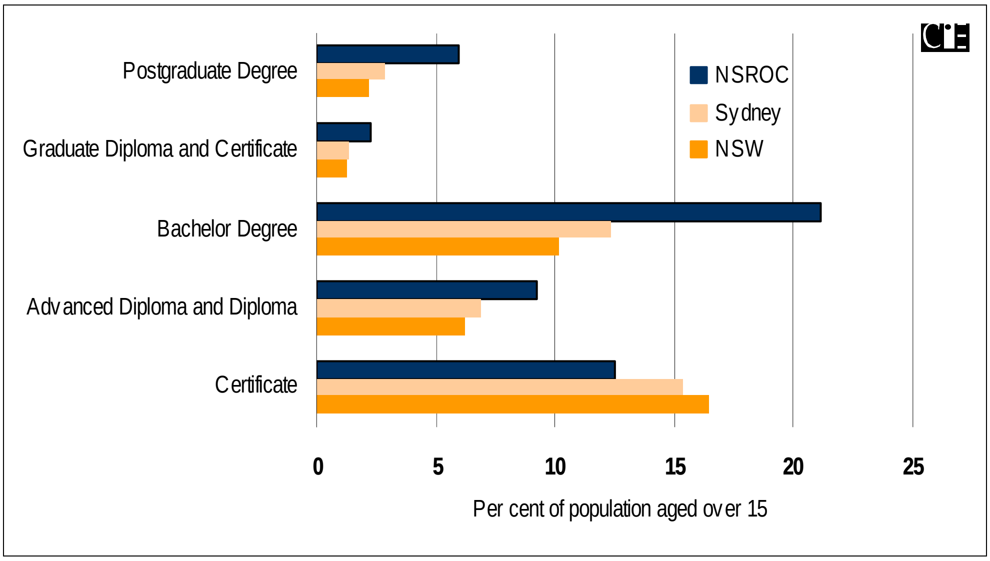
A highly skilled workforce

The NSROC workforce is highly skilled - more than a quarter of the NSROC region population aged over 15 hold a Bachelor or Postgraduate degree (ABS census data). In 2001, an estimated 30 per cent of the NSROC population had attained qualifications at the tertiary level compared to 17 per cent in Sydney and 14 per cent in New South Wales. Chart 2.11 provides a comparison of qualification levels between NSROC, Sydney and New South Wales.

Most workers in the NSROC region[6] are professionals, comprising nearly 32 per cent of total employment. This compares to 21 per cent in Sydney as a whole and 19 per cent for New South Wales. Other main occupations of workers in the NSROC region are intermediate clerical sales and service workers, managers and administrators, and associate professionals. The skills set of the NSROC labour force matches the needs of the property and

[6] See Appendix B for occupations in each LGA of the NSROC region compared to Sydney and the state.

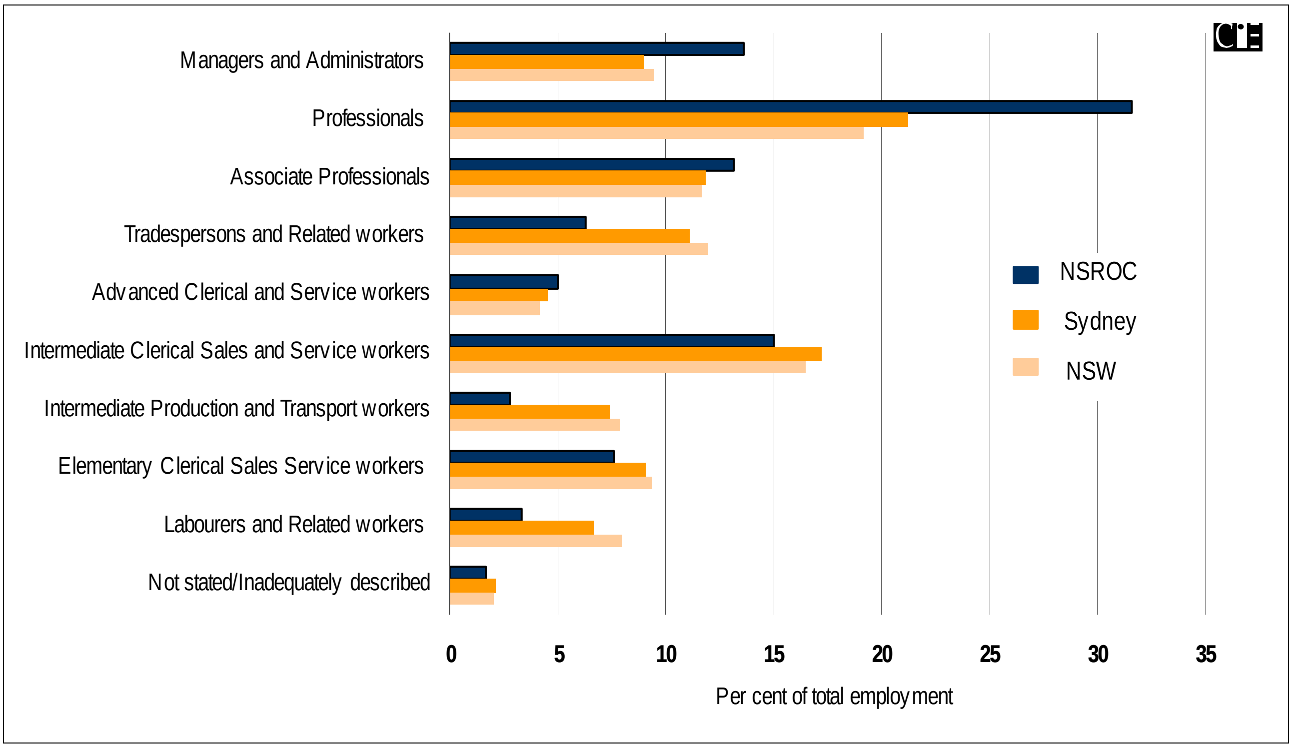
2.11 **Level of educational attainment by region** 2001



Data source: ABS census data.

business services and finance and insurance sectors that have been demonstrated to make up such a significant and growing part of the NSROC economy.

2.12 **Type of occupation by region** 2001



Data source: ABS census data.

NSROC's economic well being

Personal incomes are above average

Personal incomes in the NSROC region are on average higher than those in Sydney and the state. This reflects the extent of employment opportunities, the level of economic activity and the high skills attainment in the region.

Within the NSROC region, North Sydney is the LGA with the highest average individual income of $900 per week. Lane Cove and Willoughby have the next highest level of income at $650 earned on average by their residents per week. Table 2.13 provides a comparison of personal income measured during the 2001 census.

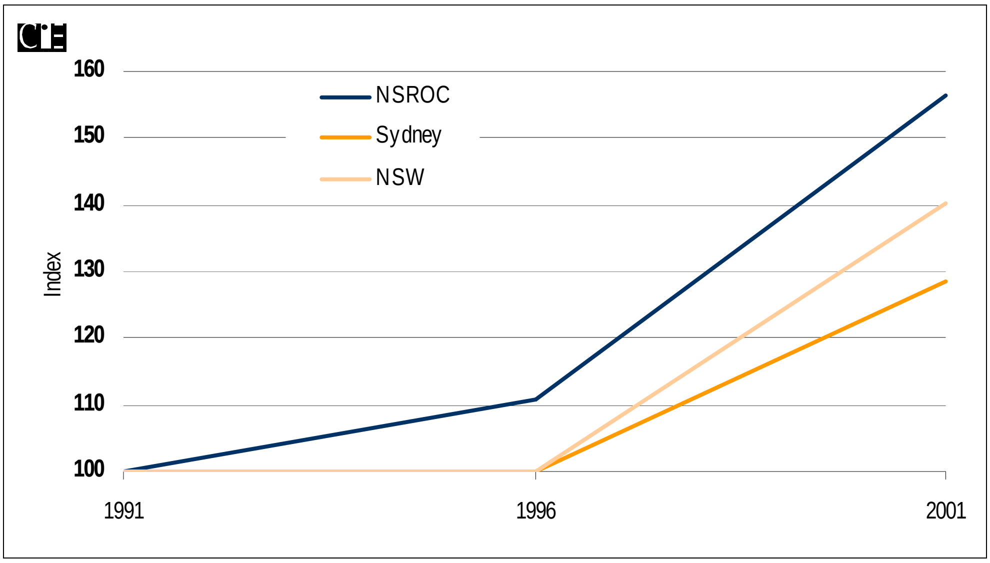
Individual income has expanded considerably in Sydney and New South Wales over the past ten years. However, on average those living in the northern Sydney region have enjoyed a faster rate of income growth during this time as demonstrated in chart 2.14. Between 1991 and 2001, weekly individual income has risen from $392 to $614 in NSROC (by 56 per cent). This compares to a rise from $350 to $450 in Sydney (by 40 per cent) and from $250 to $350 for the state as a whole (by 29 per cent).

2.13 **Average individual weekly income** 2001

Region	*Individual weekly income*
	$
North Sydney	900
Lane Cove	650
Willoughby	650
Hornsby	550
Hunter's Hill	550
Ku-ring-gai	550
Ryde	450
NSROC	614
Sydney	450
NSW	350

Source: ABS census data.

2.14 **Growth in average individual income** 1991-2001



Note: This income data is in nominal terms, it is not indexed to a constant base.
Data source: ABS census data.

Above average housing prices can translate into increased wealth

Property value appreciation reflects a growth in demand for land and buildings as a result of rising population, personal income, and business activity, among other things. It is both an indicator of business investment and growth, and a potential source of wealth for those who are property owners. Table 2.15 shows the average sale price for all dwellings within each LGA of the NSROC region compared to Sydney. Percentage change in average prices for all dwellings within these areas are also shown.

2.15 **Average prices for all dwellings within Sydney and NSROC**

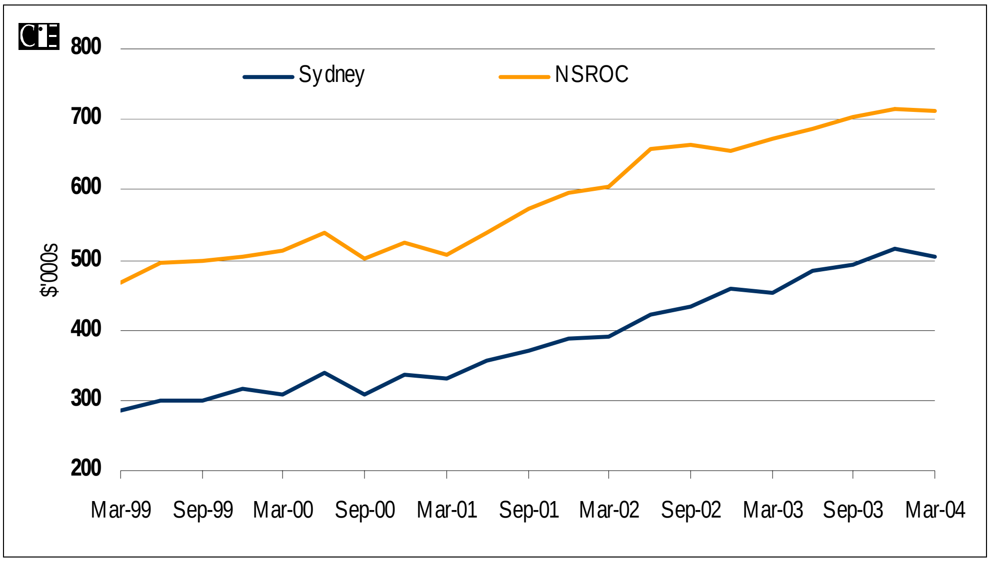
Region	***Average price***[a]	***Absolute change***[b]	***Per cent change***[b]
	$'000	$'000	per cent
Hornsby	557	227	69
Hunter's Hill	994	317	47
Ku-ring-gai	906	340	60
Lane Cove	650	183	39
North Sydney	629	152	32
Ryde	519	223	75
Willoughby	723	262	57
NSROC	743	243	50
Sydney	504	219	77

[a] March 2004. [b] March 1999 — March 2004.
Source: NSW Department of Housing (2004).

LGAs of the NSROC region typically have higher housing prices than Sydney representing a greater demand for property and buildings within these areas. Average sale prices for all dwellings within NSROC for the 2004 March quarter ranged from $557 000 in Hornsby to $994 000 in Hunter's Hill. This is in comparison to the average sale price of $504 000 in Sydney.

In the last five years, average prices for all dwellings within the NSROC region have followed the same upward trend as average Sydney prices (see chart 2.16). Within NSROC, average prices for all dwellings since March 1999 have increased by $243 000 compared to $219 000 in Sydney. However, Sydney has experienced the greatest increase in the percentage change in prices at approximately 77 per cent, compared to NSROC at 50 per cent. Within the NSROC region, Ryde experienced the highest increase in average prices at 75 per cent.

2.16 **Trend in average quarterly prices for all dwellings**[a]



[a] March 1999 — March 2004.

Data source: NSW Department of Housing (2004).

The attractiveness of living in the NSROC region and residents' investment in their own housing can be reflected in the level of development activity. Table 2.17 shows that the level of development activity by number of development applications is significantly higher in the NSROC region relative to the average for the state as whole.

2.17 **Number of development applications determined** 2002-03

Region	***Development applications***
	Number
Hornsby	2 858
Hunter's Hill	189
Ku-ring-gai	1 712
Lane Cove	329
North Sydney	1 061
Ryde	1 431
Willoughby	1 131
NSROC (average)	1 244
NSW (average)	742

Source: DLG (2004).

A well serviced region

While it is hard to measure and compare infrastructure within the region and between regions, there is broad evidence that the NSROC region benefits from significant investment that has occurred in infrastructure. This is reflected in the availability of schools, hospitals, health care and transport options.

There is a lack of publicly available data on infrastructure at the LGA (or within various regions of Sydney) level to enable an assessment of how adequate existing and proposed infrastructure is to meet the current and future needs of the NSROC region. More data is also needed to enable accurate comparisons of infrastructure levels within different areas of Sydney.

Given the paucity of data, the analysis in this section focuses on areas for which information was available.

Health and education

The NSROC region provides a range of health services that support local residents and attract residents from other areas. For example, Northern Sydney Health[7] (NSH), which is the public provider of health services, was a net exporter of services to other states and other areas within New South Wales and Sydney (NSH 2003).

[7] The Northern Sydney Health provides service to an area encompassing the NSROC region plus 4 other councils, including Manly, Mosman, Warringah and Pittwater ('Northern Sydney Health Area').

There are around 11 private hospitals and 7 public hospitals servicing the region (NSROC Organisation 2002). A high degree of self-sufficiency exists in the Northern Sydney Health Area, with the vast majority of residents (around 80 per cent) being treated in local public and private hospitals (NSH 2003).

There is a variety of educational institutions in the region including government schools, non-government schools, selective schools, universities, TAFE and other tertiary institutions. In 2001, there were over 500 000 people attending educational institutions in the NSROC region (NSROC Organisation 2002).

Transport infrastructure

Transport is an area where there is a good range of options but further information is required to judge whether it is sufficient to meet the needs of residents in the NSROC region. Examining the ABS method of travel to work data provides an indicator of the degree of choice and behaviour in this area. It is only one of many indicators.

Residents in the NSROC region are able to use a range of transport services including motor vehicles, buses, ferries and trains. The most popular mode of transport to work in the NSROC region is by motor vehicle. At the 2001 census, 52 per cent of residents in the NSROC region journeyed to work by car only. Travelling to work by car is also the main mode of transport to work in Sydney and the state as a whole. The data indicates that NSROC residents are slightly less reliant on their cars than elsewhere. NSROC residents are on average more likely to use public transport modes such as trains and buses. This reflects the availability of alternative transport infrastructure over much of the NSROC region. It is notable however that the transport choices vary substantially within the NSROC region. For example, Hornsby and Ku-ring-gai rely more on cars as a mode of transport to work than other LGAs in the NSROC region which may reflect issues of relative transport availability in those particular LGAs.

Those living in the NSROC region are more likely to travel to work by train only than those in Sydney and New South Wales on average. Hornsby and Ku-ring-gai are the least likely in the NSROC region to travel to work by bus. A greater proportion of people living in North Sydney cycle and in particular walk to work than in other NSROC LGAs, Sydney and the state.

The top five methods of travel to work in the NSROC region are set out in table 2.19 with comparative data for Sydney and New South Wales.

2.18 **Main methods of travel to work** 2001

Region	*Train only*	*Bus only*	*Train and bus*	*Car only*	*Bike or walked*
	Per cent	Per cent	Per cent	Per cent	Per cent
Hornsby	12	1	2	56	3
Hunter's Hill	0	8	1	59	3
Ku-ring-gai	12	1	2	54	2
Lane Cove	4	14	2	51	6
North Sydney	11	14	2	38	12
Ryde	6	10	2	58	4
Willoughby	12	10	2	47	7
NSROC	10	6	2	52	5
Sydney	8	5	2	58	4
NSW	5	3	1	60	5

Source: ABS census data.

Another indicator of transport availability is a particular community's investment in cars. The number of vehicles per household in the NSROC region is slightly above the Sydney average. Average vehicles per household in the NSROC region is 1.6 compared to 1.5 for Sydney. Within the NSROC region, Hornsby and Ku-ring-gai have the highest average cars per household at 1.9 each.

The NSROC region has a significant road network. There are around 2752 kilometres (km) of road network covering this region. In this area there are an estimated 124 cars per km of road.

Despite the range of different transport options, there are indications that the demands being placed on the NSROC region's transport infrastructure is pressuring existing capacity.

> In many parts of the region, traffic congestion is becoming an increasing problem along with associated environmental problems. Much of the existing transport infrastructure is ageing and operating at near capacity. (NSROC Organisation 2004)

Examining the amount of cars and people to this area of road within the NSROC region reveals that North Sydney has the highest number of vehicles and people per km of road network. This reflects the high population density and degree of activity in the area. According to North Sydney Council (2003), increasing car ownership, ageing public transport system and the significant volume of people (nearly 53 000 each day) commuting to this area for work are contributing to increased traffic congestion that is occurring in the area. These characteristics may be influencing the above average proportion of people in North Sydney walking to work mentioned above. Details across the region are demonstrated in table 2.19.

2.19 **Vehicles and road network by region**

Region	*Vehicles per household*[a]	*Road network*	*Vehicles per km of road*	*People per km of road*
	Number	Kilometre	Number	Number
Hornsby	1.9	1190	84	130
Hunter's Hill	1.7	61	127	222
Ku-ring-gai	1.9	587	115	184
Lane Cove	1.5	108	180	297
North Sydney	1.1	173	206	342
Ryde	1.8	394	180	252
Willoughby	1.6	238	165	264
NSROC	1.6[b]	2751	124	193
Sydney	1.5	N/A	N/A	N/A

a Number of vehicles is based on 2003 data.
b Average across all seven LGAs.
Sources: ABS census data, the NSROC Organisation (2002) and RTA (2004).

Utilities

The NSROC region has access to utilities such as electricity, gas, water and waste management services.

Regarding water consumption, last year several NSROC LGAs had above average household water consumption. Ku-ring-gai and Hunter's Hill were amongst the top three water consumers supplied by Sydney Water, sitting well above the average (table 2.20). A range of factors influence household's demand for water such as income and household size. Household's demand for water can increase with income. The relatively high water use in the region may be partly reflective of the above average incomes of its residents and high property values.

2.20 **Household quarterly water consumption - January-March**

Region	*Average consumption 2002-03*	*Average consumption 2003-04*	*Reduction in consumption 2003 to 2004*
	Kilolitres	Kilolitres	Per cent
Ku-ring-gai	151	86	43
Hornsby	119	70	41
North Sydney	88	59	33
Willoughby	101	69	32
Hunter's Hill	129	90	30
Ryde	92	65	29
Lane Cove	104	75	28
Average for Sydney Water customers	97	69	29

Source: Sydney Water Corporation (2004).

In 2003-04, many consumers across Sydney reduced their water consumption relative to the previous year - and NSROC LGAs contributed to this. Households in Ku-ring-gai and Hornsby achieved some of the largest reductions in consumption between 2002-03 and 2003-04 of 43 per cent and 41 per cent respectively.

Sydney Water Corporation is the sole supplier of water to residents of the NSROC region.

Local councils provide domestic waste management and recycling services to the NSROC region. Within the NSROC region, Ryde had the highest per capita volume of domestic waste and the lowest per capita volume of recyclables in 2002-03. Relative to the state average, the majority of LGAs in the NSROC region had lower volumes of domestic waste and higher volumes of recyclables per capita. The cost to council of collecting waste and the charge to consumers for waste services in the NSROC region is higher on average than for the state as a whole (table 2.21).

2.21 **Domestic waste management** 2002-03

Region	*Domestic waste*	*Recyclables*	*Average charge for domestic waste management*	*Cost per service for domestic waste collection*
	kg per capita	kg per capita	$	$
Hornsby	215	182	244	131
Hunter's Hill	216	118	291	167
Ku-ring-gai	194	256	206	116
Lane Cove	203	165	279	182
North Sydney	189	159	181	120
Ryde	298	87	212	125
Willoughby	236	198	241	138
NSW median	250	115	178	110

Source: DLG (2004).

The NSROC region has a well established gas network (NSROC Organisation 2002). There are around 1765 km of gas mains and almost 105 000 customers in the NSROC region.

New infrastructure projects

The state government's State Infrastructure Strategic Plan (SISP) sets out several major infrastructure projects for development over the next decade. The SISP focuses on projects above a minimum threshold of $20 million. Around 300 potential infrastructure project proposals have been selected for inclusion in the SISP with a value of approximately $29 billion (NSW Government 2002). Proposed infrastructure projects listed in the SISP as specifically involving the NSROC region are listed in table 2.22.

2.22 **SISP proposed projects in the NSROC region**

Projects in each region	***Estimated cost***
Hornsby	
▪ Stage 1 Newcastle High Speed Rail Link Investigation	▪ TBD
▪ North West Rail Link Investigation (also involves LGAs of Baulkham Hills and Blacktown)	▪ TBD
▪ Priority Sewerage Program Brooklyn and Dangar Island Scheme	▪ $25 million
▪ Priority Sewerage Program Mount Ku-ring-gai Industrial Scheme	▪ $7 million
▪ Parramatta Rail Link Section 2 (also in Parramatta)	▪ TBD
▪ Hornsby Hospital (Obstetrics, Paediatrics and Emergency)	▪ 16 million (stage 1)
Hunter's Hill, Ku-ring-gai, Lane Cove and North Sydney	
▪ Nil listed exclusively for these LGAs.	
Ryde	
▪ 150 Compressed Natural Gas Buses (also in LGAs of Waverley, Randwick and Leichardt)	▪ $64 million
Willoughby	
▪ Royal North Shore Paediatric, Obstetrics and Emergency Building and Burns Unit	▪ $45 million
▪ Royal North Shore Hospital Redevelopment Strategy Stage 2	▪ $407 million
NSROC region[a]	
▪ Lane Cove Tunnel	▪ $815 million
▪ Parramatta Rail Link Section 1 (also involving LGA of Parramatta)	▪ $1.6 billion
▪ F3 Widening (also in Gosford)	▪ $180 million
▪ Revitalisation of inner Sydney Schools (also in several non-NSROC region LGAs)	▪ $82.5 million

a Involves more than one LGA in the NSROC region.

Note: TBD denotes that the cost is to be determined.

Source: NSW Government (2002).

There are also a number of proposed projects under the SISP that may occur in many parts of Sydney and New South Wales which the NSROC may also benefit from such as six new ferries being purchased for the Sydney Harbour and Parramatta River regions at an estimated cost of $25.4 million (see NSW Government 2002 for further details).

3 Concluding comments

THE ECONOMIC CONTRIBUTION OF THE NSROC REGION is significant. This report provides some answers and insights to five key questions. These questions and the summary of answers are reported below.

Q. What is the economic contribution of the region?

A. The economic output of the region is estimated to amount to about $32 billion each year. That is about 16 per cent of the output for the greater Sydney metropolitan area (the Statistical Division of Sydney) and 11 per cent of New South Wales at large. The NSROC region appears to be highly productive. It produces more per capita than Sydney and New South Wales at large.

Q. What is the nature of economic activity in the region?

Economic activity in the region is dominated by services industries. Services in the NSROC region account for 88 per cent of the region's output. In comparison, service sector activities account for 83 per cent of activity in Sydney and 78 per cent in New South Wales at large.

The knowledge intensive and high value property and business services sector is the largest single industry category in the NSROC region in terms of the number of business registrations and by employment. This sector is the leading source of growth in employment in the region.

Other services such as retail and wholesale trade, finance and insurance, health and education are also important to the economic base of the NSROC region and are showing sustained growth in employment. While manufacturing activity in the region is growing, it is growing at a slower pace than services. Manufacturing activity in the region is now at a relatively modest level, involving around 4 per cent of registered businesses and around 8 per cent of total employment (trending down gradually).

The NSROC region is home to vigorous, high value, knowledge intensive emerging industries. There is a large number of international ICT firms as well as many small and medium firms, forming a vigorous ICT industry cluster. There is also a grouping of leading biotechnology research organisations operating within the NSROC region.

Q. How many jobs are there in NSROC and what is the structure of the labour market?

Industries in the NSROC region provide jobs for just over a quarter of a million people. The pattern of employment in the region is in line with structural changes observed earlier. The fastest growth is in services activities, particularly in services that depend on a high level of skills and expertise in transforming knowledge, especially in the professions.

Not surprisingly, given the needs of the economy in the region, the workforce in the NSROC region is highly skilled. More than 30 per cent of the population over 15 years hold a tertiary level qualification and 32 per cent are professionals. This is well ahead of Sydney and the state as a whole.

Q. How is NSROC's economic contribution translated into its well being?

Reflecting the widespread investment in human capital in the NSROC region, incomes in the region are higher on average than in Sydney and New South Wales at large. The NSROC region also has a lower level of unemployment than Sydney and New South Wales.

Over time higher incomes in a region should be reflected in terms of an increase in wealth. There is evidence that the residents of the NSROC region have invested in at least one asset class — residential housing. Property values in the region are higher on average than for Sydney at large.

Q. How well supported is the region in terms of services and infrastructure?

Comparable evidence about service provision at the level of local government areas is difficult to acquire, but the available evidence suggests that the NSROC region has access to a range of health and education to support residents and the wider community. In some instances, the region acts as an 'exporter' of such services to people from other regions, particularly in health and education services.

There is also a paucity of data on infrastructure levels at the LGA or regional (within Sydney) level to enable assessments and comparisons. Available information demonstrates that the NSROC region has access to a range of utilities and transport options. However, there are signs of pressure on existing resources. Local councils in the NSROC region have noted that there are problems of increasing traffic congestion and ageing infrastructure.

Residents in areas of the NSROC region that have typically been above average water consumers are attempting to reduce this following a pattern occurring in many parts of Sydney. Cars are the favoured form of transport to work in the NSROC region.

The overall picture

The overall picture is of a region that is at the leading edge of a fundamental economic transition that is sweeping Australia and the globe. Post industrialism saw a rise of services, overtaking manufacturing in terms of the value of output and the creation of jobs. Technological change is fuelling further change towards the information or knowledge economy where the next wave of growth and value is driven more by the exchange of knowledge, information and services than physical goods.

While the NSROC region has a broad and diversified economic base, it has made the transition and is strong in service economy capabilities. In particular it has also already established a viable and productive core of high value knowledge workers and businesses in sectors such as property and business services and finance and insurance. The region's strengths in terms of its large pool of knowledge workers also underpins competitiveness in areas such as science and research, ICT and emerging biotechnology activities.

The NSROC region is successfully converting investment in human capital and know-how into productivity gains and growth in activities that are seeing sustained expansion in demand. The result is higher incomes, less unemployment, greater wealth and higher community economic well being.

A Appendix A

A.1 **Breakdown of four broad industry groupings**

Broad industry groupings	*ANZSIC Division level industries*
Primary production	▪ Agricultural, silviculture, fishing and mining.
Manufacturing	▪ Manufacturing, including ANZSIC subdivisions of: – food, beverage and tobacco; – textile, clothing, footwear; – wood and paper products; – printing, publishing and recorded media; – petroleum, coal, chemical; – non-metallic mineral products – metal products; – machinery and equipment; and – other manufacturing.
Services	▪ Electricity, gas and water supply ▪ Construction ▪ Wholesale trade ▪ Retail trade ▪ Accommodation, cafes and restaurants ▪ Transport and storage ▪ Communication services ▪ Finance and insurance ▪ Property and business services ▪ Education ▪ Health and community services ▪ Cultural and recreational services ▪ Personal and other services
Government	▪ Government administration and defence. We note that government entities contribute towards activities in the services sector. These activities have not been included in the government industry grouping in order to avoid double counting.

Source: CIE and ABS (2004).

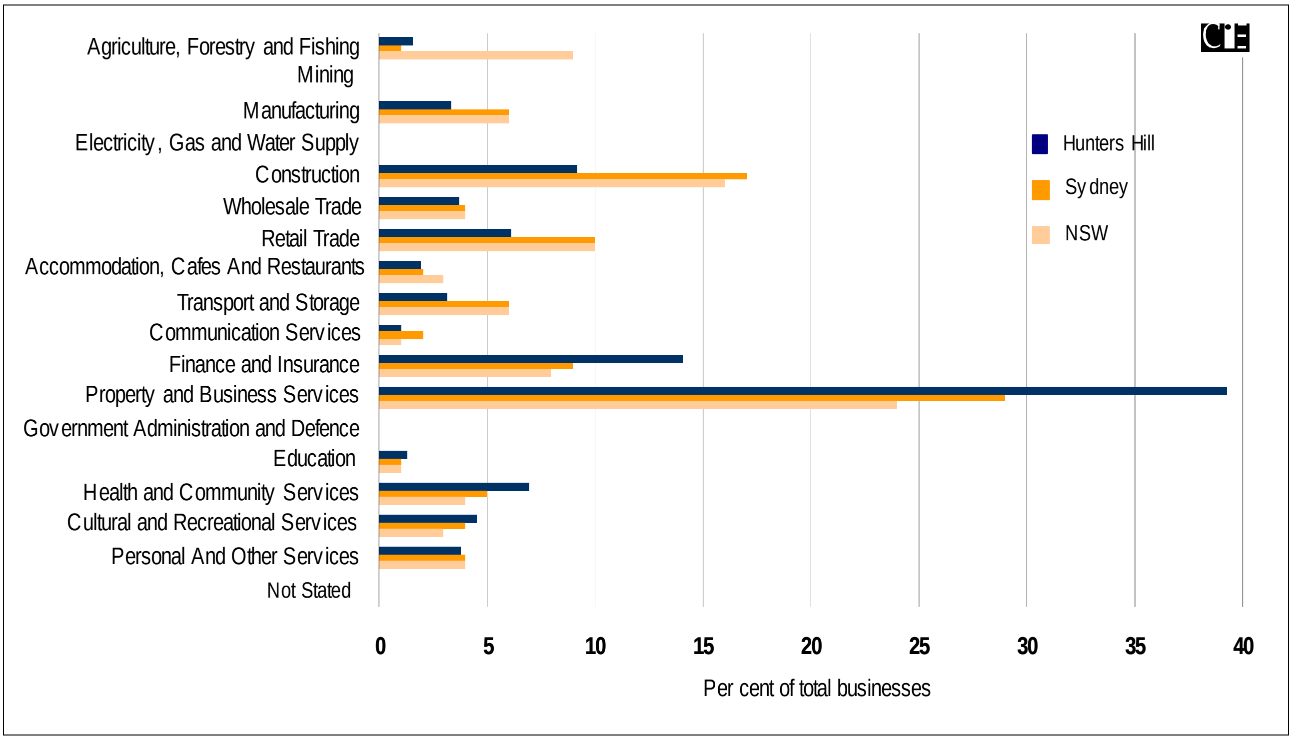
B

Appendix B

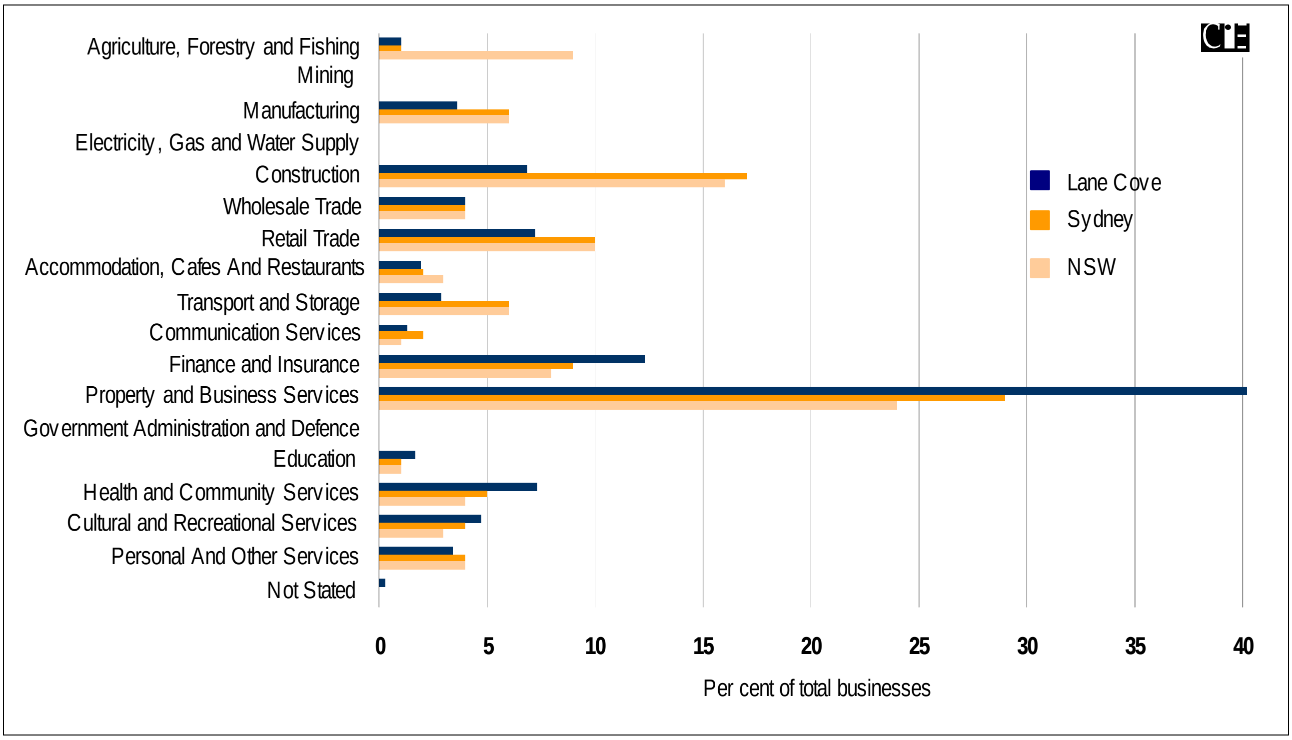
THIS APPENDIX PROVIDES additional detail for selected charts from the main report regarding each LGA within the NSROC relative to Sydney and New South Wales. Information for each LGA is set out under topic headings. All data is sourced from the ABS census.

Operating Businesses

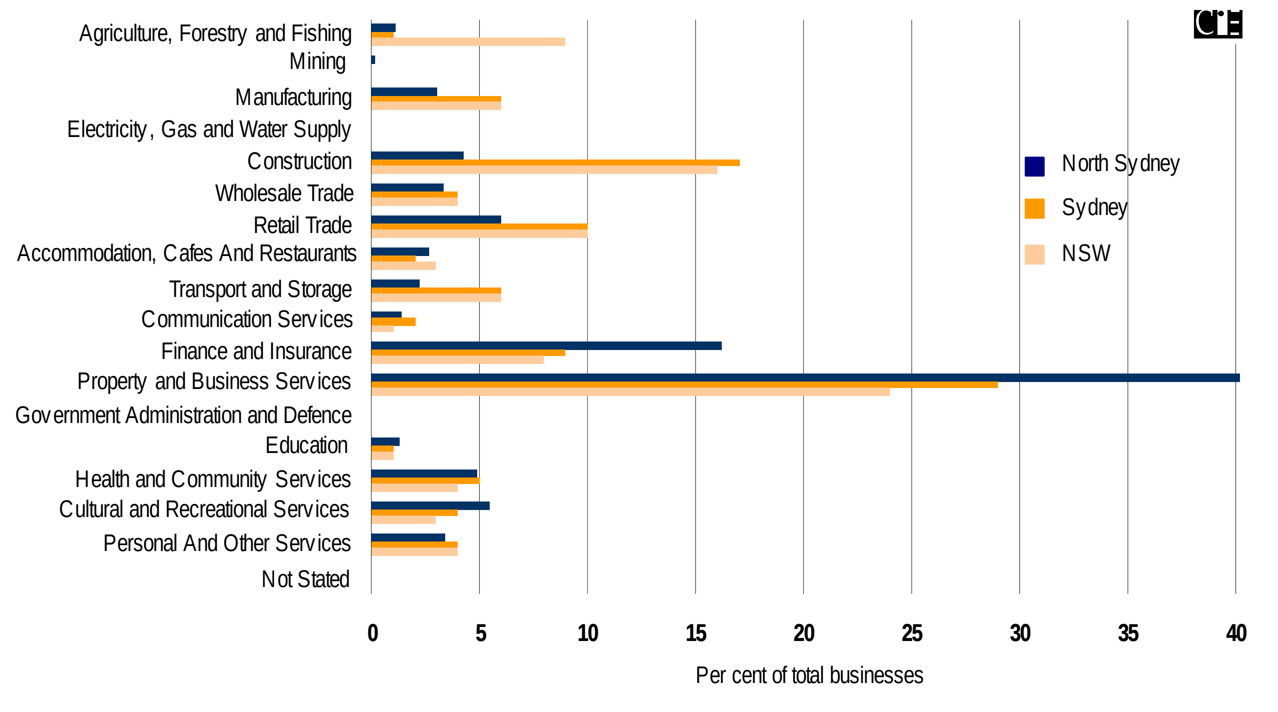
B.1 Businesses operating by industry — Hunter's Hill



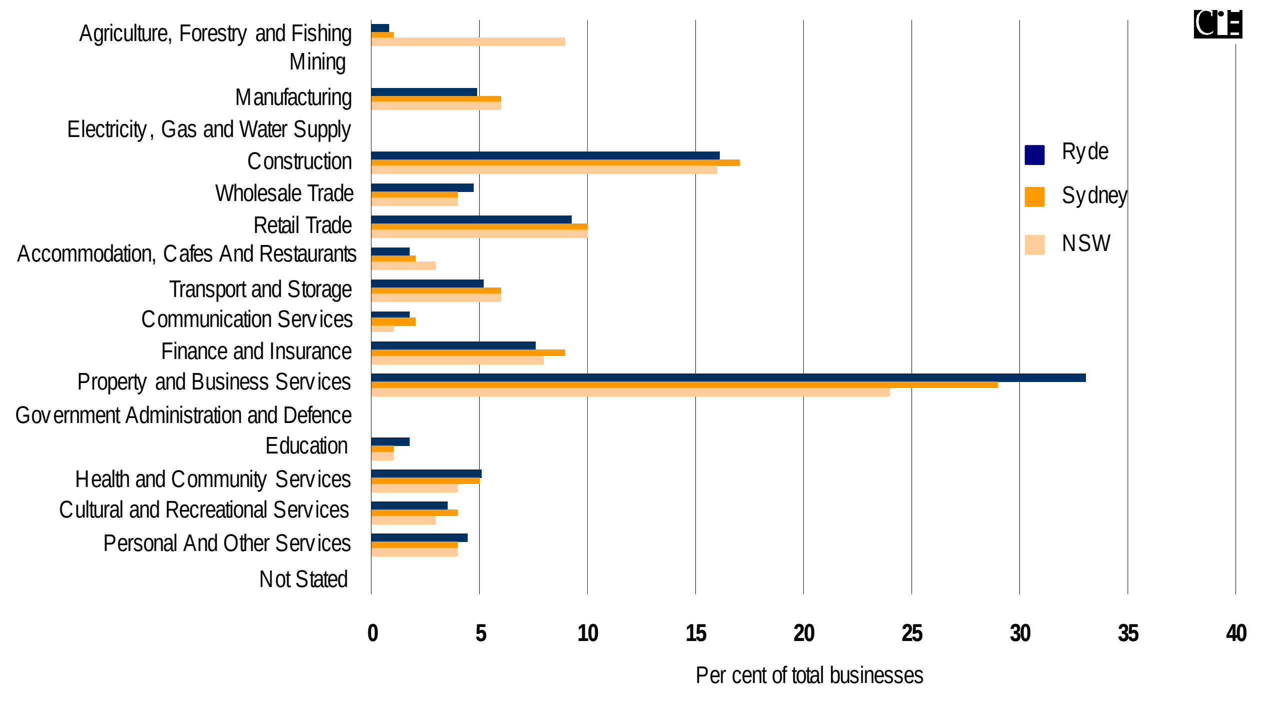
B.2 Businesses operating by industry — Lane Cove



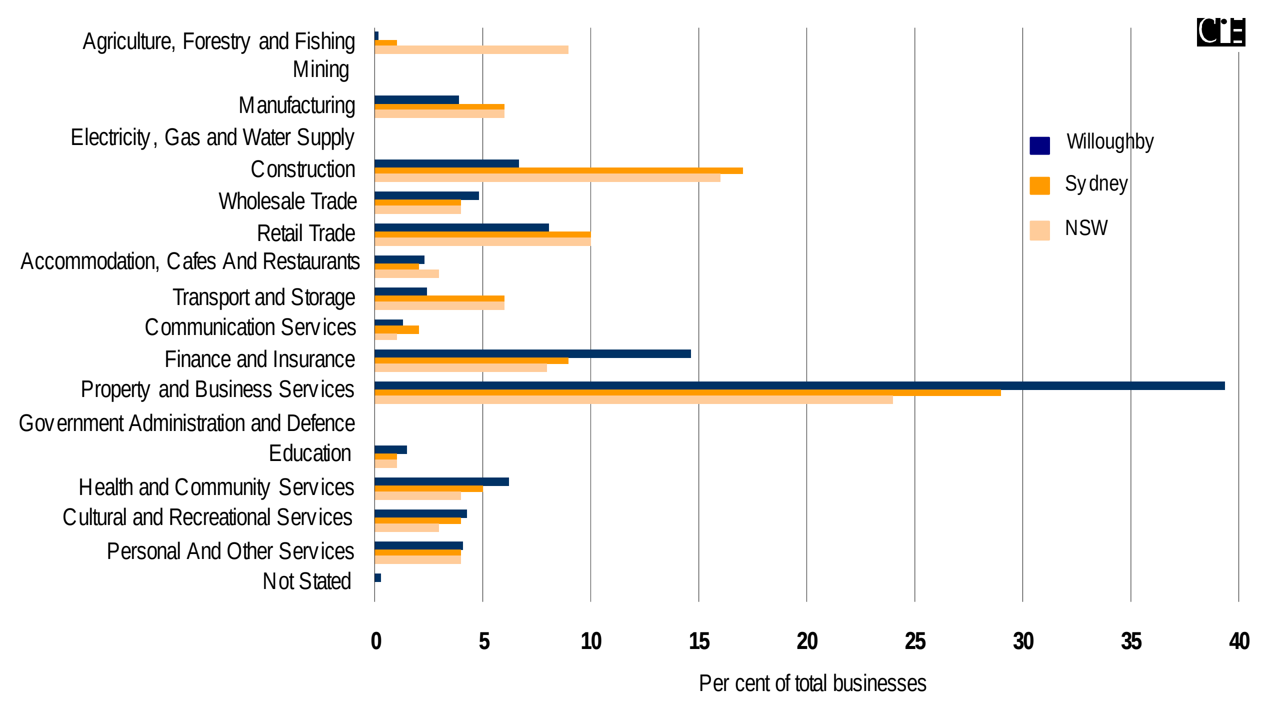
B.3 **Businesses operating by industry — North Sydney**



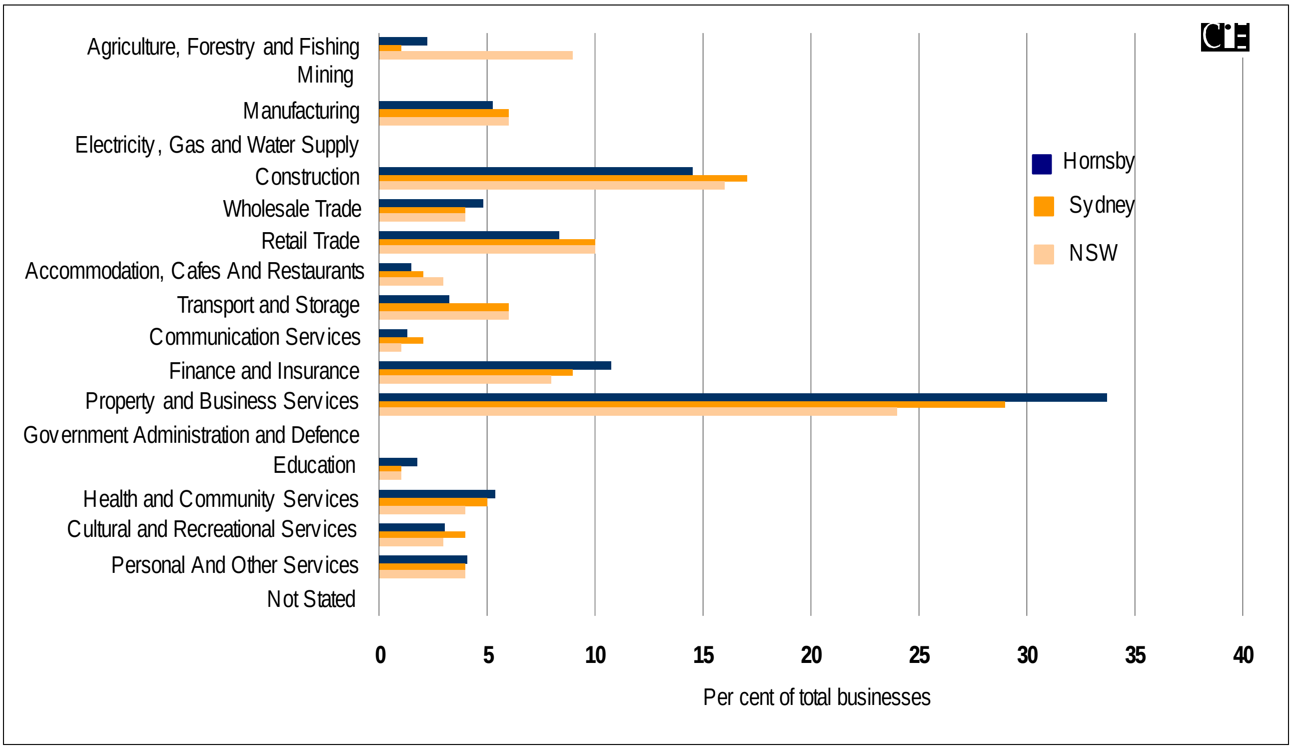
B.4 **Businesses operating by industry — Ryde**



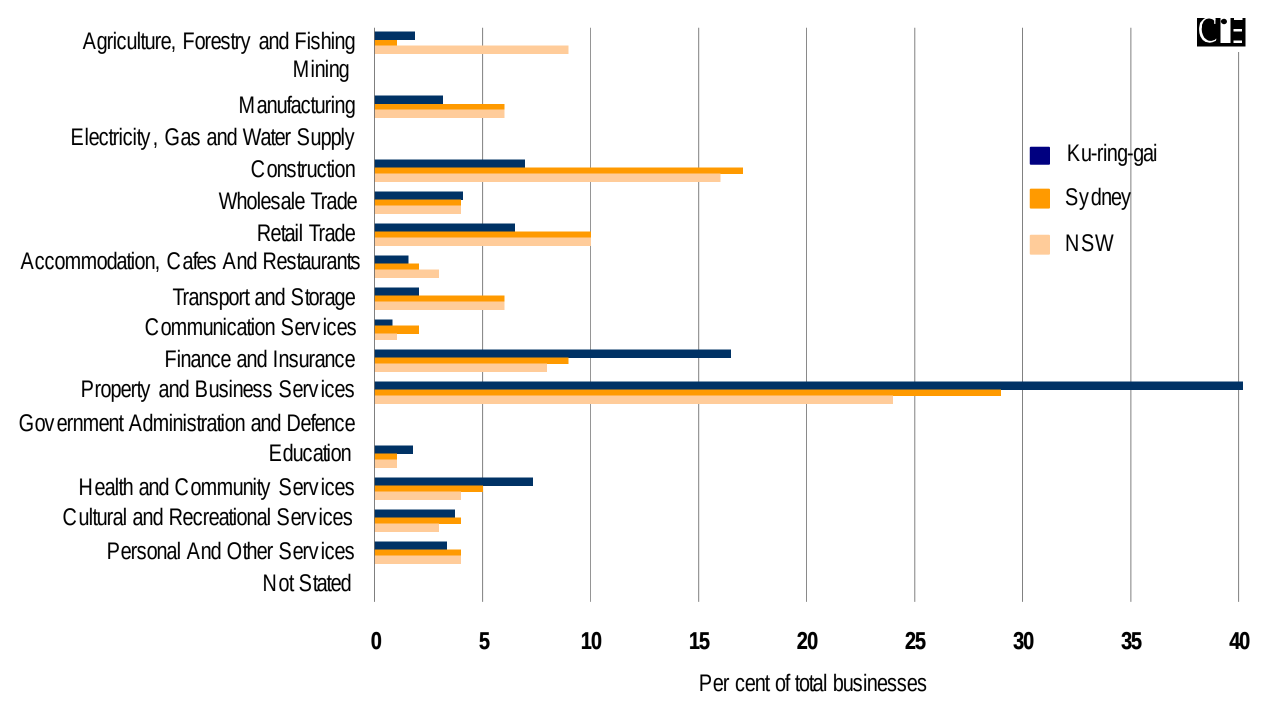
B.5 **Businesses operating by industry — Willoughby**



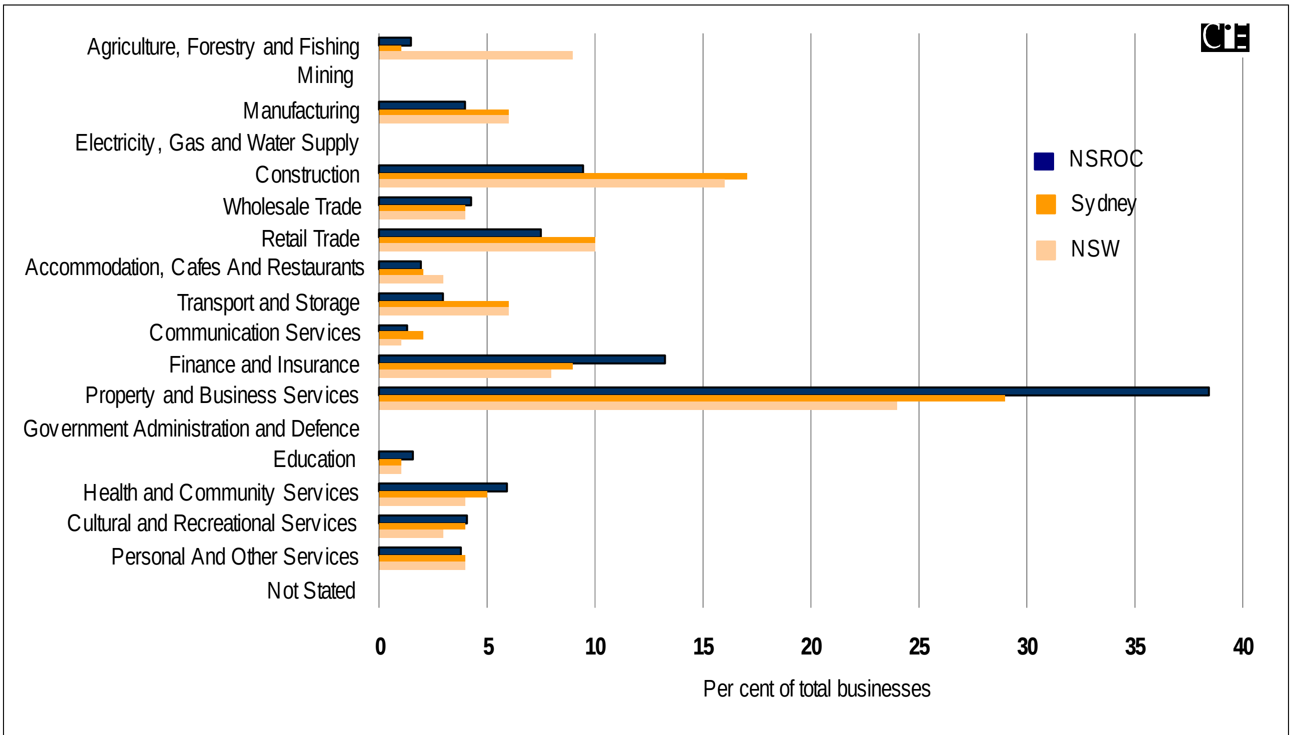
B.6 **Businesses operating by industry — Hornsby**



B.7 **Businesses operating by industry — Ku-ring-gai**

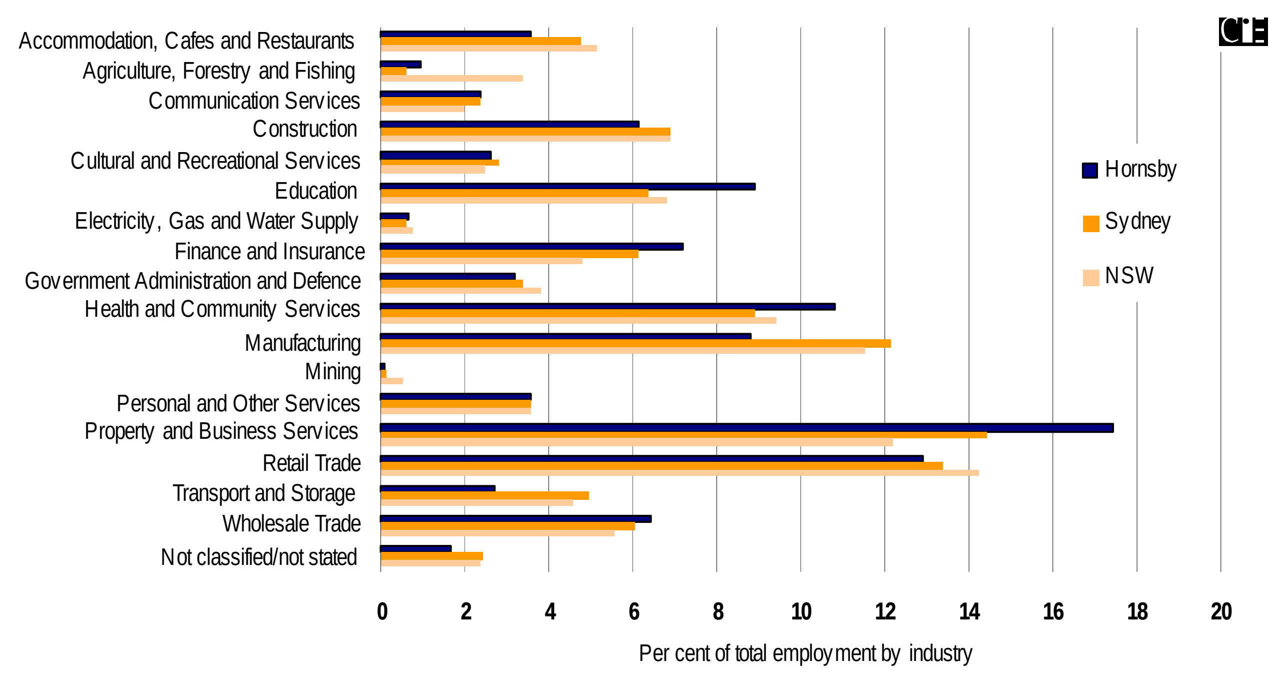


B.8 **Businesses operating by industry — NSROC**

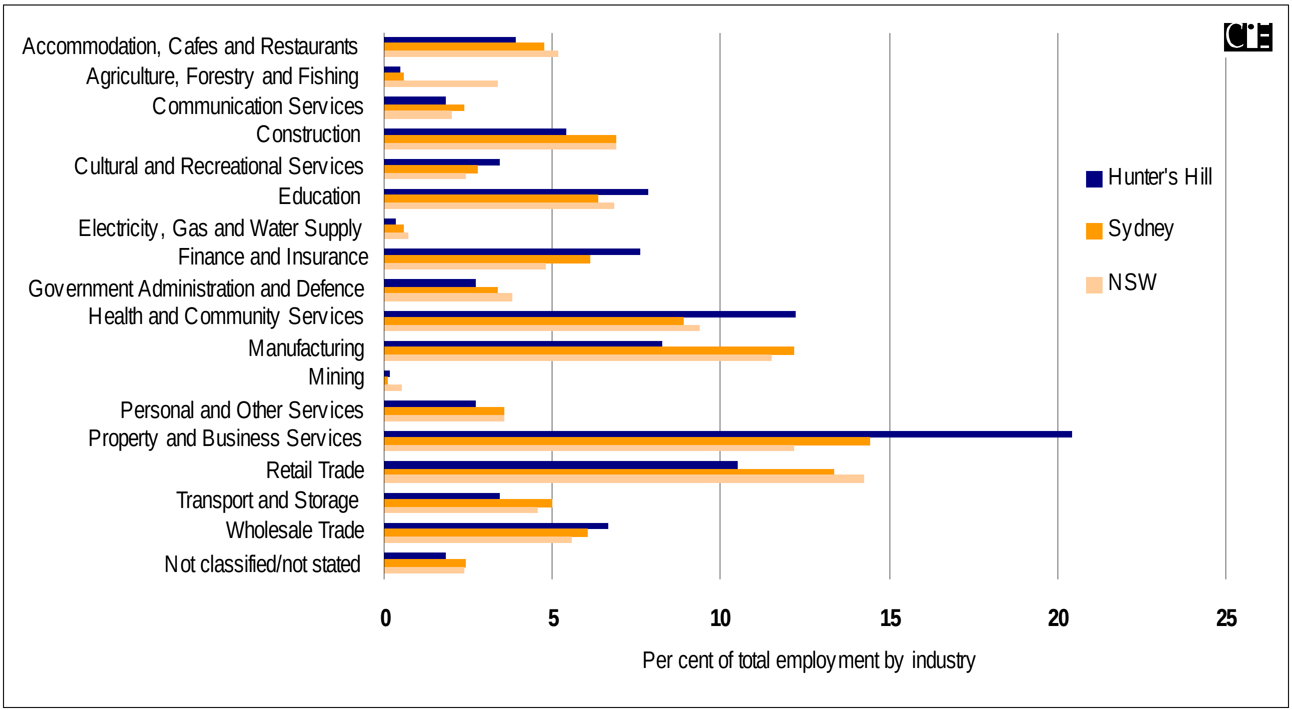


Employment by industry

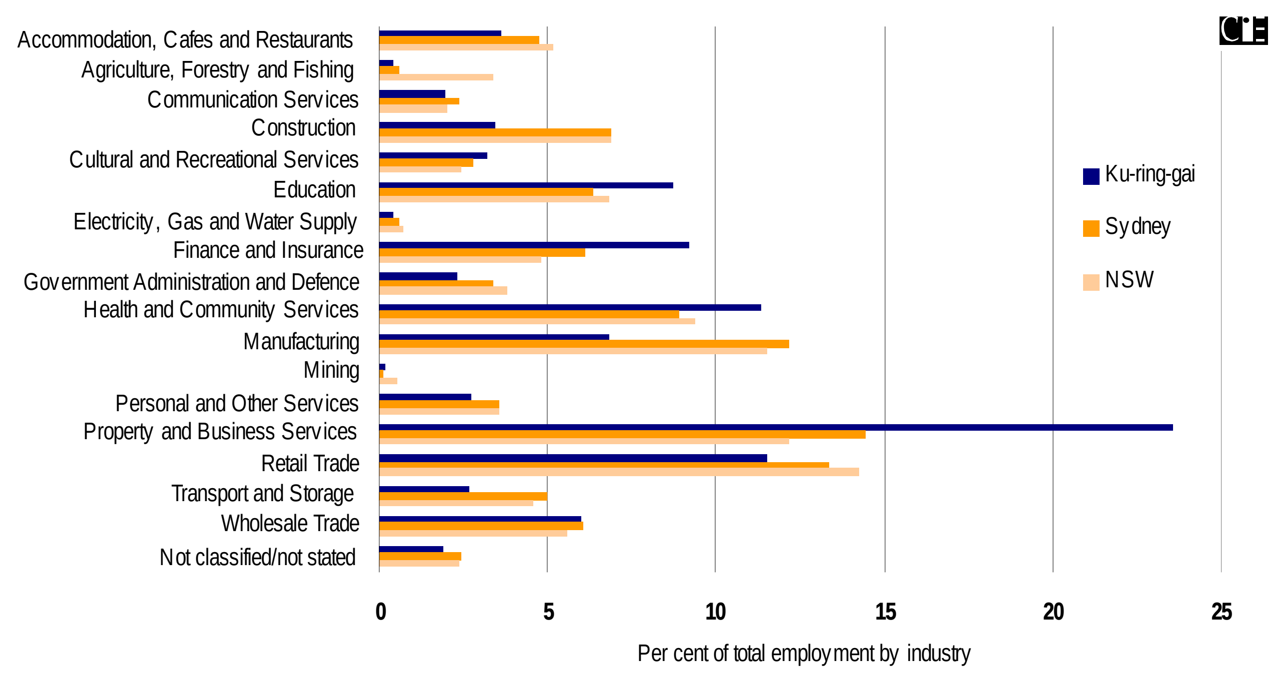
B.9 **Hornsby employment by industry** 2001



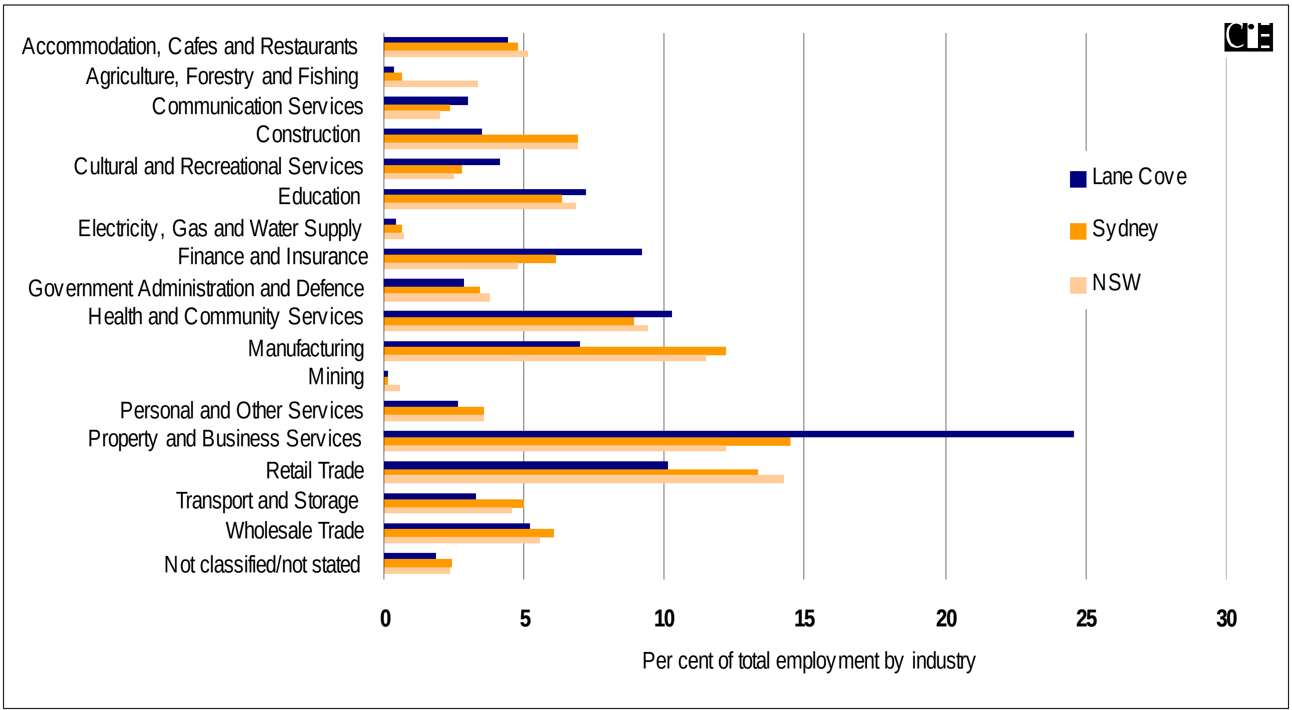
B.10 **Hunter's Hill employment by industry** 2001



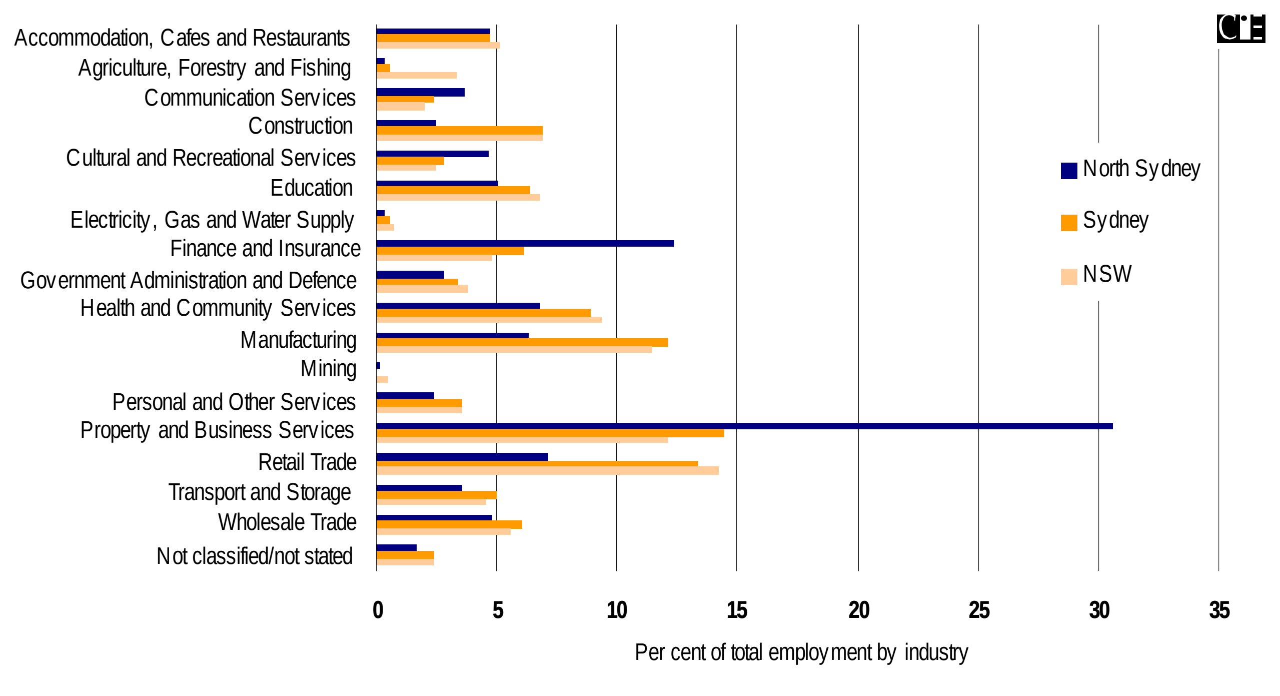
B.11 **Ku-ring-gai employment by industry** 2001



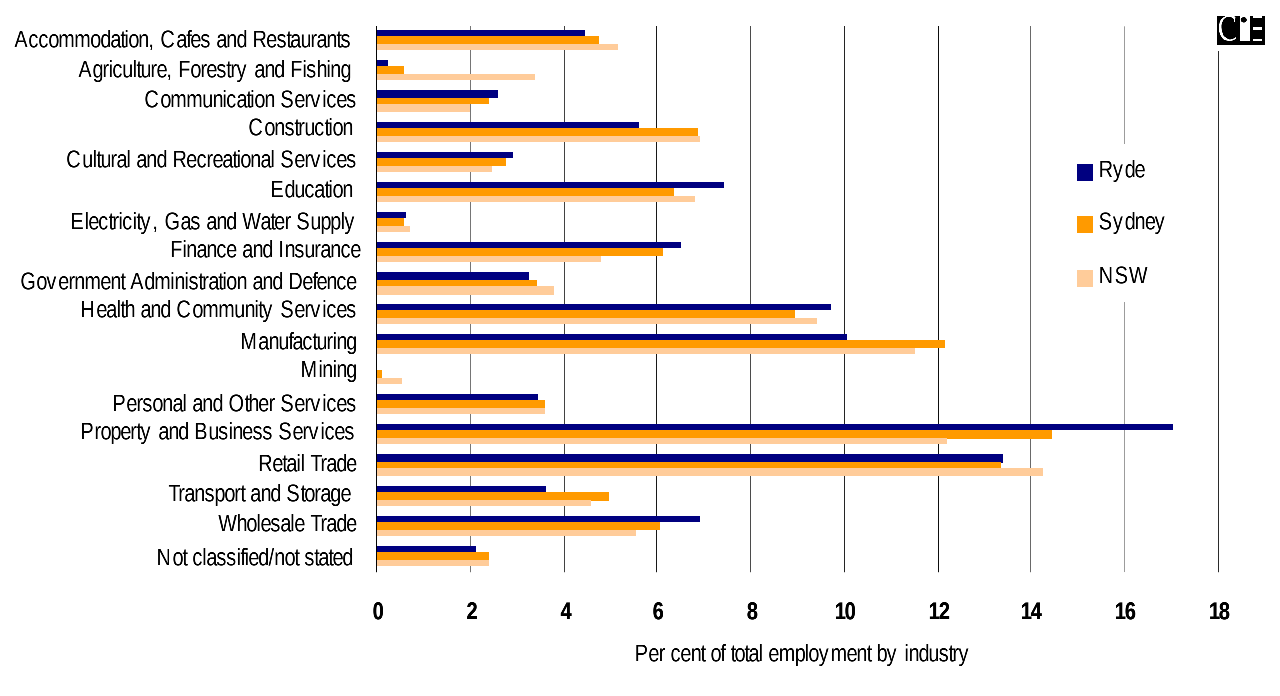
B.12 **Lane Cove employment by industry** 2001



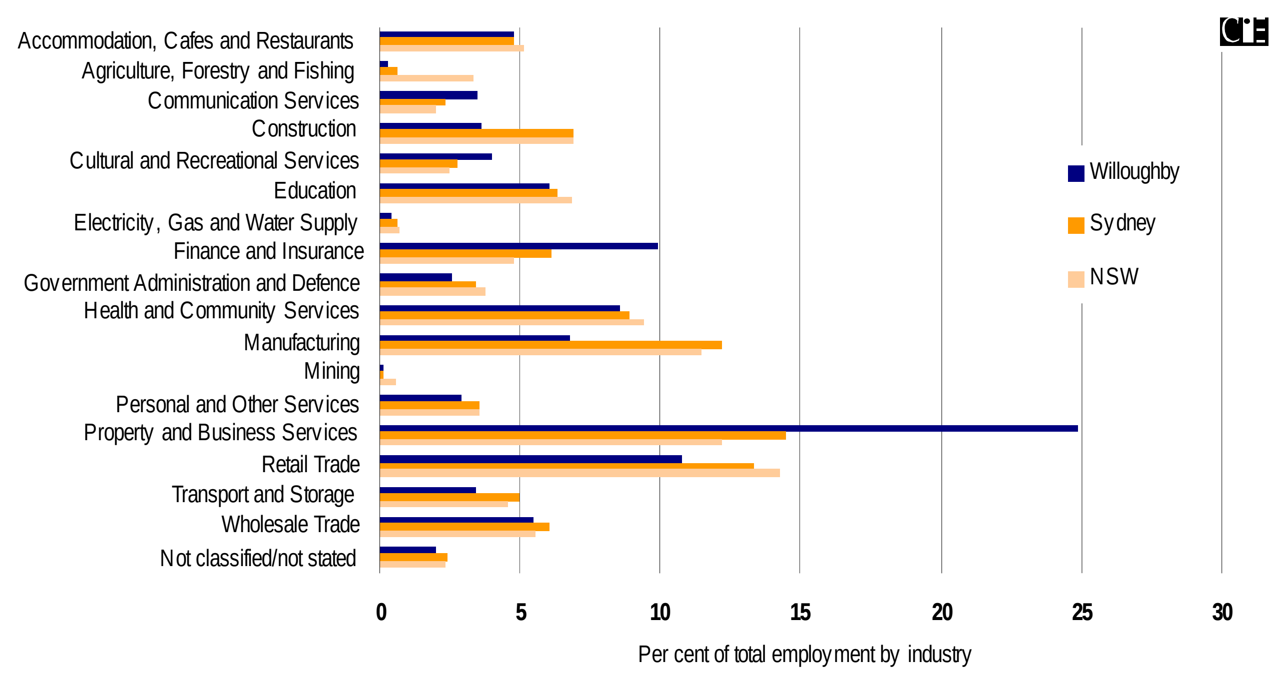
B.13 **North Sydney employment by industry** 2001



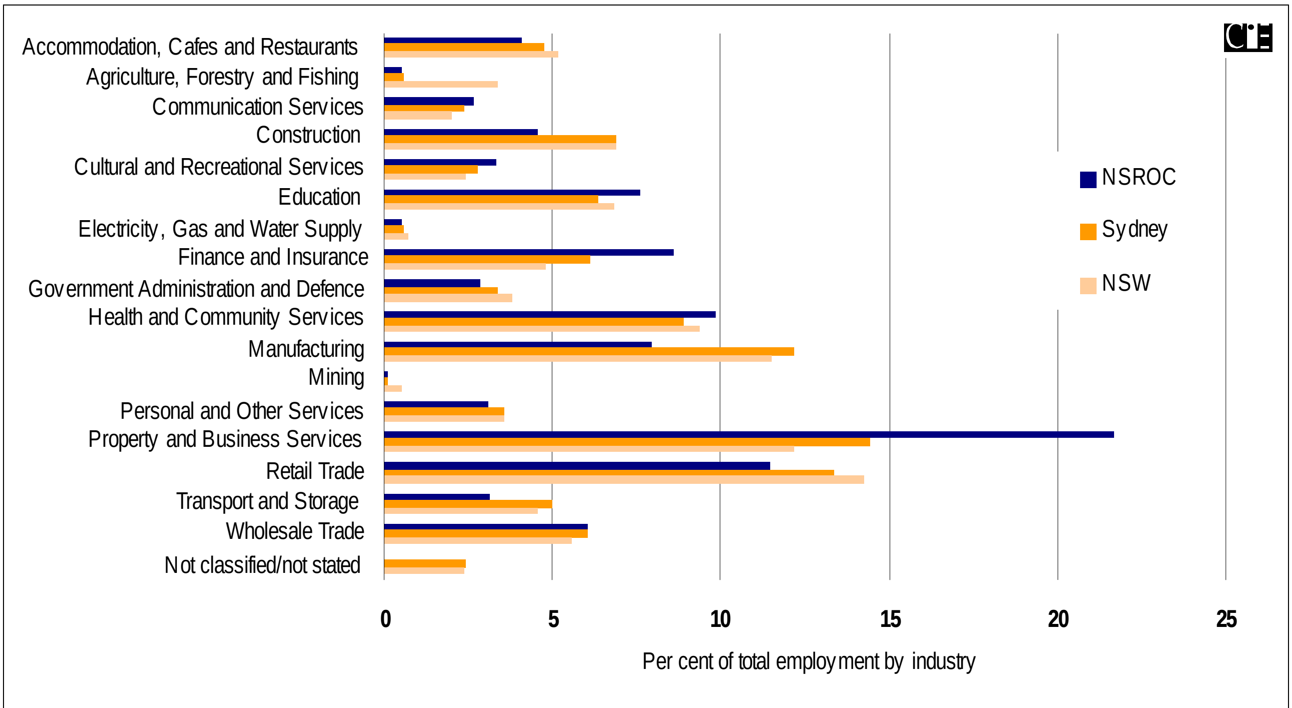
B.14 **Ryde employment by industry** 2001



B.15 **Willoughby employment by industry** 2001

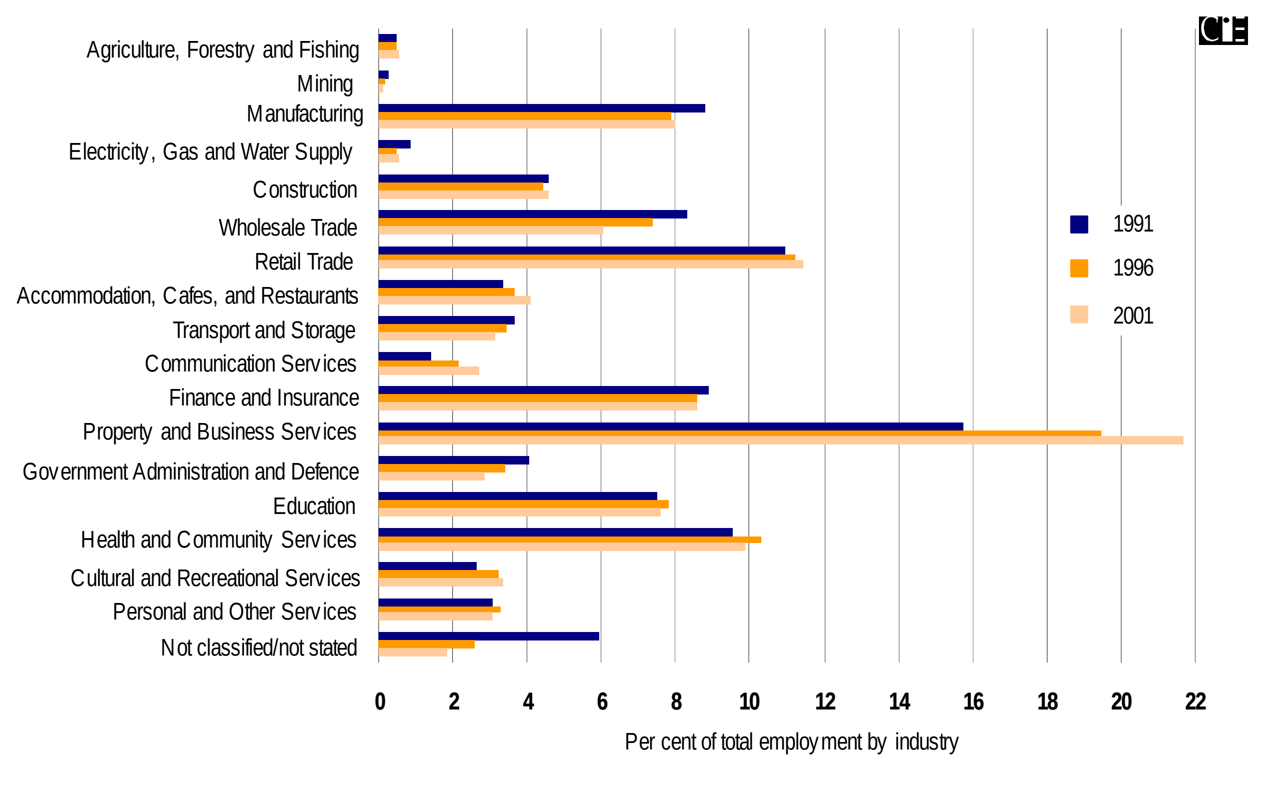


B.16 **NSROC employment by industry** 2001

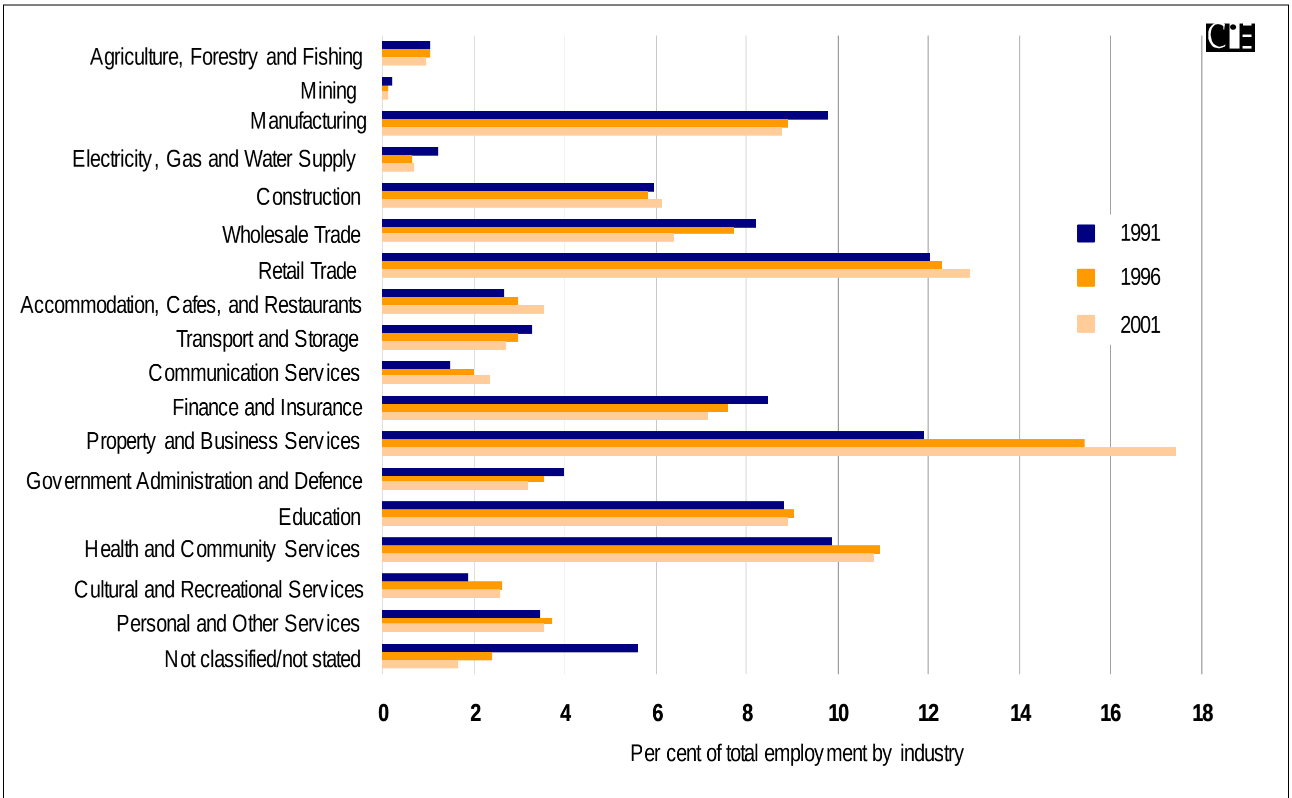


Employment by industry 1991-2001

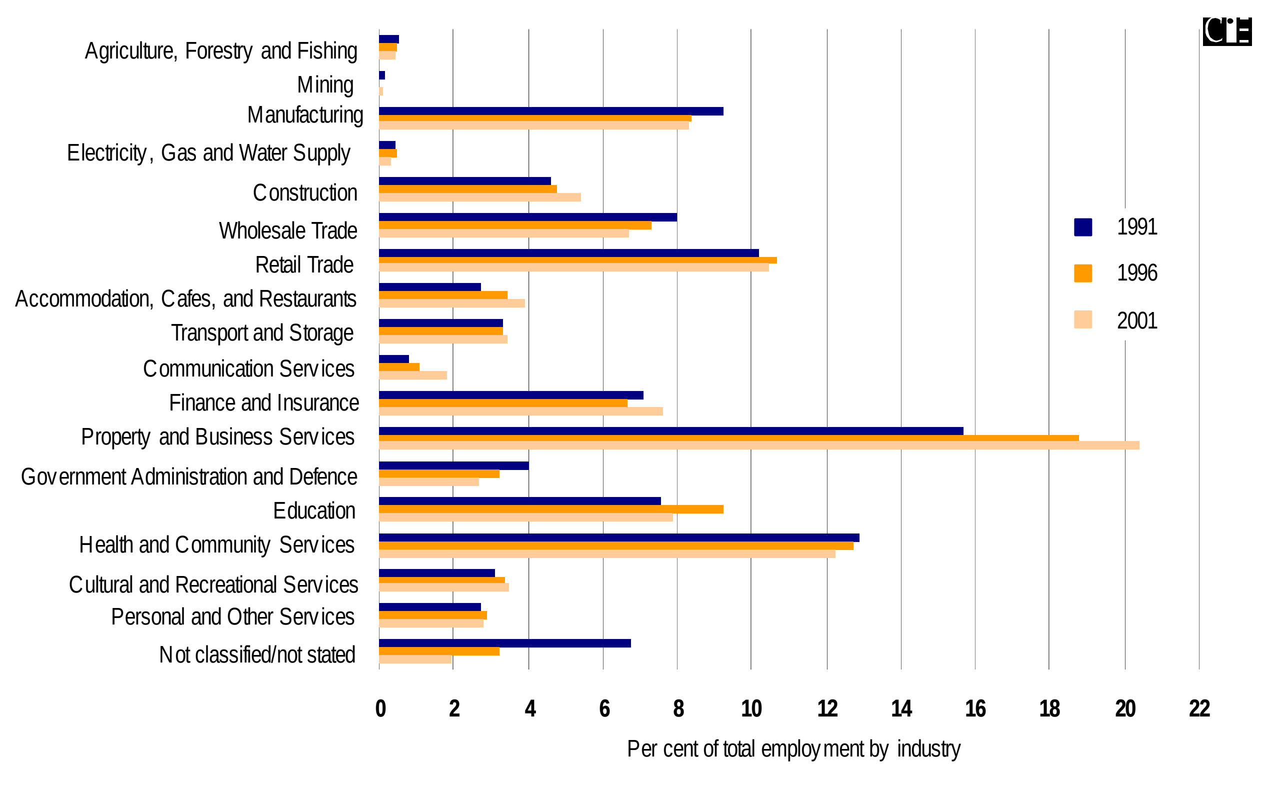
B.17 **NSROC employment by industry over time**



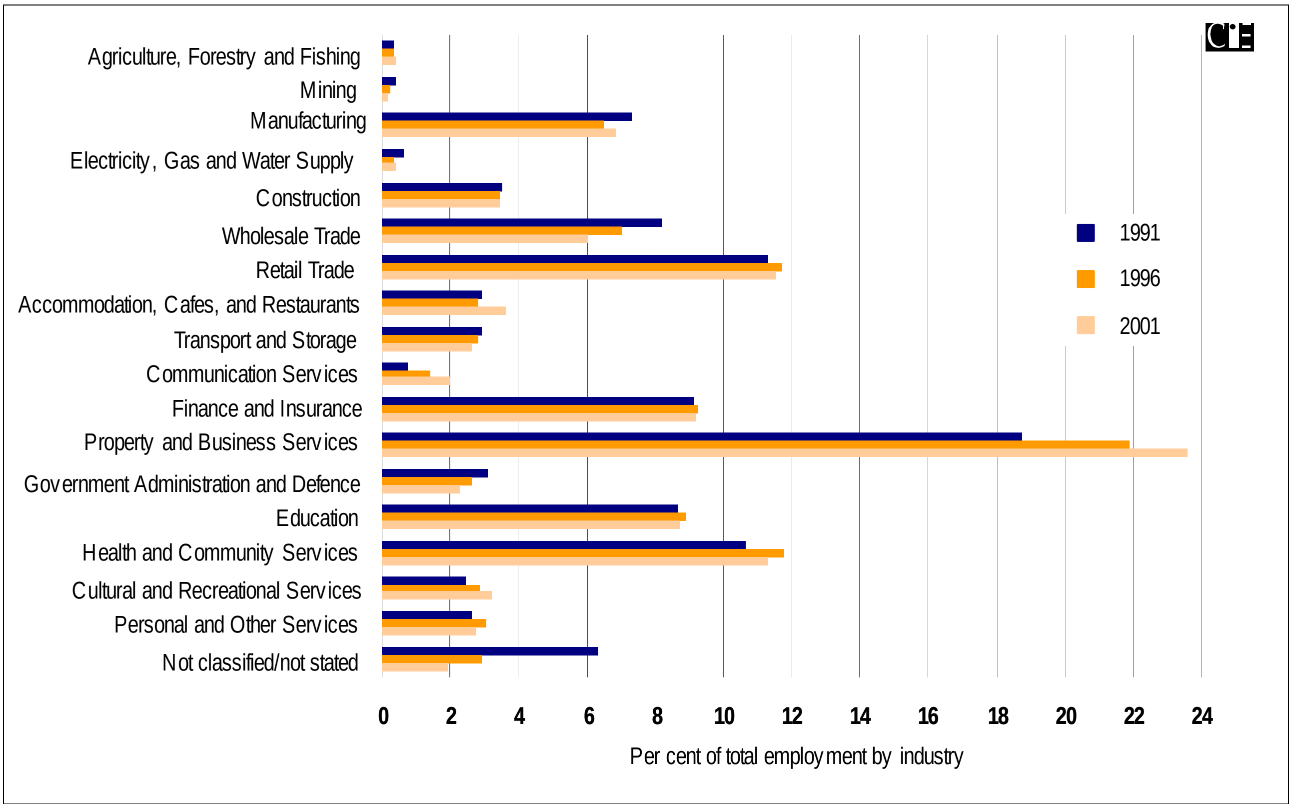
B.18 **Hornsby employment by industry over time**



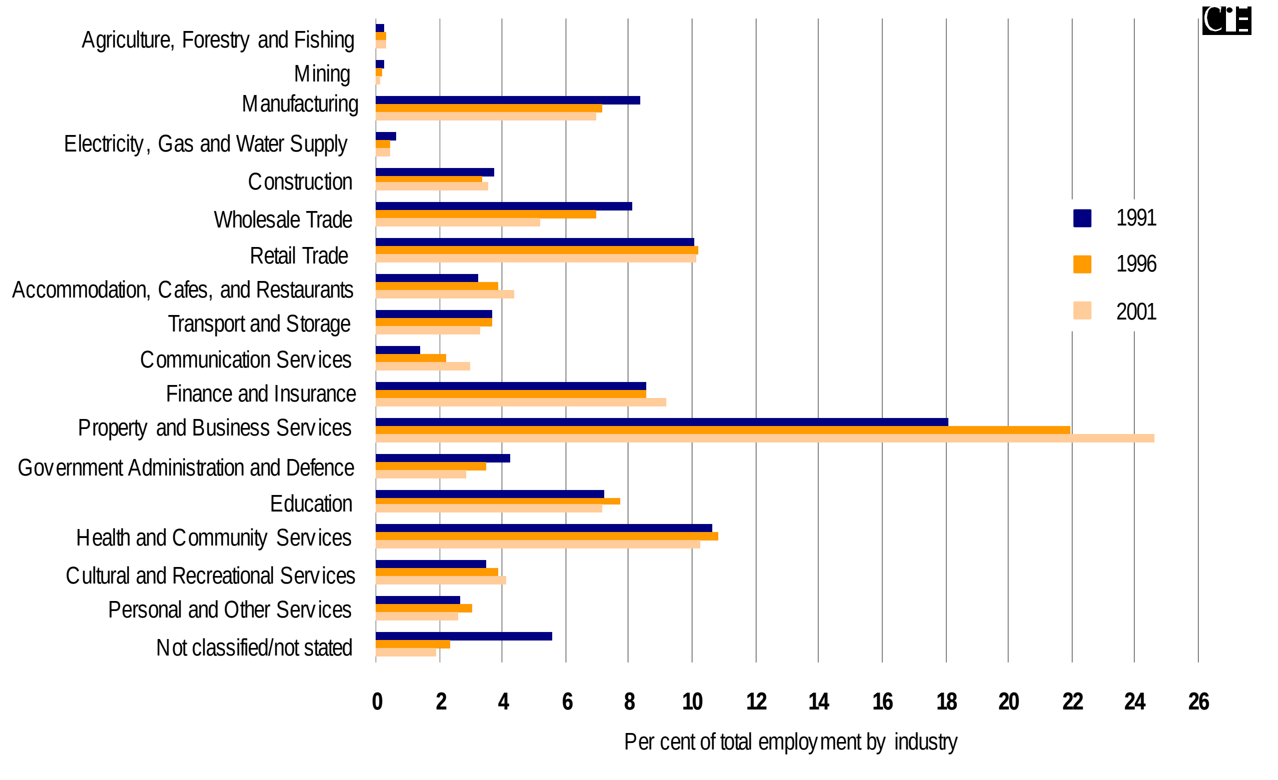
B.19 **Hunter's Hill employment by industry over time**



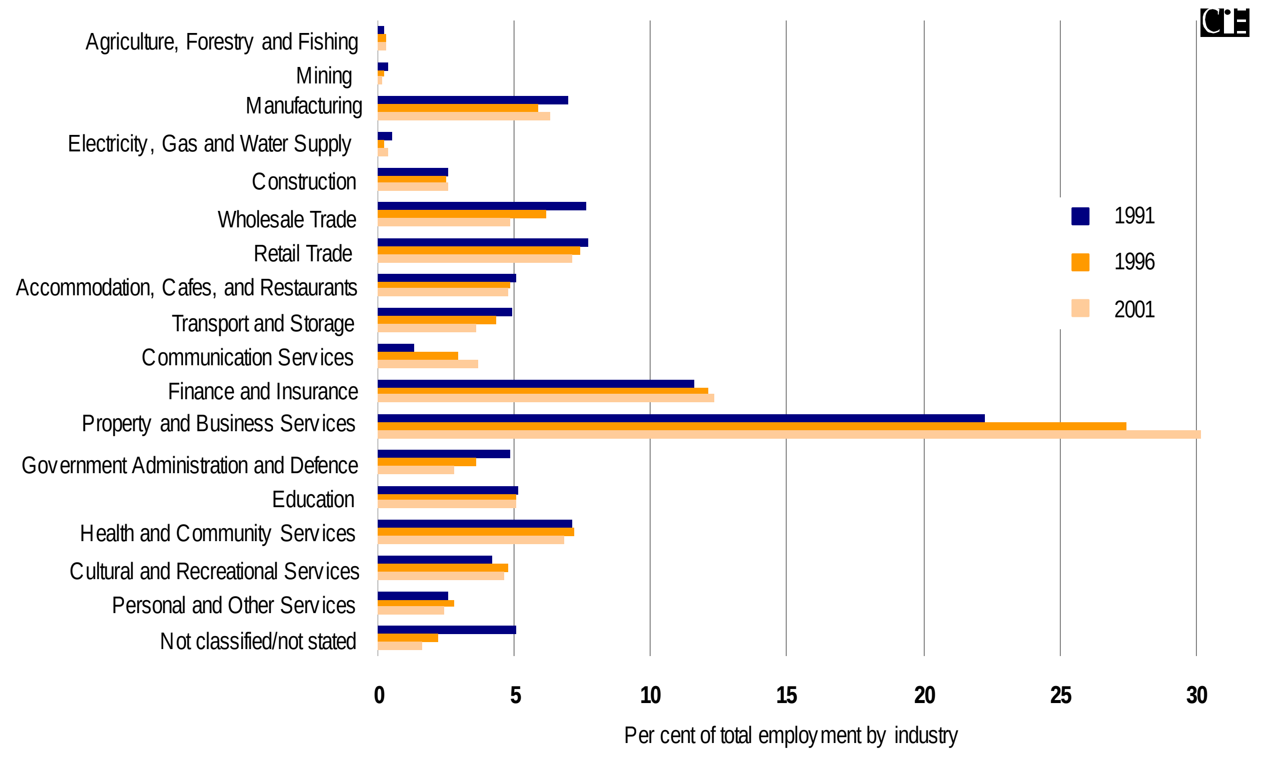
B.20 **Ku-ring-gai employment by industry over time**



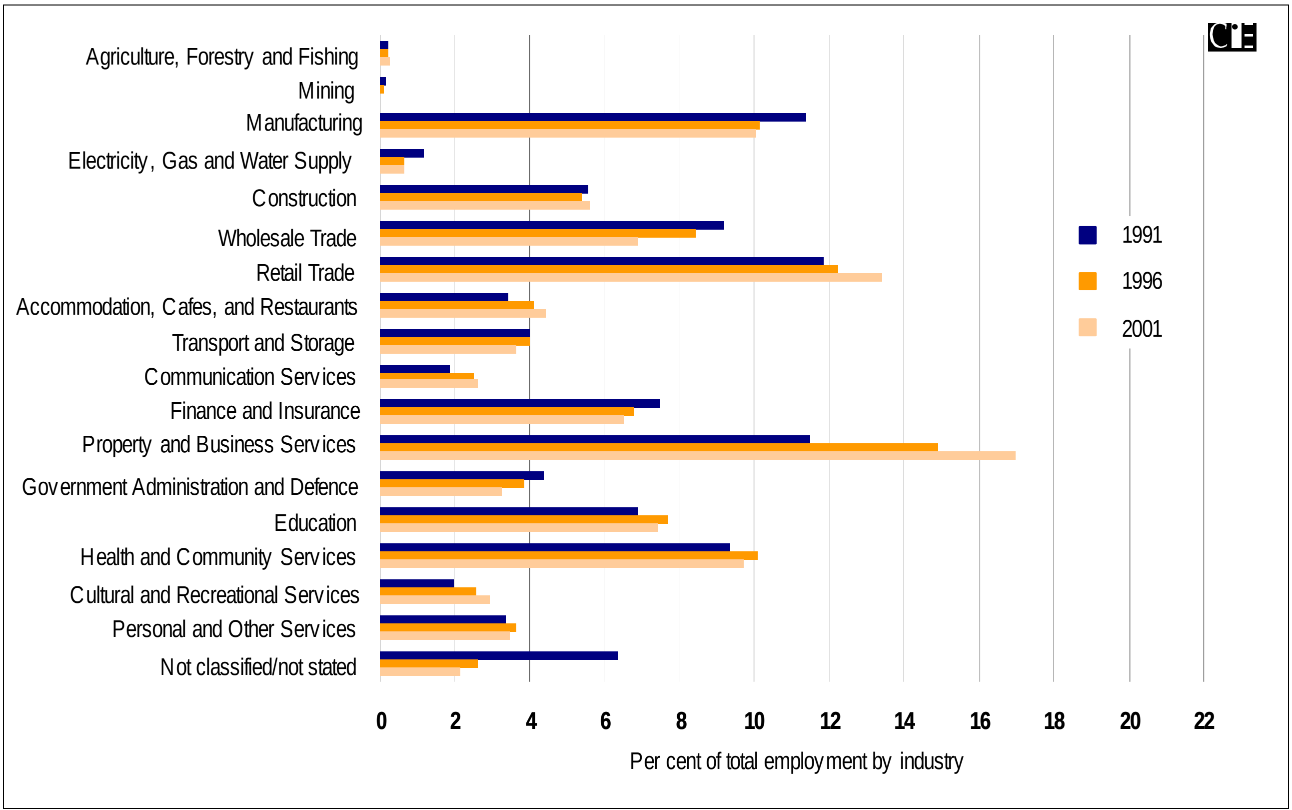
B.21 **Lane Cove employment by industry over time**



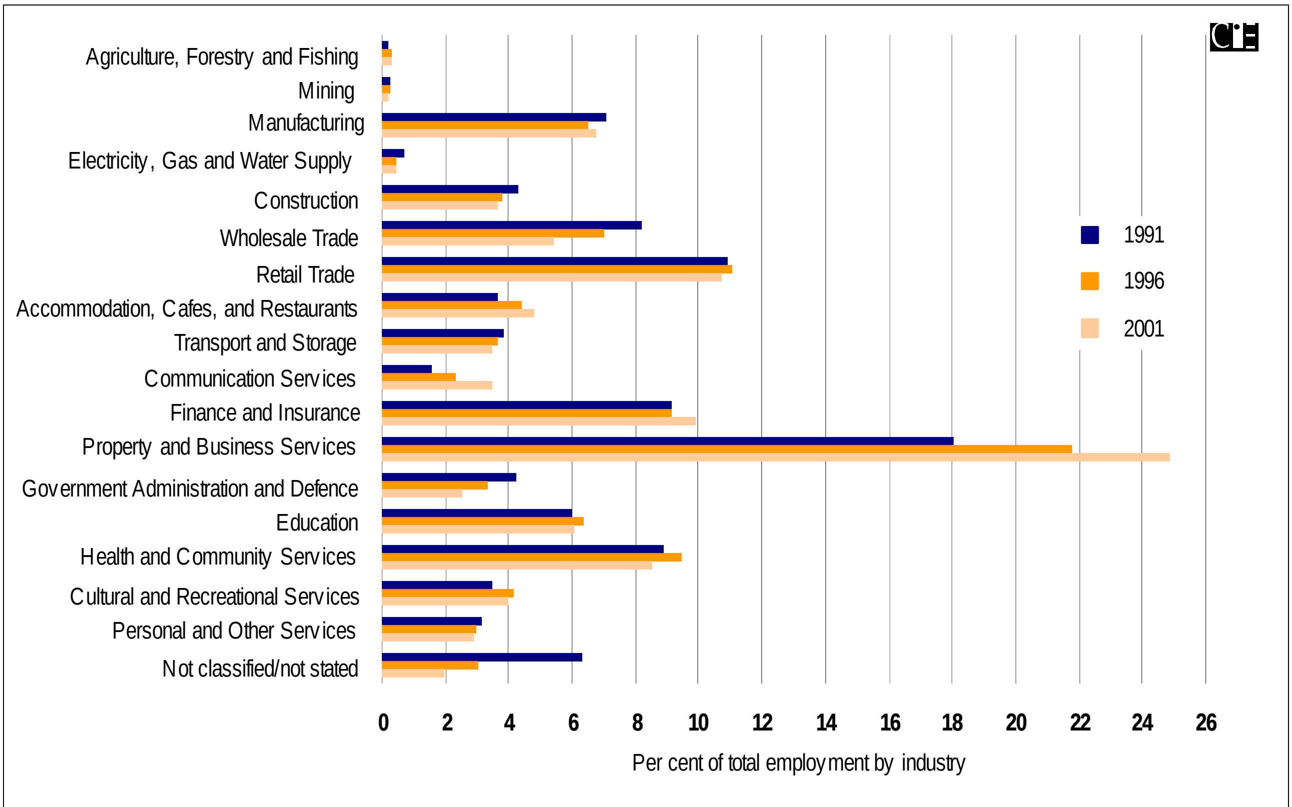
B.22 **North Sydney employment by industry over time**



B.23 **Ryde employment by industry over time**

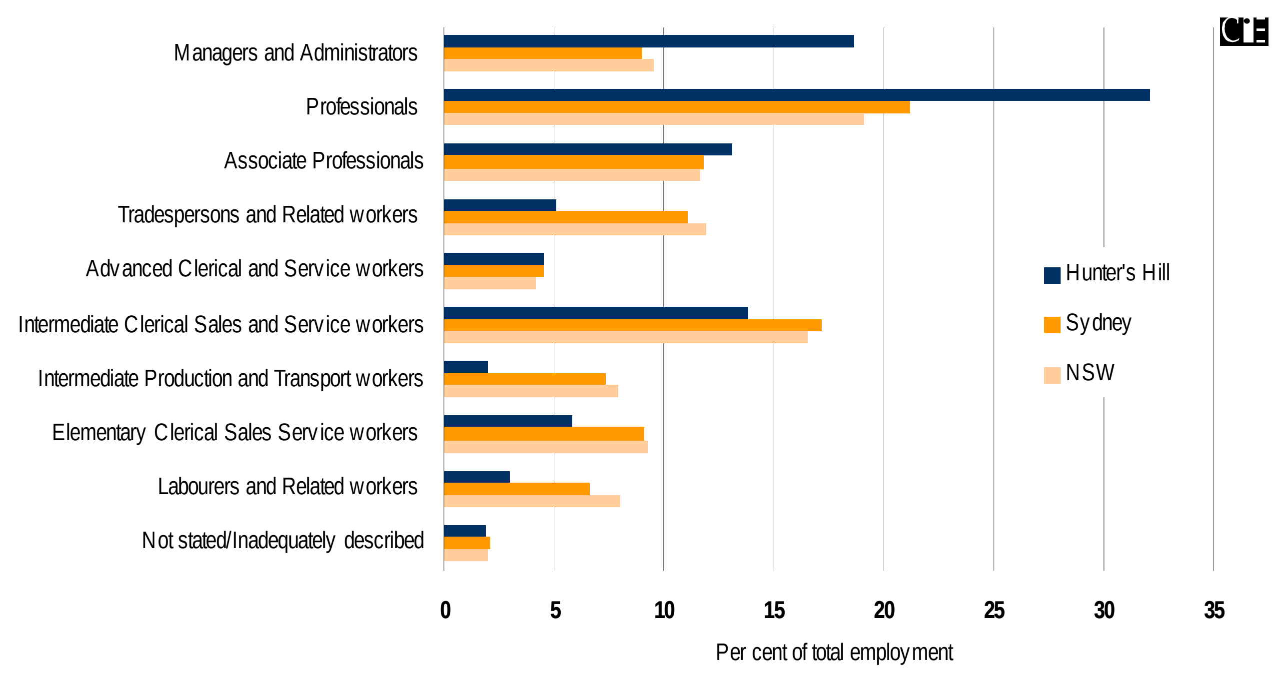


B.24 **Willoughby employment by industry over time**

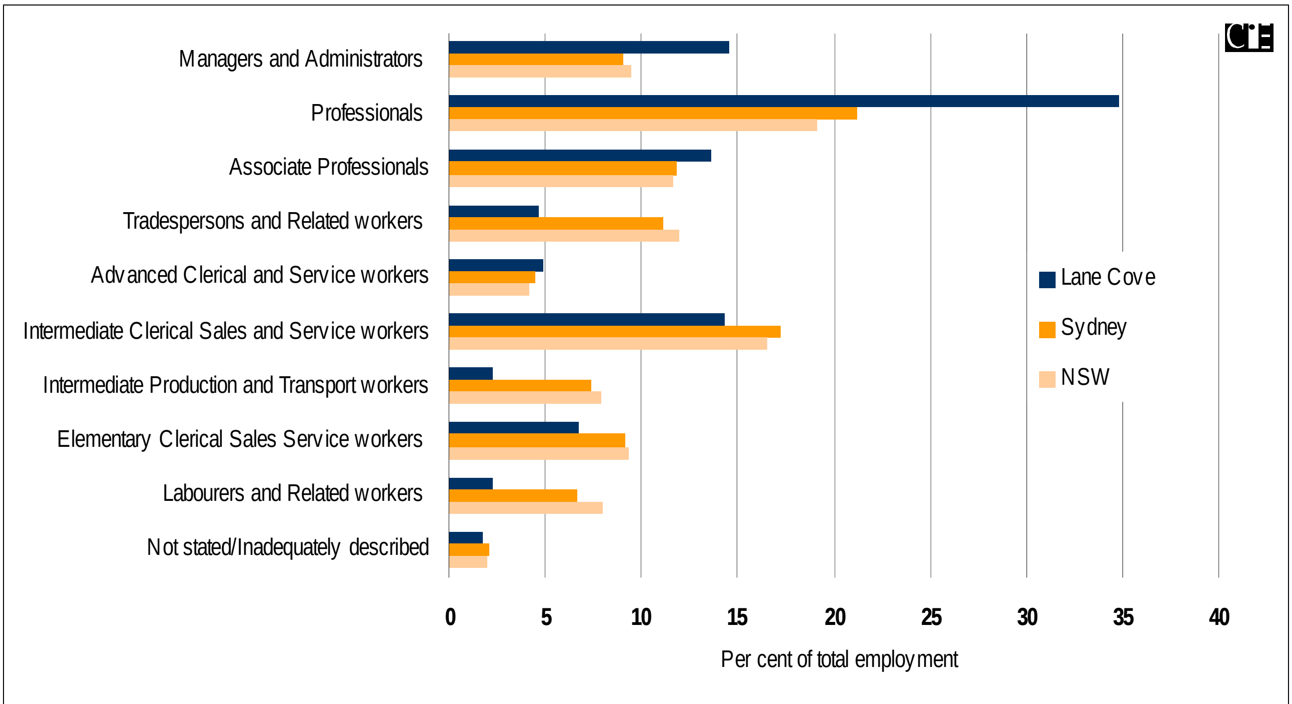


Occupation type by LGA

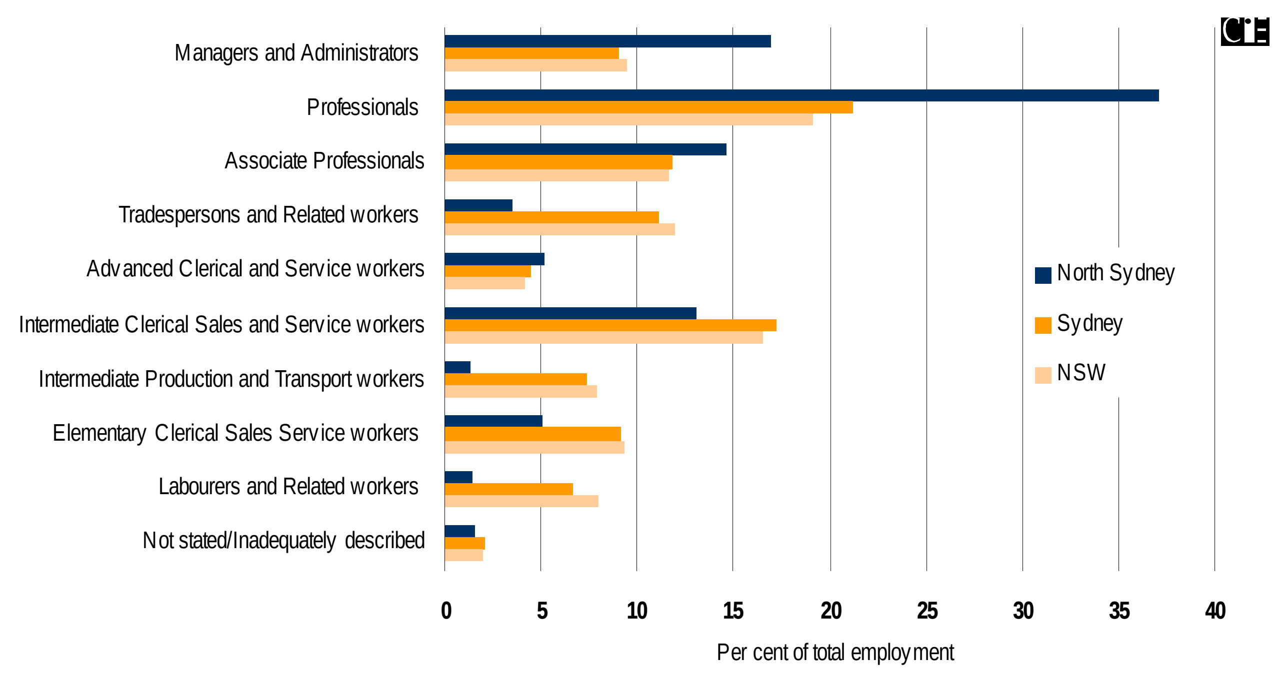
B.25 **Hunter's Hill - type of occupation** 2001



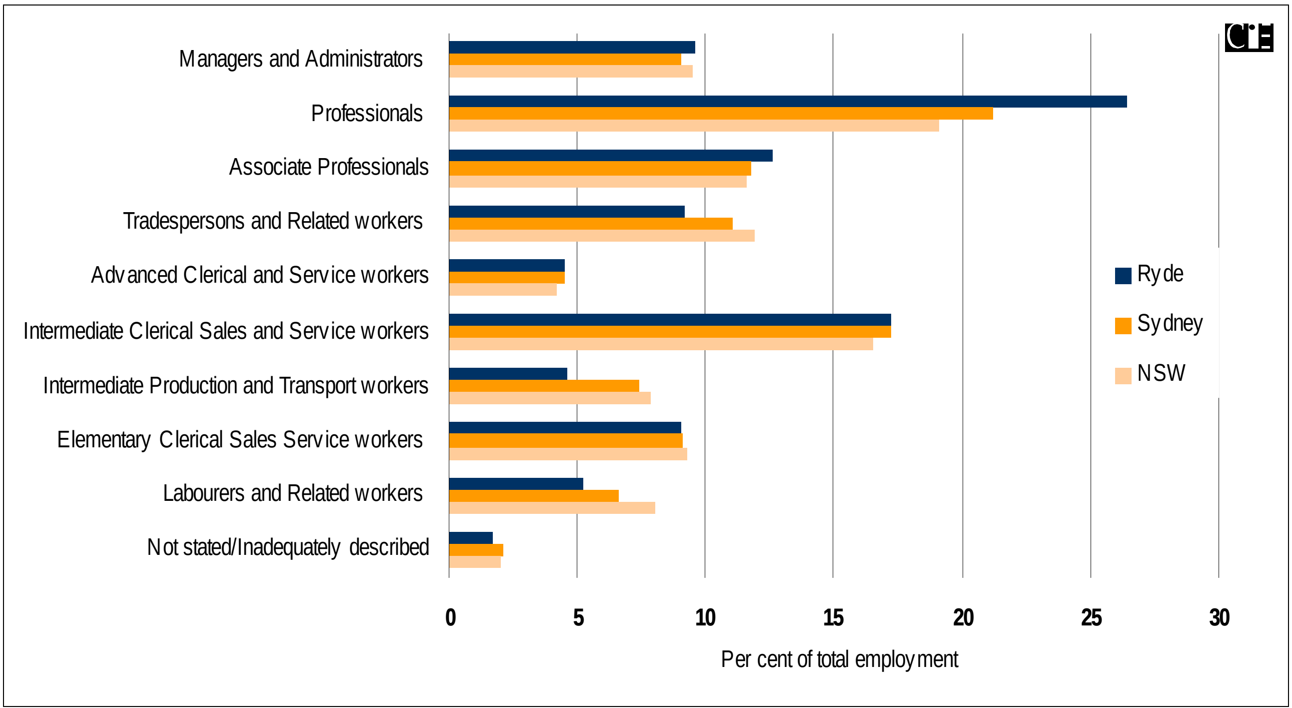
B.26 **Lane Cove - type of occupation** 2001



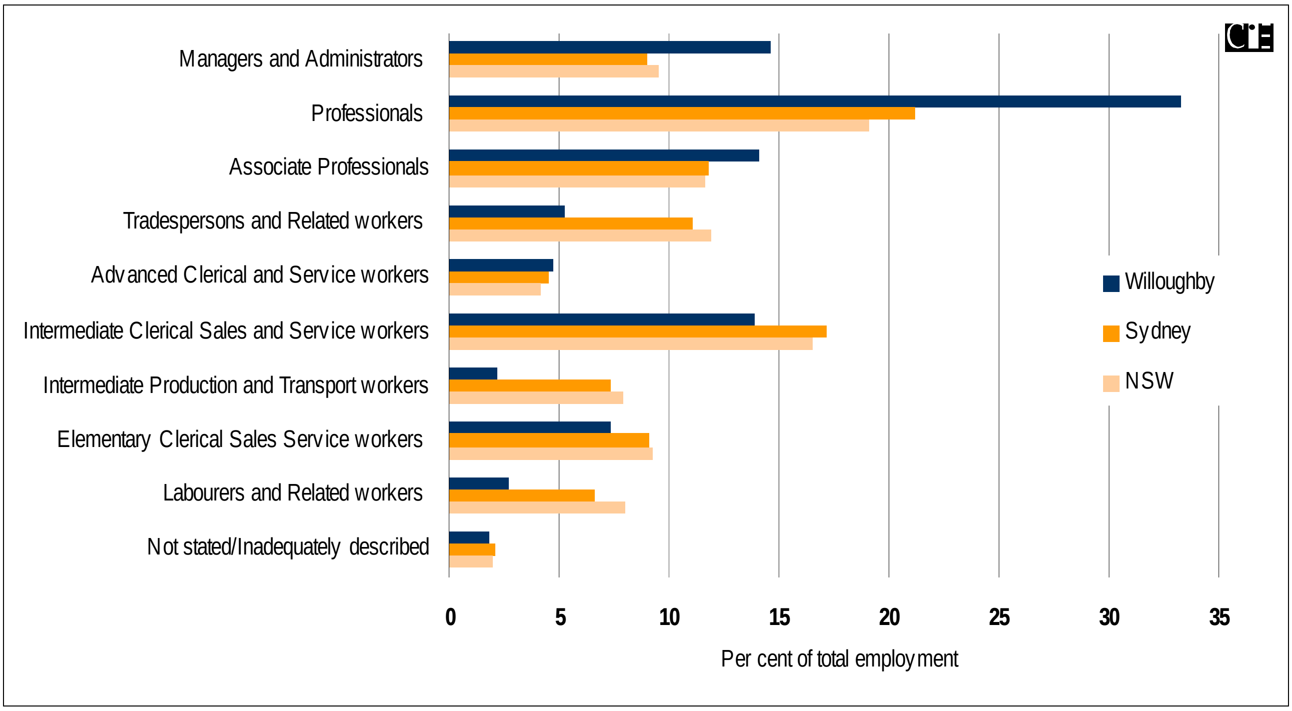
B.27 **North Sydney - type of occupation** 2001



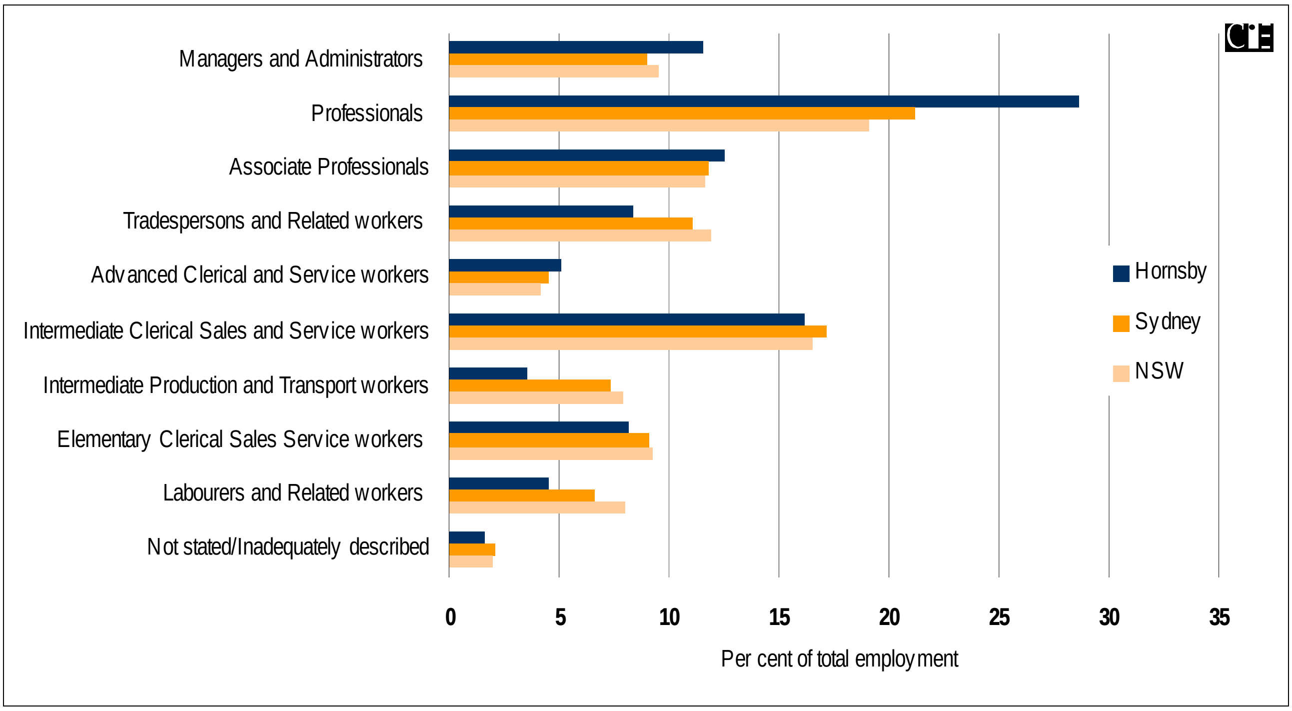
B.28 **Ryde - type of occupation** 2001



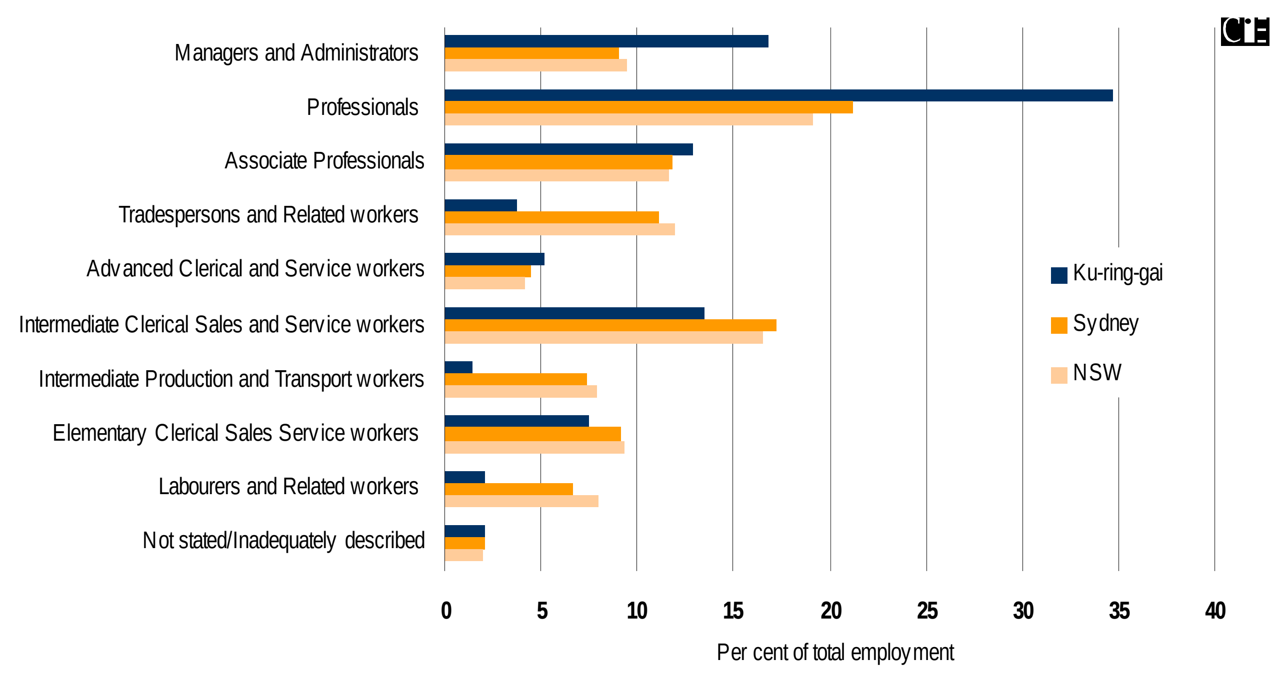
B.29 **Willoughby - type of occupation** 2001



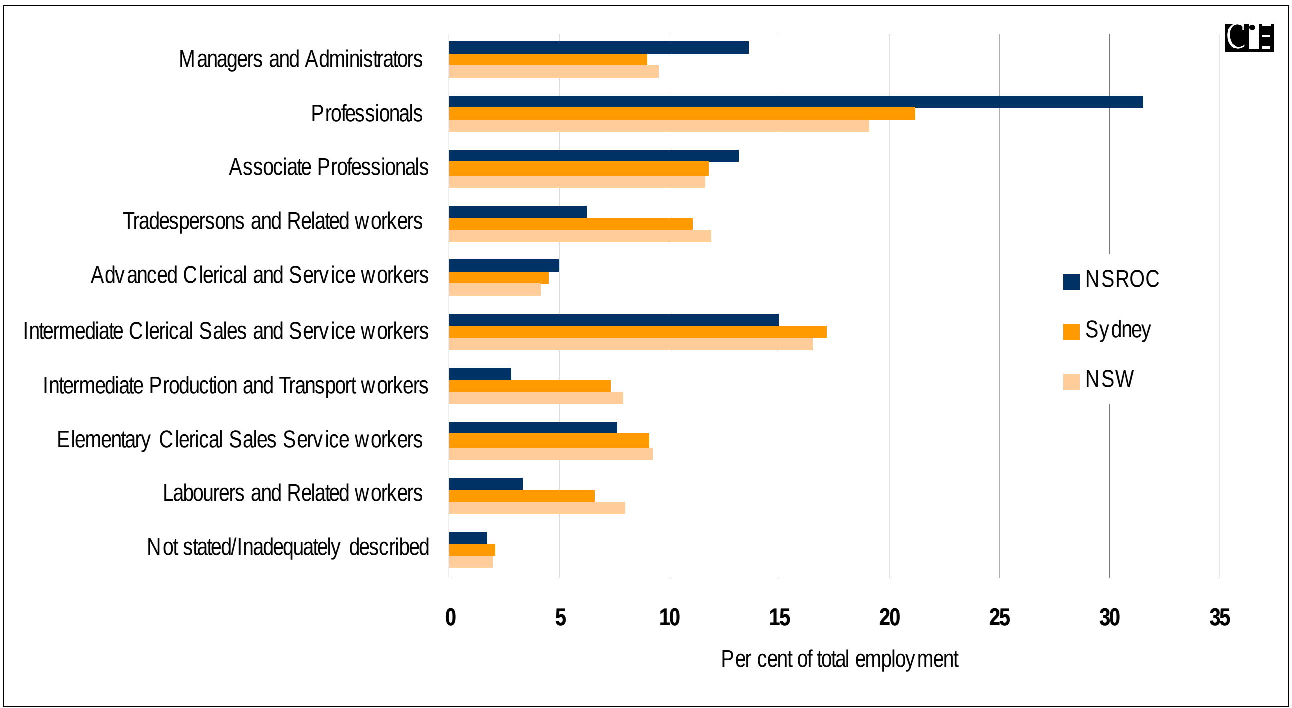
B.30 **Hornsby - type of occupation** 2001



B.31 **Ku-ring-gai - type of occupation** 2001



B.32 **NSROC - type of occupation** 2001



References

ABS (Australian Bureau of Statistics) 2001, Census data, Integrated Regional Database (IRDB), ABS, Cat. no. 1353.0.

—— 2001, Census of Population and Housing, Time Series Profiles for Hunter's Hill, Hornsby, Ku-ring-gai, Lane Cove, North Sydney, Ryde and Willoughby SLAs, Cat. no. 2003.0

—— 2001, Census of Population and Housing, Working Population Profiles Time Series Profile, for Hunter's Hill, Hornsby, Ku-ring-gai, Lane Cove, North Sydney, Ryde and Willoughby SLAs, Cat. no. 2006.0.

—— 2002, *Regional Statistics, New South Wales*, Cat. no. 1362.1.

—— 2004, *Australian System of National Accounts, 2003-04*, Cat. no. 5204.0.

Australian Information Industry Association (AIIA) 2002, *Profile of Successful Australian SMEs*, http://www.dcita.gov.au/__data/assets/word_doc/10419/Profile_of_Successful_Australian_SMEs.doc, Accessed November 18 2004.

Department of Local Government (DLG) 2004, *Comparative Information on New South Wales Local Government Councils 2002-2003*, DLG, Nowra.

Department of Regional and State Development 2003, *Sydney and New South Wales Leading Biotechnology in the Asia Pacific*, New South Wales Government, Sydney.

—— 2004, 'Key industries, biotechnology and pharmaceutical industries', http://www.business.nsw.gov.au/key.asp?cid=249&subCid=17, Accessed 17 November 2004.

North Sydney Council (NSC) 2003, *State of the Environment Report 2003*, http://www.northsydney.nsw.gov.au/asset/1/upload/SOE_Report_2003.pdf, Accessed 2 December 2004.

Northern Sydney Health 2003, *Northern Sydney Health Annual Report 2002/03*, http://www.nsh.nsw.gov.au/about/general/AnnReport.pdf, Accessed 16 November 2004.

Northern Sydney Regional Organisation of Councils (NSROC Organisation) 2004, 'Projects, http://www.nsroc.org, Accessed 2 December 2004.

—— 2002, *Regional Profile*, http://www.nsroc.org/documents/NSROC%20Profile%202002.pdf, Accessed 21 October 2004.

NSW Department of Housing 2004, 'Rent and sales reports', http://www.housing.nsw.gov.au/, Accessed 15 November 2004.

NSW Government 2002, *State Infrastructure Strategic Plan 2002*, http://www.treasury.nsw.gov.au/wwg/sisp.htm, Accessed 30 November 2004.

RTA 2004, *New South Wales Driver and Vehicle Statistics 2003*, http://www.rta.nsw.gov.au/publicationsstatisticsforms/downloads/stats_annual_2003.pdf, Accessed 1 December 2004.

Sydney Water Corporation 2004, *New LGA figures Show Across the Board Water Savings*, http://www.sydneywater.com.au/WhoWeAre/MediaCentre/MediaView.cfm?ID=226, Accessed 2 December 2004.