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ACRONYMS

BHCAD	Box Hill Central Activity District
CAD	Central Activity District
CAGR	Compound Annual Growth Rate
CBD	Central Business District
CPRS	Carbon Pollution Reduction Scheme
DIIRD	Department of Industry Innovation and Regional Development
DPCD	Department of Planning and Community Development
FCAD	Footscray Central Activity District
GFC	Global Financial Crisis
LGA	Local Government Area
JTW	Journey to Work
SEIFA	Socioeconomic Indexes for Areas
SLA	Statistical Local Area
TCF	Textiles, Clothing and Footwear
UGB	Urban Growth Boundary

EXECUTIVE SUMMARY

This report documents the continuing growth and transition of the Western Region identified in the 2004 report by the Centre for Strategic Economic Studies (Sheehan and Wiseman 2004). It follows a number of reports about the Region (NIEIR 2004; LeadWest 2008), in each of which strategies that seek to better integrate the Western Region into the knowledge economy are developed. The Region's outer suburbs are growing as rapidly as any in the State, requiring the conversion of large areas of rural land to urban use. Parts of the Region are also undergoing gentrification and Chapter 2 discusses in some detail the nature, extent and possible implications of this transformation of some of the Inner West's suburbs. In particular, it shows the magnitude of the influx of better qualified, higher income professionals into these suburbs and their strong attachment to the CBD for employment opportunities. Chapter 3 examines the proposals to establish a Central Activities District with CBD-like functions at Footscray. The development of the Sunshine Activity Centre is also considered. Chapter 4 assembles evidence of the formation of a spatial labour market or employment corridor linking the southern Laverton, Sunshine employment node to the Melbourne Airport and manufacturing areas of Hume LGA. Chapter 5 examines the likelihood of being able to develop a university-based technology cluster at the Werribee Employment Precinct using the Monash technology precinct as a case study. Finally in Chapter 6, the educational outcomes of the Western Region are analysed and in this context something of VU's attempt to better understand its student population and deal strategically with the Region through its Industry Cluster approach is discussed.

The principal findings arising from this detailed analysis of these particular developments in the region include the following:

- As part of the socioeconomic transformation of the Western Region, the Inner West is undergoing significant gentrification. In the period 2001 to 2006 this has resulted in the movement of a large number of highly qualified professionals to the Inner West. A large component of the gentrification of the Inner West, in addition to those from other parts of inner Melbourne, has been driven by the arrival from overseas of well-qualified migrants, particularly from India, who with their links to a rapidly growing economy, could emerge as a significant asset to the West. Although currently the job orientation of the 'gentrifiers' is towards the CBD, potentially they provide a highly qualified workforce for firms and organisations in the Western Region.
- Our analysis of the current Footscray CAD identified a multitude of challenges to be overcome to create a centre with CBD-like functions. The extent of continuing disadvantage in Footscray, despite the gentrification taking place nearby, suggests the need for concerted policy action to address the development of Footscray as a CAD.
- Employment corridors in the manufacturing and transport sectors are in the process of development in the Outer West linking nodes in the south, focussed on Laverton/Sunshine, with nodes in the north around Melbourne Airport and manufacturing areas of Broadmeadows/Craigieburn. These nodes draw a substantial proportion of their workforce from the Western Region, with linkages enhanced by the Western Ring Road.

- Universities can be effective catalysts of economic development, as the Monash case study illustrates. The JTW data suggests that employment in the Monash cluster is of the order of 15,000-25,000 jobs. However this has been a long process. Monash University began from a greenfields site in the early 1960s. The development of the cluster benefited from consistent public investment in related infrastructure over many decades. It is only relatively recently that professional and business services have become a significant employer. Monash has benefited from the development of two complementary labour markets including one located in the inner east providing highly skilled staff. A socioeconomic analysis of Wyndham shows a community with quite high average incomes, but low education levels and a low propensity to seek higher education. However a comparison of Monash employment structure in 1981, by which time the Monash University campus was well established, and Wyndham in 2006 shows that there are many similarities in the two employment structures. This illustrates that significant structural change can be achieved over many decades with the application of consistent.

Two particular themes have emerged from this study. One is the path dependent nature of the continuing evolution of the Western Region and its key institutions, of which the University is one. That is to say the region is, to a large extent, a captive of its history as a manufacturing region, and while the population is diverse, it includes some of the most disadvantaged residents of metropolitan Melbourne. On average, education outcomes, skill levels, occupational status and incomes are lower than the average for Melbourne. The gentrification of the Inner West introduces a more highly skilled, better educated group with higher incomes to the West, which is potentially a labour force to fill professional jobs in the West. However, to date their orientation has been towards jobs in the CBD.

The extent of this disadvantage pervades all strategies to further transform the West and improve its integration with the global knowledge economy. It impacts on the prospects of Footscray to fulfil the ambitions of the State Government for it to become a CAD with an array of CBD-like service functions. Even for the above-average income LGA of Wyndham, the low educational outcomes and relatively poor qualifications of its residents presents an additional challenge to the development of a Monash-type technology cluster developing at the Werribee Employment Precinct.

It also impacts on the nature of what Victoria University has to offer the Region. The University is potentially a powerful institution that can help transform the West. However, its courses reflect the region's historical requirements. Its primary antecedent body was the Footscray Institute of Technology, itself a reincarnation of Footscray Technical College, which had successfully served the requirements of local manufacturers for practical engineers and sound accountants since 1916 (Rasmussen 1989). The University is also a victim of structural change. The demise of manufacturing has adversely affected the demand for the courses it has traditionally provided, although its previous role as an educator of accountants has remained a comparative strength. As argued in Chapter 6, its focus has been on the middle rung of the professions with those in the region seeking the 'higher (income) professions', travelling mainly to Melbourne University. VU's opportunity is to exploit its traditionally close relations with industry to develop courses in emerging areas of demand. While its previous incarnations date back to early in the previous century, its mission as a university is less than two decades old.

The second theme is the fragmentation of the Region's key institutions and facilities. In seeking to place in the West one of the CADs belonging to a future polycentric Melbourne, there are a number of

candidates. Footscray's candidature is made more difficult by a number of factors discussed in this report, but none less so by the dispersed location of key activity centres outside the immediate boundary of the CAD. This includes the Western General Hospital and Highpoint, one of the largest regional shopping complexes in Australia. Sunshine has much to offer, with the Sunshine hospital and two VU campuses nearby, but again these are sufficiently removed from the activity district to reduce the likelihood of complementary service industries developing.

The large tract of government owned land at Werribee offers great potential to be transformed into a significant activity centre in the longer term. The government is investigating a number of options for its development, designed to optimise the value of its large landholding. One option incorporates a university-based technology cluster. The development of the Monash technology cluster has been a 50-year project, but it has benefited from a number of factors that would need to be reproduced in some way at Werribee. One is the outward growth of Melbourne that ultimately placed Monash at its geographic centre, a large complementary labour market of well-qualified staff in the inner east, and the consistent addition, by public sector investment, of supporting infrastructure and facilities, the most important of which has been the Monash Medical Centre. The Clayton campus has always been Monash University's principal campus and is itself a significant location of teaching and research jobs. VU's campuses in contrast have been scattered throughout the region, none of them on a scale equal to Monash. An investment in a virtually greenfields site such as Werribee would appear to be a significant distraction to VU's present campus consolidation plans. Nor is VU a strong research university. Its research efforts tend to be small scale and specialised. This is changing however. The Institutes of Sustainability and Innovation, and Transport and Logistics, in particular, could be developed at Werribee in conjunction with local industry at Wyndham LGA and elsewhere in the Region.

This argues for a policy response that acknowledges the path dependant nature of regional development. Although path dependency does not exclude quite rapid change, when multiple factors combine to alter the existing trajectory, it does suggest that policy responses need to be cognisant of the existing path of development and of the market forces which are bearing on that development. In implementing the proposed initiatives for Footscray, Sunshine and Werribee in particular the timeframes may be quite different. Whereas Footscray demands immediate attention with development occurring over the next decade, better integrating the Sunshine activity centre may have a 20-30 year timeframe and given the experience of the Monash technology cluster, the development of the Werribee Employment Precinct may be best regarded as a 50-year project.

PREFACE

BACKGROUND

This report on the Western Region has been commissioned by Victoria University, and the Victorian Departments of Industry, Innovation and Regional Development (DIIRD) and Planning and Community Development (DPCD). It updates an earlier 2004 report for the University by the Centre for Strategic Economic Studies, *Investing in Melbourne's West: A Region in Transition* (Sheehan and Wiseman 2004).

The Centre's 2004 report, by Professors Sheehan and Wiseman, was concerned with documenting the degree to which the West had 'transitioned' from a depressed manufacturing region to one more closely linked to the development of the knowledge-based economy. In the period reviewed in that report, the West's quite rapid growth had been achieved by high levels of population growth and private sector investment taking advantage of low cost land.

The report described the nature of this growth as being in an 'extensive' phase in which growth was driven by increasing levels of factors of production, in particular, labour and capital arising from population growth, but at relatively low rates of productivity. It argued that it was a further challenge to bring the transition into an 'intensive' phase with a higher proportion of jobs with increasing knowledge intensity and rising output per head, leading to higher real incomes and higher real incomes per capita.

The key factors that could have helped shift this transition to an intensive phase had not been functioning. Public sector investment in the West still lagged other regions, which was reflected in low levels of knowledge and social capital. Health services and particularly, medical research were underdeveloped. Employment patterns indicated a below-average engagement with the more advanced knowledge-based service activities. Moreover, residents with these sorts of jobs tended to find them outside the region. Overall, there was a net exodus of residents from the region to their places of work.

The report argued in favour of higher levels of public investment, not only in the more obvious areas of education, health and transport infrastructure, but also in the creative arts, sport and recreation needed to address lifestyle and related issues. There was also a need to develop a strategy to increase the number of higher order knowledge jobs in the region. It was suggested that this could be achieved by a combination of enhanced skills training and increased employment opportunities in advanced knowledge economy sectors.

Since then a number of developments have occurred, the most important of which is a series of planning initiatives designed, in particular, to facilitate the continuing rapid growth of the West and to address the low level of knowledge-intensive jobs in the region. The University is designated as having, or likely to have, a significant role in a number of these initiatives. Its response to the Government's planning proposals forms an important part of the equation.

POLICY CONTEXT

Since the earlier CSES report, the policy context has evolved in significant ways. In particular in updating the initial 2002 planning document *Melbourne 2030*, the Victorian Government has increased its focus on the Western Region of Melbourne in important ways. In responding to public comment and also the sharply increased projections of Melbourne's population growth, its revised planning document, Melbourne @ 5 million, outlined the need to direct future growth to the north and west of Melbourne and to cluster jobs in Central Activities Districts and employment corridors.

Melbourne, with a population of five million, is planned to move from a monocentric to a polycentric city in which more jobs would be located closer to where people live. In particular, the updated plan designated six new Central Activity Districts (CAD), each with an enhanced set of CBD-like functions. They would be the focus of future employment and public investment. Employment corridors would be established 'to improve accessibility to jobs and services and reduce congestion on the transport network' (DPCD 2008).

Overall the plan contemplates a more concentrated city where established areas are to accommodate 53 per cent of new dwellings and growth areas 47 per cent. Criteria would be established to assess any changes to the Urban Growth Boundary (UGB). Moreover, a means of ensuring the financing of the growth areas through a 'Growth Areas Infrastructure Contribution' was announced.

The Victorian Transport Plan, released at the same time as Melbourne@5 million and based on the settlement patterns contained in that plan, announced a set of very significant transport initiatives designed to reshape accessibility within and to and from the Western Region. They included:

- rail tunnel linking Footscray with Parkville and St Kilda Rd ($4.5 billion);
- tunnel alterative to West Gate Bridge ($2.5 billion);
- truck Action Plan including new link from the West Gate Freeway ($380 million);
- new rail lines Tarneit ($4 billion), new stations (Caroline Springs) and station upgrades;

which by themselves once implemented are likely to have a sizeable impact on employment patterns in the Western Region.

These projects are in addition to a Victorian Government commitment of $52.1 million over four years, arising from the *Melbourne 2030* to revitalise Footscray as part of the *Melbourne 2030* Transit Cities Program (Footscray Renewal). Projects include:

- an upgrade of Nicholson Street mall and other main streets in central Footscray;
- a new, modern pedestrian bridge and public forecourt at Footscray station to improve access and safety;
- assistance with development of strategic sites in the station precinct; and
- a new one-stop planning shop for the marketing and development of central Footscray.

REPORT OBJECTIVES

The University is an important institution in the Western Region. Its strategic aims about how it serves the Region and participates in its development have an important bearing on regional outcomes. These range from infrastructure decisions, such as those about campus location, to what courses are

conducted where. In particular, the University is a participant in the development of the activity centres at Footscray and Sunshine and potentially a key player in a technology cluster to form part of the development of the Werribee Employment Precinct. Of course its primary role is to provide tertiary education to a high proportion of those living in the West seeking such an education. As such, it has a pivotal role in providing the skills base for many of those who will work in the West. The kinds of jobs and where they are likely to located is of great strategic importance to the University.

Accordingly, the principal objective of this report is to provide an analytical base for the University's decision making with respect to the Government's key initiatives in the Western Region, that are of most relevance to the University. In doing so however, the University is seeking to better inform the debate about these proposals and to assist in their realistic appraisal. In this regard the University has welcomed the participation in this report of the two central Victorian Government Departments, DIIRD and DPCD. For the two Departments, it is hoped that the report will add to the evidence base for it to better define and develop its policies for the West.

The particular initiatives considered in this report are:

- Development of the Werribee Employment Precinct. The plans outlined incorporate a major role for the University in developing a business centre with a technology focus. There are possible lessons to be drawn from the Monash technology cluster which will be considered here.
- Footscray CAD. The DPCD has already undertaken valuable detailed economic, social and demographic work on the Footscray CAD and this has been integrated into the Centre's work outlined in this report.
- Sunshine Principal Activity Centre. Detailed socioeconomic data has been analysed to better understand the nature of the transition in Sunshine, including the impact of the University's development of its Sunshine campus.
- The development of employment corridors serving employment nodes in the Outer West.

CHAPTER 1. CONTINUING ECONOMIC AND SOCIAL TRANSITION

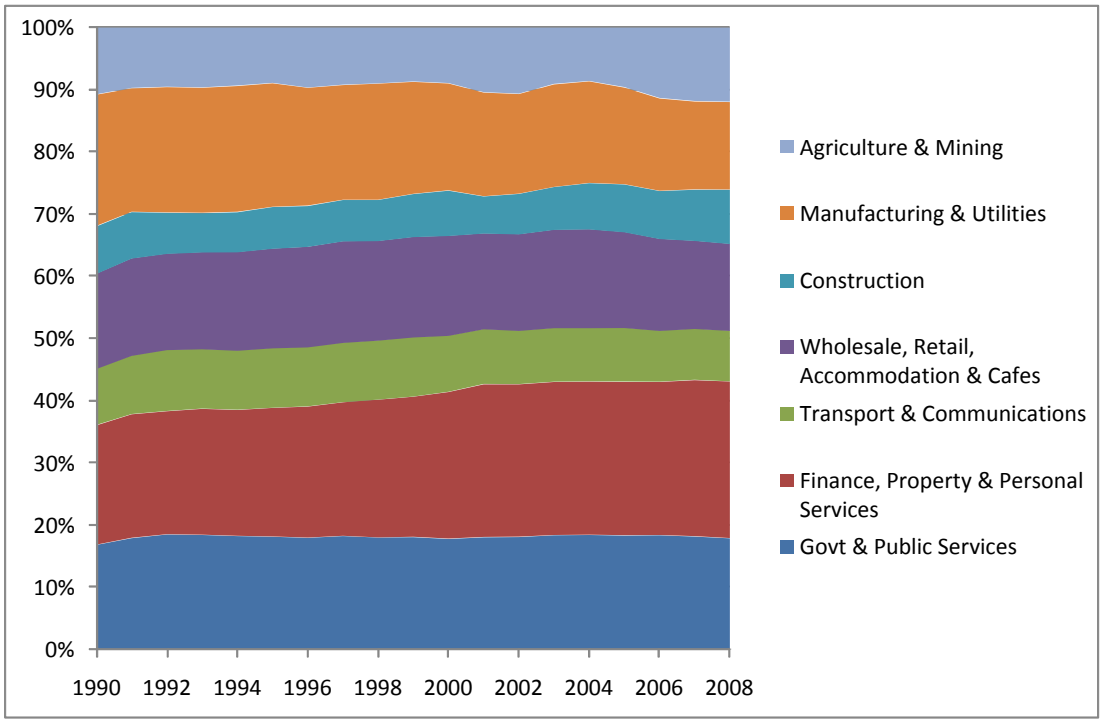
The first task is to update a previous report prepared by the Centre for Strategic Economic Studies on the Western Region (Sheehan and Wiseman 2004) for more recent data, in particular the 2006 ABS Census with its detailed population, education, employment, occupation and journey to work data (ABS 2001, 2006, 2007a). This section of the report is largely concerned with presenting the results of the analysis of that data. In particular, this more recent analysis examines the nature of the growth in the region and whether the transition has shifted from an 'extensive' to a more 'intensive' phase.

STRUCTURAL CHANGE IN THE ECONOMY

Australia

The structure of Australia's economy has changed significantly over the period since 1990 with growth in the service sector (with finance, property and business services increasing share of output from 19 to 25 per cent between 1990 and 2008) and the decline in manufacturing (from 21 to 14 per cent including utilities) (see Chart 1.1).

CHART 1.1 SECTORAL COMPOSITION OF AUSTRALIA'S OUTPUT, 1990-2008



Source: ABS (2009a).

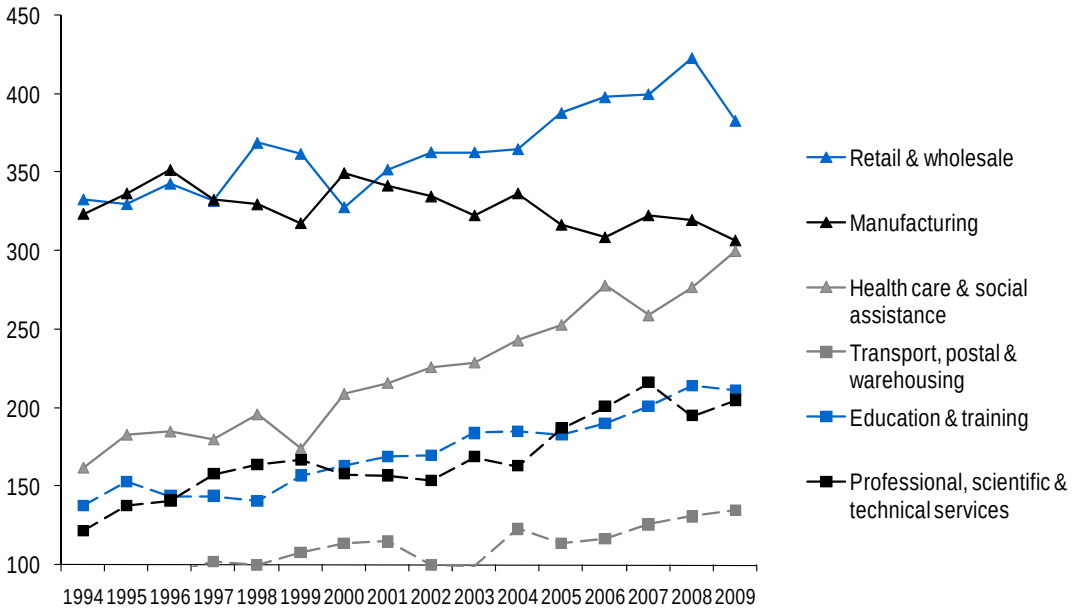
Victoria

In Victoria too, growth in employment has been in service sectors, such as:

- professional, scientific and technical services;
- health care and social assistance;
- construction;
- education and training;
- transport, postal and warehousing; and
- retail and wholesale.

These trends, measured in terms of employment, are shown for the largest six sectors in Chart 1.2 below.

CHART 1.2 TOTAL EMPLOYMENT BY MAJOR SECTORS, VICTORIA, 1994 TO 2009



Source: ABS (2009b).

Over the period shown, employment in the combination of retail and wholesale trade has overtaken employment in manufacturing which has been in decline. The fastest growing of the six sectors shown however, is employment in health care and social assistance which has almost doubled over the 15-year period. Other service sectors such as professional scientific and technical services, education and training and transport, postal and warehousing have also demonstrated a consistent upward trend.

Employment Trends in the Western Region[1]

There are two ways of measuring employment in a region. One measures the employment of those living in the region and the other the number of jobs in the region. The journey to work (JTW) data reveals the extent of travel to and from the region both of those who either live in the region or those who work in it. Table 1.1 shows the industry composition of those who live in the region.

TABLE 1.1 EMPLOYMENT BY MAJOR INDUSTRY: VICTORIA AND WESTERN REGION COMPARED

INDUSTRY (RANKED BY CAGR)	WESTERN REGION 2006 (%)	VICTORIA 2006 (%)	GAP 2006 (%)	CAGR OF EMPLOYMENT, VICTORIA 2004 TO 2009
Professional, scientific & technical services	6.3	7.4	-1.0	4.7%
Health care & social assistance	8.7	10.6	-1.9	4.3%
Construction	7.0	7.4	-0.4	4.1%
Education & training	6.8	7.9	-1.1	2.7%
Transport & storage	8.1	4.5	3.5	1.9%
Accommodation, cafes & restaurants	5.8	5.8	0.0	1.8%
Retail & wholesale	16.3	16.8	-0.5	1.0%
Public administration & safety	6.0	5.3	0.7	-1.7%
Manufacturing	14.7	12.8	1.9	-1.8%
Total selected	79.6	78.4	1.1	0.7%
Other	20.4	21.6	-1.1	3.5%
Total	100.0	100.0	0.0	2.1%

Note: CAGR = compound rate of growth.
Source: ABS Census data (2007a); ABS (2009b).

Table 1.1 above lists the major industry sectors ranked by rate of growth in Victoria over the five-year period to August 2009. It compares the proportion of persons employed by sector of the Western Region workforce and that for Victoria in 2006. It shows that, in general, the employment share in the Western Region is low relative to Victoria for the faster growing sectors. For instance, health care and social assistance has grown at 4.3 per cent per annum for the last 5 years, but only 8.7 per cent of the Western Region workforce works in the sector compared with 10.6 per cent for Victoria. This shows one dimension of the jobs/skills gap. People living in the West tend to work disproportionately in the slower growing sectors. That could be because they lack the skills to work in the higher growth service sectors or the West is deficient in those jobs, or a combination of the two.

Journey to Work

Table 1.2 below highlights the difference for each industry sector between the jobs in the region in a sector (total employment in region) and those who live in the region and work in that sector (residential employment). It shows the number going out of the region to work and those coming in.

In 2006 about half of the resident work force left the region to work. Those who stayed tended to work in retail, education and training. Those who left were concentrated in a range of business, financial and public sector services, information, media and telecommunications. In particular:

[1] The Western Region consists of: the Inner West LGAs of Hobson's Bay, Marybyrnong and Moonee Valley; and the Outer West LGAs of Melton, Wyndham and Brimbank.

- 66.4 per cent in property and business services (which includes professional and technical services);
- 77.4 per cent in information media and telecommunications; and
- 84.2 per cent in financial and insurance services;

left the Region to work.

TABLE 1.2 WESTERN REGION EMPLOYMENT FLOWS IN SELECTED SERVICE SECTORS, 2001 AND 2006

INDUSTRY	TOT. EMP. IN REGION	RES. EMP.	GOING OUT	WORK IN	TRANSFERS IN	NET	SHARE OF RESIDENT EMP. OUTSIDE REGION 2006	2001
Construction	11,761	17899	10033	7866	3,895	6,138	56.1	41.0
Transport, postal & warehousing *	16,295	20686	10331	10355	5,940	4,391	49.9	50.5
Wholesale trade	10,998	13111	6389	6722	4,276	2,113	48.7	49.4
Retail trade	25,123	28644	9140	19504	5,619	3,521	31.9	33.2
Accommodation, cafes & Restaurants	9,515	14813	7060	7753	1,762	5,298	47.7	57.8
Property & business services*	9,326	19,740	13,100	6,640	2,686	10,414	66.4	66.0
Education & training*	16,328	17363	6384	10979	5,349	1,035	36.8	34.7
Health care & social assistance*	16,487	22191	10499	11692	4,795	5,704	47.3	45.3
Arts & recreation services*	2,274	4786	3098	1688	586	2,512	64.7	51.5
Other services*	7,015	9223	4004	5219	1,796	2,208	43.4	45.3
Electricity, gas, water & waste services	1,295	1848	1114	734	561	553	60.3	61
Information media & telecommunications*	2347	6040	4676	1364	983	3693	77.4	78.6
Financial & insurance services	2557	12,073	10,163	1910	647	9516	84.2	82.4
Public administration & safety*	11,061	15,240	8579	6661	4400	4179	56.3	52.6
Administrative & support services*	5013	10,090	6594	3496	1517	5077	65.4	
Total employment	183,096	255,926	128,681	127,245	55,851	72,830	50.3	48.5

Note: * Differences in industry definitions between 2001 and 2006 mean that comparison should be made with caution.
Source: ABS Journey to Work data (2001, 2006).

The reliability of a comparison by industry sector of the share of residential employment outside the region between the two years 2001 and 2006 is uncertain because of definitional changes. However, overall the proportion of those travelling outside the region to work has, if anything, increased from 48.5 per cent in 2001 to 50.3 per cent in 2006.

No region is necessarily self-contained. However, a region with a strongly growing economy will tend to create jobs in high-growth industries that draw employees to the region. As shown in Table 1.2 the residents of the Western Region tend to work disproportionately in lower-growth industry sectors. The

journey to work data allows us to identify the trends in jobs located in the region. However, these trends are affected by the very different rates of population growth being experienced across the region.

The Inner West LGAs of Hobson's Bay, Maribyrnong and Moonee Valley are growing relatively slowly, while the Outer West, particularly the LGAs of Melton and Wyndham, is growing rapidly. The relative growth rates are shown in Table 1.3 below. Overall the Inner West is growing at only 0.8 per cent compared with 4.0 per cent for the Outer West over the period 2001-2008.

TABLE 1.3 WESTERN REGION POPULATION BY LGA

YEAR TO JUNE 30TH	2001	2006	2008	GROWTH 2001 TO 2008 CAGR
Hobson's Bay	83,367	84,820	86,121	0.5%
Maribyrnong	61,226	66,145	69,825	1.9%
Moonee Valley	105,054	111,553	108,909	0.5%
Inner West	249,647	262,518	264,855	0.8%
Brimbank	168,247	174,746	181,115	1.1%
Melton	52,830	80,911	92,465	8.3%
Wyndham	87,141	116,001	132,793	6.2%
Outer West	308,218	371,658	406,373	4.0%
Western Region	*557,865*	634,176	671,228	2.7%
Melbourne	347,1625	3,744,373	3,892,419	1.6%
Total Victoria	4,804,726	5,128,310	5,313,823	1.4%

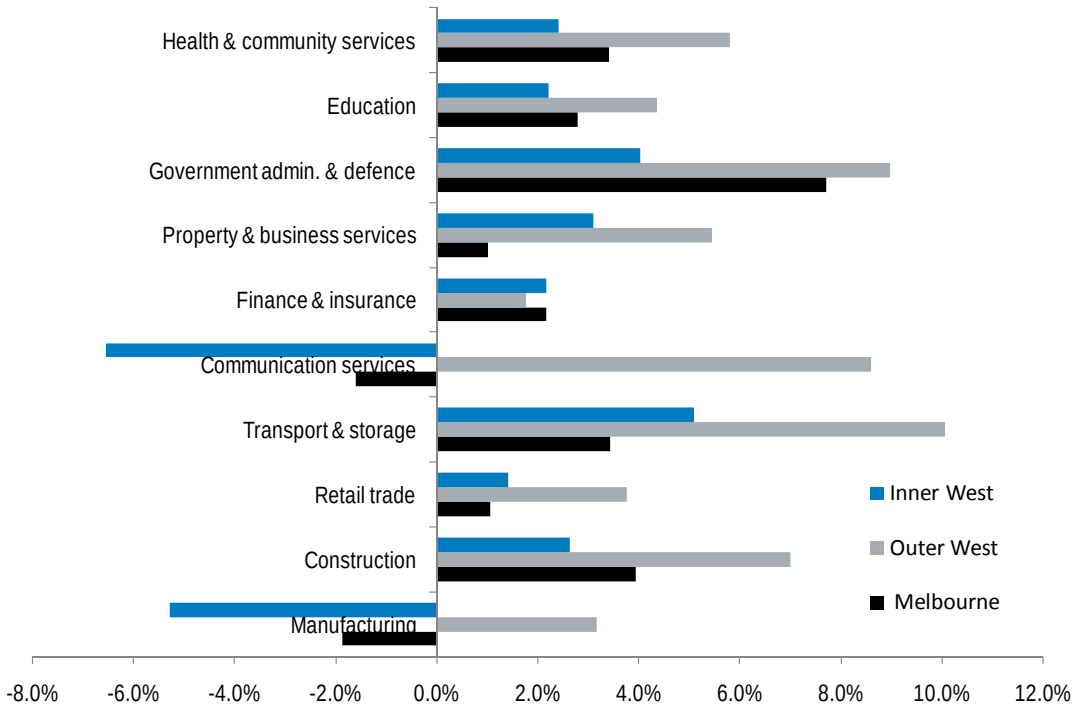
Note: CAGR = compound annual growth rate.
Sources: ABS (2007b, 2009a); DPCD (2009).

Some of the jobs growth in the Western Region arises from growth of particular industry sectors in the Western Region, as elsewhere in the metropolitan area, but some of the growth arises from the rapid population growth in the Outer West. These differences are shown in Chart 1.3 below, which shows the growth in jobs in the region by sector for the Inner and Outer West, as well as for Greater Melbourne, over the period 2001 to 2006.

The high rate of growth in jobs in the Outer West in many of the sectors would appear to be related to population growth. These include health and community services, education, property services and construction. Some of the growth, such as in transport and storage, reflects the movement of industry to the region. The rates of growth in the more slowly growing Inner West sectors are, in general, less than the metropolitan average. This includes health and community services, education and government. The decline in both manufacturing and communication services (which includes printing) in the Inner West and their expansion in the Outer West suggests that jobs are being relocated from the Inner to the Outer West.

Overall this analysis supports the proposition that most of the growth in the Western Region is extensive rather than intensive. A high proportion of the growth in jobs is in the Outer West, reflecting the high growth in population. Sectors experiencing high rates of travel to jobs outside the region such as professional and technical services and finance and insurance services are generating few jobs in the region. Nonetheless, some of the new jobs are in the more rapidly growing knowledge intensive sectors such as health and education.

CHART 1.3 GROWTH IN JOBS IN THE WEST AND MELBOURNE COMPARED, SELECTED SECTORS, 2001-2006



Source: ABS Journey to Work data (2001, 2006).

Occupational Structure and Gentrification

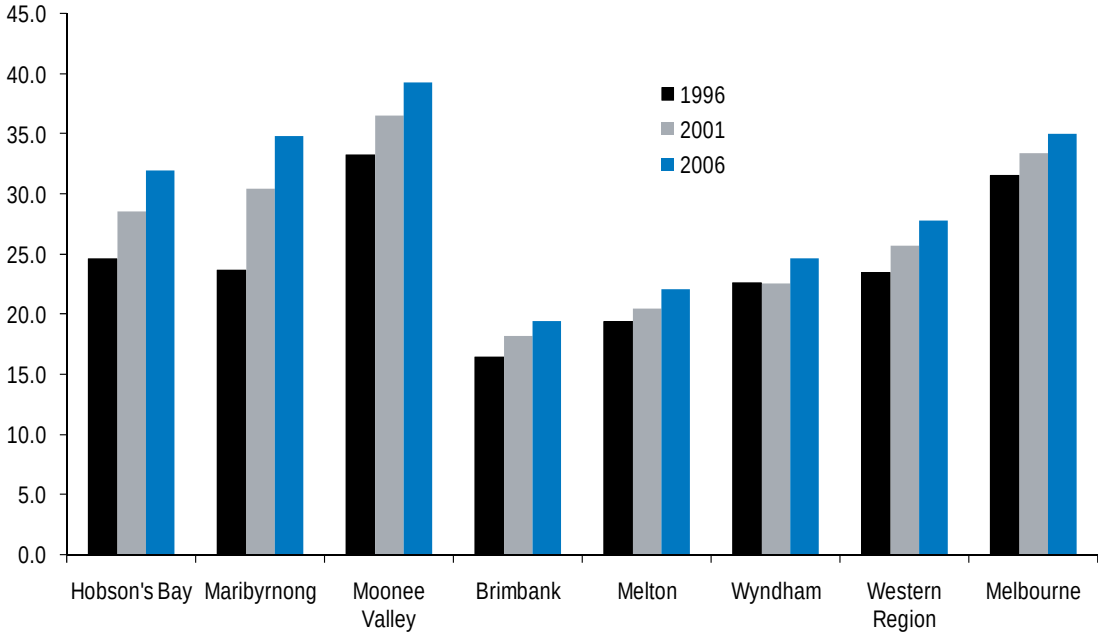
One of the key indicators of occupational status is the proportion of professionals and managers. It is both an indicator of people living in region with knowledge intensive jobs and higher than average incomes. So it is a useful indicator of social change and particularly of gentrification.

Overall the proportion of managers and professionals living in the Western Region is lower than Melbourne, but there is considerable diversity across the region. Chart 1.4 below shows the proportion of managers and professionals by Western Region LGA for the three census years 1996, 2001 and 2006. The proportion in the Outer West is particularly low, although it has been rising in line with the rest of Melbourne. However the proportions for the Inner West LGAs are closer to the Melbourne average and somewhat higher in the case of Moonee Valley, and have been increasing markedly, particularly in Maribyrnong where gentrification has been evident.

While the occupational structure suggests that the proportion of managers and professionals is still lower than the Melbourne average, it has been growing more rapidly in the West than in Melbourne (see Chart 1.5). In part this is because of the rapid population growth in the Outer West, where those in employment have grown by 4.1 per cent per annum between 2001 and 2006. As can be seen in the chart, the proportion of the population who are managers and professionals has been growing above this average. Proportionately, however, the growth of managers and professionals in the Inner West has been even higher. Compared with the average growth in employment of 1.3 per cent per annum between 2001 and 2006, the growth of managers and professionals has been almost three times this rate, 3.3 per cent and 3.1 per cent per annum respectively. There have been other changes in the

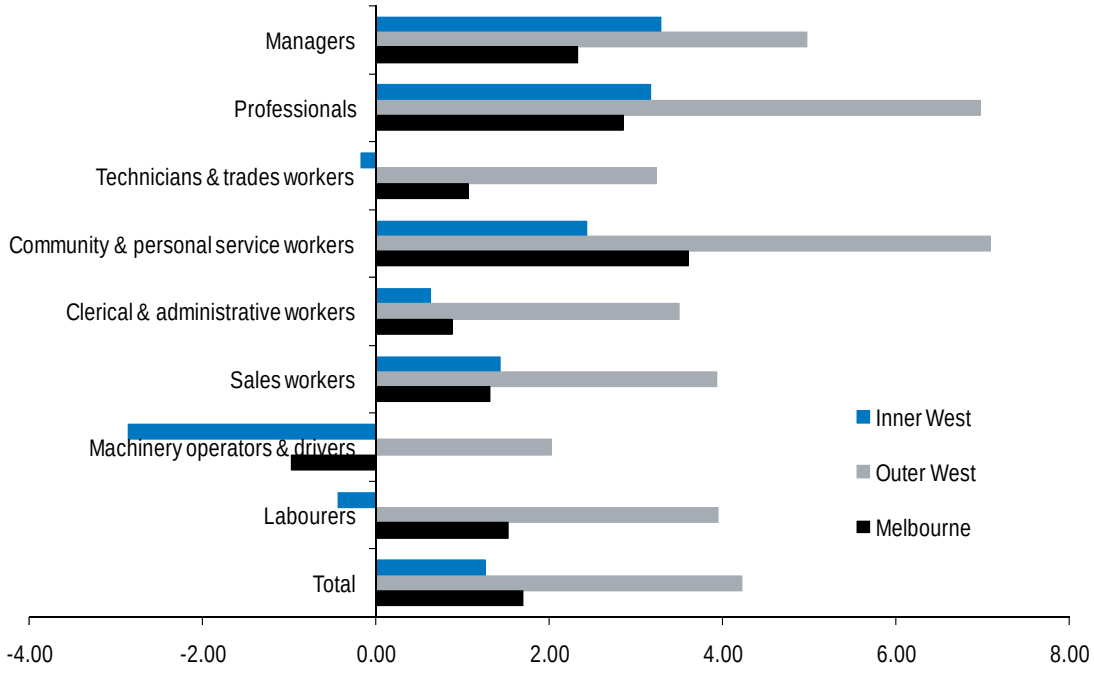
occupation structure reflecting gentrification in the Inner West, such as the decline in machinery operators and drivers. In the Outer West, a range of white collar occupations, such as community and personal services workers, are also growing more rapidly than the average for the region.

CHART 1.4 EMPLOYMENT BY OCCUPATION, SHARE OF MANAGERS AND PROFESSIONALS, LGAS WESTERN REGION AND MELBOURNE, 1996, 2001 AND 2006



Source: ABS Census data (various years).

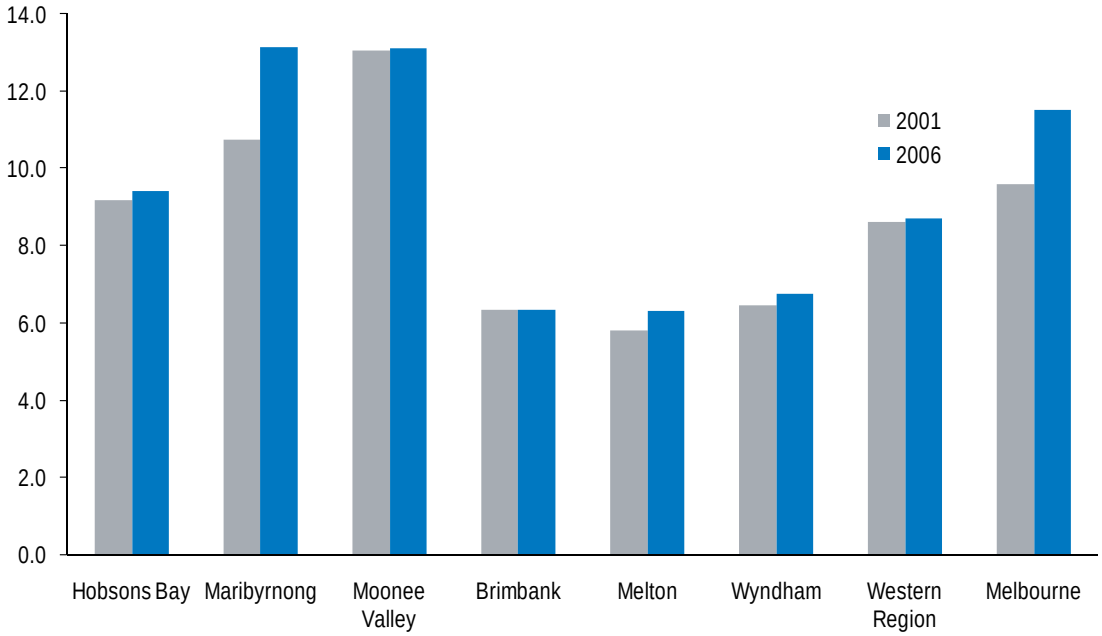
CHART 1.5 RATE OF GROWTH IN OCCUPATIONS IN THE WESTERN REGION, 2001-2006



Source: ABS Census data (various years).

Chart 1.6 below shows that along with the changing occupational structure, the education level of the population is changing, although less rapidly. Overall the proportion of the population with a bachelor's degree is low, 8.7 per cent in 2006 by comparison with Melbourne at 11.5 per cent, and the gap appears to be increasing. There is, however, considerable diversity across the region and the proportion in the Inner West is higher, with the proportion in Moonee Valley and Maribyrnong above the Melbourne average. The proportion in Maribyrnong has increased substantially from 10.7 to 13.1 per cent over the period 2001 to 2006. The characteristics of the 'gentrifiers' and those that they replace is to be studied in some detail in this chapter.

CHART 1.6 PROPORTION OF THE POPULATION WITH A BACHELOR'S DEGREE, VICTORIA AND THE WESTERN REGION, 2001 AND 2006



Source: ABS Census data (various years).

Conclusions

This preliminary survey of the changing employment and occupational structure of the Western Region has revealed a number of key features.

- Economic growth in Australia has been driven, over the last decade or more, by growth in a range of services, although mining has been important more recently. This has also been true for Victoria, where employment in services such as health care and professional scientific and technical services has experienced high growth.
- Residents of the Western Region are employed disproportionately in low-growth industry sectors, such as manufacturing which has been in decline. A lower than average proportion has been employed in the high-growth service sectors.
- This represents a 'jobs gap' which may be a result of skills deficiency, or a lack of high-growth jobs in the Western Region or a combination of the two. The journey to work data suggests that

a high proportion of workers in the region who are employed in the higher growth sectors leave the region to work, suggesting a deficiency of 'high-growth' jobs in the region.

- With the exception of transport and storage, much of the growth in jobs in the Western Region has been due to the population increase. Most of the growth in property and business services and education, for instance, has occurred in the Outer West, suggesting these jobs have followed the population rather than being responsible for stimulating regional growth.
- This suggests that much of the growth in the Western Region continues to be 'extensive' growth rather than 'intensive'. This means that the jobs created tend to be disproportionately in low-productivity sectors. For the region to be better integrated into the knowledge economy, more jobs need to be created in the higher-productivity sectors.
- The occupational structure of the Western Region is changing, however, with an influx of better educated professionals. These people tend to be located in the Inner West. Although there is evidence that this group has displaced lower skilled workers, in the longer run its greater affluence and higher skills will benefit the Western Region.

CHAPTER 2. GENTRIFICATION IN THE WEST?

In recent years, Western Melbourne has undergone rapid socioeconomic changes. This chapter analyses these changes with a particular emphasis on how the skilled labour market in the region is being transformed. It outlines in detail how different areas of Western Melbourne are undergoing very different types and rates of change. The drivers of recent changes are investigated in order to assess whether recent trends are likely to continue in the foreseeable future. Some of these changes with respect to the occupational structure and educational background have already been noted.

Table 2.1 summarises household income growth patterns across Western Melbourne SLAs (statistical local areas) between 2001-2006. Once again, different areas of Western Melbourne exhibit very different rates and types of change. Median household incomes in Inner Western Melbourne grew roughly in line with the Melbourne average in absolute terms. Maribyrnong experienced a particularly rapid rate (31.7 per cent) and magnitude of change ($93.3) in median household incomes. This is indicative of the rapid gentrification of Melbourne's Inner West. Of all the Western Melbourne SLAs, Wyndham–South experienced the highest rate (36.0 per cent) and magnitude of income growth ($143.4). This is driven by the property developments occurring in the area.

In contrast, older established areas in the Middle West experienced significantly lower rates and magnitudes of income growth. The Brimbank SLAs and Hobson's Bay–Altona experienced significantly lower rates and magnitudes of median income growth than the Melbourne average. This raises concerns about increasing income inequality and the spatial concentration of disadvantage within Middle Western Melbourne.

Overall, population and income change dynamics suggest that different areas of Western Melbourne are undergoing three broad processes of socioeconomic change. Established areas of the Inner West, particularly those suburbs with pre-WWII housing stock, are experiencing rapid gentrification associated with modest population growth and more intensive land use. Large areas of Middle Western Melbourne – as well as some areas of Outer Western Melbourne – continue to lag the rest of Melbourne in terms of median incomes. Although these areas experienced absolute income gains between 2001 and 2006, the rates and magnitudes of growth were significantly lower than the Melbourne average. Finally, new housing developments are reshaping large areas of Western Melbourne. Different projects attract different cohorts of people. As such, property development companies play a large role in determining the overall socioeconomic trajectory of different areas of Western Melbourne. For example, development such as Edgewater in Maribyrnong and Sanctuary Lakes in Wyndham–South attract a more affluent cohort than many of other housing developments in Western Melbourne.

The following section explores in more detail how mobility patterns are driving different rates and types of socioeconomic changes in Western Melbourne. Of particular interest are those areas attracting large numbers of university graduates, and managers and professionals. High inflows of these cohorts suggest that an important transformation of the West's labour market is occurring, which is likely to continue.

TABLE 2.1 MEDIAN HOUSEHOLD INCOME GROWTH FOR WESTERN MELBOURNE SLAS, 2001-2006			
SLA OF RESIDENCE (2006)	MEDIAN HOUSEHOLD INCOME PER WEEK ÷ AVERAGE HOUSEHOLD SIZE 2006	ABSOLUTE CHANGE IN MEDIAN HOUSEHOLD INCOME PW ÷ AVE. HOUSEHOLD SIZE, 2001-2006	GROWTH IN MEDIAN HOUSEHOLD INCOME $PW ÷ AVE. HOUSEHOLD SIZE, 2001-2006
	$	$	%
Inner Western Melbourne			
Hobson's Bay (C) – Williamstown	467.6	83.0	21.6
Maribyrnong (C)	387.9	93.3	31.7
Moonee Valley (C) – Essendon	453.8	91.3	25.2
Moonee Valley (C) – West	395.0	84.3	27.1
Middle Western Melbourne			
Hobson's Bay (C) – Altona	360.0	71.1	24.6
Brimbank (C) – Keilor	336.8	48.3	16.8
Brimbank (C) – Sunshine	271.0	36.0	15.3
Outer Western Melbourne			
Melton (S) – East	405.2	55.8	16.0
Melton (S) – Balance	360.0	74.3	26.0
Wyndham (C) – North	378.3	66.3	21.2
Wyndham (C) – South	541.3	143.4	36.0
Wyndham (C) – West	385.2	61.8	19.1
Melbourne	414.6	85.7	26.1

Source: ABS Census Community Profiles data (2007a).

IS WESTERN MELBOURNE GENTRIFYING?

Table 2.2 outlines the proportion of people living in Western Melbourne with a bachelor degree (or higher) and working as managers or professionals. In 2001, most Western Melbourne SLAs lagged the Melbourne average in terms of the proportion of people with a bachelor's degree (or higher) or employed as managers and professionals. Between 2001 and 2006, some SLAs experienced very rapid growth in these proportions relative to the Melbourne average. Areas of the Inner West, including Hobson's Bay–Williamstown, Moonee Ponds–Essendon and Maribyrnong experienced growth in these proportions higher than the Melbourne average. These figures indicate rapid and ongoing gentrification of the Inner West.

Middle and Outer Western Melbourne have experienced large inflows of degree holders, and managers and professionals, largely due to high population growth. Noteworthy, Wyndham-South experienced the most rapid change in the proportion of people holding degrees in all of Western Melbourne. Greenfield housing developments in Wyndham–South, such as Sanctuary Lakes, have attracted higher income groups to the area.

Table 2.2 also highlights, however, that some areas such as Brimbank and Melton (Balance) continue to lag the Rest of Melbourne. Given the rates of change between 2001 and 2006, these areas may fall even further behind the Melbourne average in terms of percentage of the population who are university graduates or managers and professionals.

TABLE 2.2 CHANGES IN THE PROPORTION OF PERSONS WITH DEGREES (OR HIGHER) AND MANAGERS OR PROFESSIONALS FOR WESTERN MELBOURNE SLAS, 2001-2006

	PERSONS WITH BACHELOR DEGREE OR HIGHER QUALIFICATION (>20 YEARS)*				MANAGERS AND PROFESSIONALS			
SLA OF RESIDENCE	CHANGE IN NUMBER OF PERSONS 2001-2006	% OF PERSONS 2001	% OF PERSONS 2006	DIFFERENCE IN % OF PERSONS 2001-2006	CHANGE IN NUMBER OF PERSONS 2001-2006	% OF EMPLOYED PERSONS 2001	% OF EMPLOYED PERSONS 2006	DIFFERENCE IN % OF PERSONS 2001-2006
Inner Western Melbourne								
Hobson's Bay (C) – Williamstown	1408	21.2	27.1	5.9	1060	41.5	45.7	4.2
Maribyrnong (C)	4411	15.2	23.0	7.8	2620	30.3	34.6	4.3
Moonee Valley (C) – Essendon	2995	22.9	28.3	5.4	1323	41.9	44.2	2.3
Moonee Valley (C) – West	764	12.2	15.0	2.8	302	27.5	30.2	2.7
Middle Western Melbourne								
Hobson's Bay (C) – Altona	1197	8.7	11.8	3.0	548	20.5	22.8	2.3
Brimbank (C) – Keilor	1229	9.7	11.4	1.7	243	20.8	21.5	0.6
Brimbank (C) – Sunshine	2291	6.8	10.2	3.4	1067	14.6	17.0	2.4
Outer Western Melbourne								
Melton (S) – East	2932	11.7	15.9	4.2	2814	23.7	25.0	1.3
Melton (S) – Balance	497	6.1	7.1	1.1	356	18.8	18.8	0.0
Wyndham (C) – North	2135	9.0	11.5	2.5	1533	21.3	22.0	0.7
Wyndham (C) – South	2182	14.1	23.7	9.6	2331	42.5	38.7	–3.8
Wyndham (C) – West	391	8.4	9.6	1.2	394	21.4	21.7	0.3
Melbourne	134,093	17.5	21.2	3.7	71,874	33.3	35.0	1.6

Source: ABS Census data, through Tablebuilder, various years.
*Note Expressed as a percent of population over 20, not total population as in Char t 1.6

Table 2.3 demonstrates that mobility patterns explain the rapid rate of socioeconomic change in different areas of Western Melbourne. The first two columns of Table 2.3 highlight that recent in-movers to the region tend, on average, to be more highly educated than the overall population. This is attributable to the fact that younger cohorts, on average, are more likely to have a university-level education and move residence in any particular year. More importantly, the first two columns of Table 2.3 demonstrate that a high proportion of in-movers to the Inner West – as well as Wyndham–South – are university graduates. This suggests that observed discrepancies between different SLAs of Western Melbourne in terms of education attainment are driven, in large part, by mobility patterns.

TABLE 2.3 IN-MOVEMENT OF PERSONS (>20 YEARS) WITH A BACHELOR DEGREE OR HIGHER LEVEL QUALIFICATION TO WESTERN MELBOURNE SLAS, 2001-2006

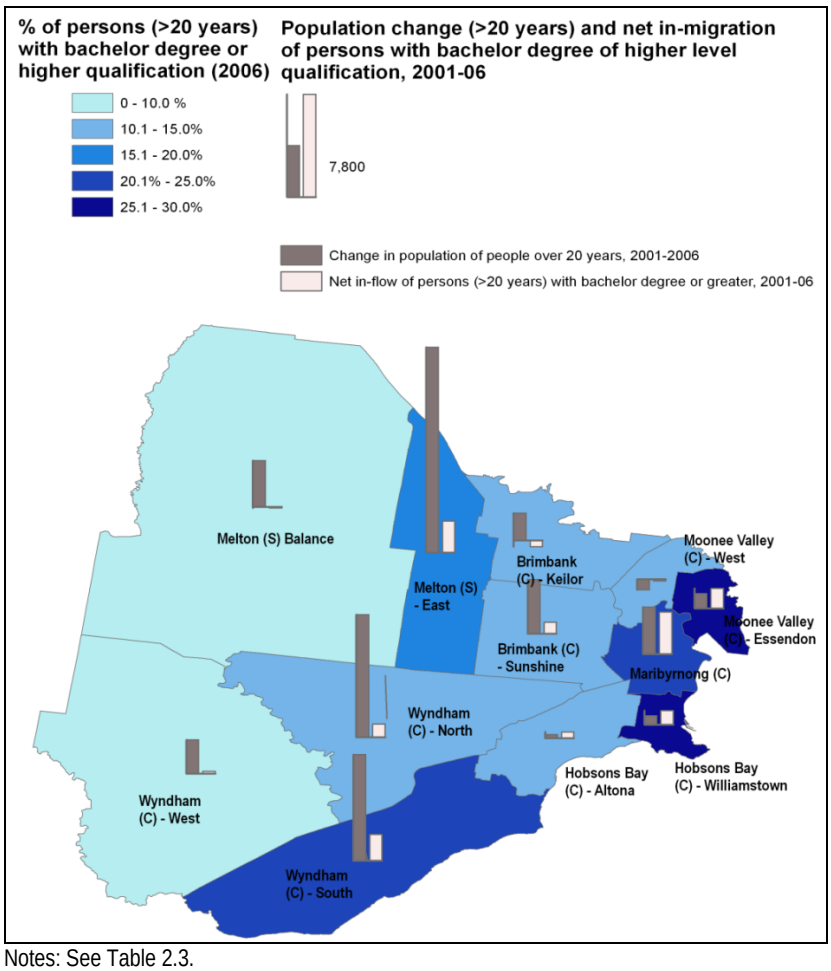
SLA OF RESIDENCE	% PERSONS WITH DEGREES OF HIGHER QUALIFICATION (2001)	% PEOPLE OVER 20 YEARS WITH DEGREES OR HIGHER QUALIFICATION (2006)	% OF IN-MOVERS SINCE 2001 WITH A DEGREE (OR HIGHER)	CHANGE IN POPULATION OVER 20 YEARS (2001-2006)	NET IN-MIGRATION OF PERSONS WITH DEGREE OR ABOVE (2001-2006)
Inner Western Melbourne					
Hobsons Bay (C) – Williamstown	21.2	27.1	37.7	669	1071
Maribyrnong (C)	15.2	23.0	35.2	3,556	3193
Moonee Valley (C) – Essendon	22.9	28.3	37.4	1,130	1534
Moonee Valley (C) – West	12.2	15.0	23.0	-799	-119
Middle Western Melbourne					
Hobsons Bay (C) – Altona	8.7	11.8	21.8	268	476
Brimbank (C) – Keilor	9.7	11.4	16.3	2,067	-484
Brimbank (C) – Sunshine	6.8	10.2	18.5	4,107	869
Outer Western Melbourne					
Melton (S) – East	11.7	15.9	18.1	15,565	2393
Melton (S) – Balance	6.1	7.1	9.1	3,497	-82
Wyndham (C) – North	9.0	11.5	16.2	9,299	1009
Wyndham (C) – South	14.1	23.7	27.4	8,056	1997
Wyndham (C) – West	8.4	9.6	12.4	2,569	164
Rest of Melbourne	NA	22.5	NA	NA	NA

Notes: 1. Socioeconomic variables are those recorded for individuals at time of 2006 census. 2. Net in-migration is the difference between number of persons who moved into a SLA since 2001 and the number of persons who moved out of the area. Inflow numbers include overseas migration. Outflow data does *not* capture emigration or those residing overseas temporarily. Flow data only includes those in the labour force at the time of the 2006 census (i.e. excludes low-income pensioners). Persons who did not state their address five years ago are allocated to 'non-mover' and 'mover' categories on a proportional basis.
Source: ABS Census data, through Tablebuilder, various years.

The last two columns of Table 2.3 highlight the relative contribution that net inflows of university graduates made to the overall population change between 2001 and 2006. In areas such as Maribyrnong, the net inflows of university-educated persons equate to a large proportion of the overall population change between 2001 and 2006. Although absolute population growth was low in Hobson's Bay–Williamstown and Moonee Valley–Essendon, net inflows of university graduates equate to a large proportion of population change in these areas between 2001 and 2006. In areas of significant greenfield development – namely, Melton–East, Wyndham–North and Wyndham–South – net inflows of graduates are larger in absolute terms, but equate to a lower proportion of total population growth

between 2001-2006. Wyndham–South stands out for the high proportion of in-movers that are university graduates. Chart 2.1 summarises these trends visually.

CHART 2.1 POPULATION GROWTH (>20 YEARS) AND NET IN-MIGRATION OF UNIVERSITY GRADUATES, WESTERN MELBOURNE SLAS, 2001-2006



Notes: See Table 2.3.
Source: ABS Census data, with Tablebuilder, various years.

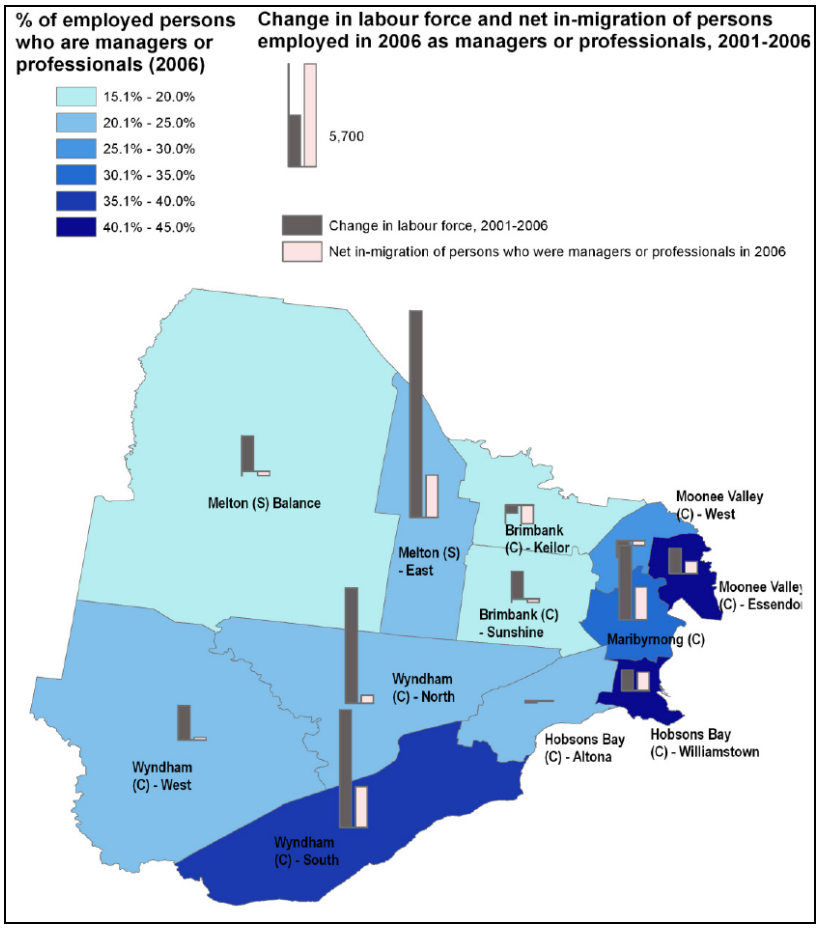
Table 2.4 replicates the previous analysis, but explores the occupational characteristics of recent in-movers to Western Melbourne. The first two columns of Table 2.4 demonstrate that Hobson's Bay–Williamstown and Moonee Valley–Essendon are becoming even more professionalised due to the type of people moving into these areas. In Hobson's Bay–Williamstown and Moonee Valley–Essendon, 50.1 per cent and 42.5 per cent of in-movers were managers or professionals, respectively. A large percentage of in-movers to Maribyrnong and Wyndham–South were managers and professionals. In contrast, in other areas of Middle and Outer Melbourne, the percentage of in-movers who are managers or professionals is less than 25 per cent, which is significantly lower than the 'rest of Melbourne' average. Indeed, in the Melton–Balance SLA, in-movers are less likely to be managers and professionals than the overall population.

TABLE 2.4 IN-MOVEMENT OF MANAGERS AND PROFESSIONALS TO WESTERN MELBOURNE SLAS, 2001-2006					
SLA OF RESIDENCE	% EMPLOYED WHO ARE MANAGERS OR PROFESSIONALS 2001	% EMPLOYED WHO ARE MANAGERS OR PROFESSIONALS 2006	% OF IN-MOVERS SINCE 2001 WHO ARE MANAGERS OR PROFESSIONALS	CHANGE IN LABOUR FORCE, 2001-2006	NET IN-MIGRATION OF MANAGERS OR PROFESSIONALS 2001-2006
Inner Western Melbourne					
Hobson's Bay (C) – Williamstown	41.5	45.7	50.1	1,152	1032
Maribyrnong (C)	30.3	34.6	35.6	4,127	1806
Moonee Valley (C) – Essendon	41.9	44.2	42.5	1,398	679
Moonee Valley (C) – West	27.5	30.2	31.9	–908	–252
Middle Western Melbourne					
Hobson's Bay (C) – Altona	20.5	22.8	27.9	–100	21
Brimbank (C) – Keilor	20.8	21.5	21.4	–455	–1038
Brimbank (C) – Sunshine	14.6	17.0	17.7	1546	–193
Outer Western Melbourne					
Melton (S) – East	23.7	25.0	25.0	11,493	2349
Melton (S) – Balance	18.8	18.8	17.0	1966	–240
Wyndham (C) – North	21.3	22.0	22.6	6393	450
Wyndham (C) – South	42.5	38.7	38.8	6556	2283
Wyndham (C) – West	21.4	21.7	22.0	1895	148
Rest of Melbourne	NA	35.0	38.5	NA	NA

Notes: 1. Socioeconomic variables are those recorded for individuals at time of 2006 census. 2. Net in-migration is the difference between number of persons who moved into a SLA since 2001 and the number of persons who moved out of the area. Inflow numbers include overseas migration. Outflow data does *not* capture emigration or those residing overseas temporarily. Flow data only includes those in the labour force at the time of the 2006 census (i.e. excludes low-income pensioners). Persons who did not state their address five years ago are allocated to 'non-mover' and 'mover' categories on a proportional basis. 3. Figures for overall labour force change include those due to within-area population growth and ageing.
Source: ABS Census data, through Tablebuilder, various years.

As with university graduates, inflows of managers and professionals to the Inner West equate to a large proportion of the total labour force change between 2001 and 2006 (see Chart 2.2). In areas of significant greenfield development – Melton–East, Wyndham–North and Wyndham–South – inflows of managers and professionals are larger in absolute terms than flows to the Inner West, but are equivalent to a small percentage of labour force change between 2001-2006. Once again, in the Outer West, Wyndham–South stands out because a high proportion of in-movers are managers and professionals.

CHART 2.2 LABOUR FORCE GROWTH AND NET IN-MIGRATION OF MANAGERS AND PROFESSIONALS, WESTERN MELBOURNE SLAS, 2001-2006



Notes: See Table 2.4.
Source: ABS Census data, through Tablebuilder, various years.

Table 2.5 explores the proportion of employed persons moving into Western Melbourne between 2001-2006 who were earning $1300 per week in 2006. The table demonstrates that the Inner West and areas of Outer Melbourne experienced a net inflow of higher income earners between 2001-2006. In contrast, Middle Western Melbourne and Melton–Balance experienced a net outflow of high income earners. This suggests that upwardly mobile people living in Middle Western Melbourne have a high propensity to move out of the area. Table 2.5 also highlights the disproportionate flow of high income people to Hobson's Bay–Williamstown and Wyndham–South.

In summary, this section demonstrates that the rapid transformation of the socioeconomic map in Western Melbourne is determined, in large part, by intra-metropolitan mobility patterns. Areas closer to the CBD with attractive pre-World War II housing stock are undergoing rapid gentrification. Maribyrnong appears to be experiencing particularly rapid gentrification. It is also clear that Wyndham–South is attracting many highly educated, professional households to prestigious housing developments such as Sanctuary Lakes. In contrast, high income earners have a propensity to move out of the Middle West. Such trends are concerning as they suggest socioeconomic stagnation and concentration of poverty in the Middle West, particularly in those neighbourhoods with ageing post-WWII housing and poor access to the CBD. The characteristics of in-movers have played – and will continue to play – an important role

in the socioeconomic remapping of Western Melbourne and its labour markets. The next section places these flows of people in their city-wide context, highlighting that the changes occurring in Western Melbourne are heavily influenced by housing market dynamics in the rest of Melbourne and the location preferences of immigrants.

TABLE 2.5 IN-MOVEMENT OF EMPLOYED PERSON EARNING MORE THAN $1300PW TO WESTERN MELBOURNE SLAS, 2001-2006

SLA OF RESIDENCE	LABOUR FORCE		NET IN-MIGRATION OF LABOUR FORCE 2001-2006			NET IN-MIGRATION 2001-2006 OF PERSONS EARNING >$1300 PW AS A PERCENTAGE OF LABOUR FORCE
			PERSONS EARNING		RATIO OF PERSONS EARNING >$1300 PW TO THOSE EARNING <$1300PW	
	LABOUR FORCE 2006	EARNING >$1300 PW %	>$1300PW	<$1300PW		
Inner Western Melbourne						
Hobson's Bay (C) – Williamstown	15,007	0.3	668	663	1	4.50%
Maribyrnong (C)	30,864	0.1	774	3857	0.2	2.40%
Moonee Valley (C) – Essendon	33,932	0.2	265	1544	0.2	0.80%
Moonee Valley (C) – West	19,119	0.1	–101	338	–0.3	–0.50%
Middle Western Melbourne						
Hobson's Bay (C) – Altona	23,788	0.1	–60	–74	0.8	–0.25%
Brimbank (C) – Keilor	40,701	0.1	–628	–1972	0.3	–1.50%
Brimbank (C) – Sunshine	34,029	0.1	–181	1024	–0.2	–0.50%
Outer Western Melbourne						
Melton (S) – East	20,001	0.1	1058	8586	0.1	5.30%
Melton (S) – Balance	19,422	0.1	–79	282	–0.3	–0.40%
Wyndham (C) – North	36,848	0.1	133	3496	0	0.40%
Wyndham (C) – South	8792	0.2	1446	4393	0.3	16.50%
Wyndham (C) – West	10,946	0.1	12	1172	0	0.10%
	1,487,315	0.2	NA			

Notes: 1. Socioeconomic variables are those recorded for individuals at time of 2006 census. 2. Net in-migration is the difference between number of persons who moved into a SLA since 2001 and the number of persons who moved out of the area. Inflow numbers include overseas migration. Outflow data does *not* capture emigration or those residing overseas temporarily. Persons who did not state their address five years ago are allocated to 'non-mover' and 'mover' categories on a proportional basis. 3. Figures for overall labour force change include those due to within-area population growth and ageing. 4. The category '<$1300 pw' includes those reporting negative and nil incomes, as well as 'not stated' responses. Data only includes those in the labour force at the time of the 2006 census (i.e. excludes low-income pensioners).
Source: ABS Census data, through Tablebuilder, various years.

THE SOCIOECONOMIC REMAPPING OF WESTERN MELBOURNE IN THE CITY-WIDE CONTEXT

The section explores how the socioeconomic changes occurring in Western Melbourne are linked to city-wide mobility patterns, as well as inter-state and international immigration flows. To explore these

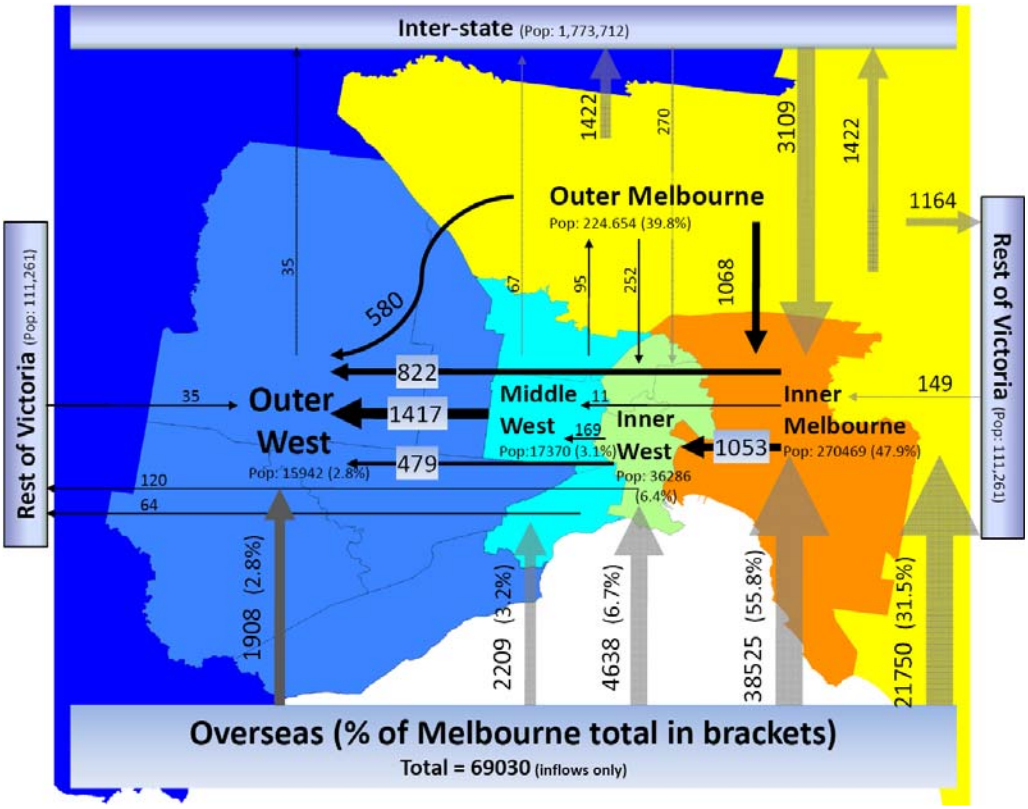
issues, matrices and maps were produced using change of residence data collected during the 2006 census. The 2006 census asked respondents whether they lived in the same residence 5 years ago. If not, information was requested about their previous place of residence, either in Australia or overseas. This data was used to derive net flows (inflows minus outflows) of different cohorts of people between different SLAs of Australia. It was also used to explore the propensity of recent immigrants (and returnees) to settle in different parts of Melbourne. Immigration flows reported are gross flows because emigration flows are not captured by the census. We aggregated SLA-level data into synthetic regions – Inner Melbourne, Outer Melbourne and Inner, Middle and Outer Western Melbourne. Moves to and from the rest of Victoria and Australia were also aggregated. The analysis focuses on flows of university graduates, managers and professionals, and persons earning above and below certain income thresholds in 2006.[2]

Chart 2.3 represents the flows of people over 20 years who are university graduates. At the bottom of Chart 2.3, the inflows of university graduates who were overseas in 2001 are illustrated. Two important points emerge from the overseas inflow data. First, immigration and returnee flows to different areas of Melbourne are much larger than the sum of intra-metropolitan flows (except in Outer Western Melbourne). Second, university graduates who were overseas in 2001 have a very high propensity to move to 'Inner Melbourne'. For example, 55.8 per cent of those university graduates who were overseas in 2001 resided in Inner Melbourne in 2006, as opposed to other areas of metropolitan Melbourne. This compares to Inner Melbourne's 47.9 per cent share of Melbourne's total population of university graduates, and its 29.5 per cent share of Melbourne's total population. Chart 2.3 also demonstrates that inflows from inter-state are a significant addition to Inner Melbourne's population of university graduates.

Whilst Inner Melbourne was a net recipient of university graduates from outside Melbourne, it was a net 'exporter' of this cohort to Western Melbourne. There was a net outflow of 1053 university graduates from Inner Melbourne to Inner Western Melbourne between 2001 and 2006. These patterns suggests that Inner Melbourne housing demand is 'spilling over' into Melbourne's Inner West, where housing prices continue to lag those in other areas equally close to the CBD. In turn, there is a net outflow of graduates from the Inner West, mainly to the Outer West. The overall pattern is consistent with sequential 'spillover' from the rest of Melbourne into the Inner West and, then, to the Outer West. Interestingly, these net inflows of graduates from the rest of Melbourne largely bypass the Middle West. Further, there are strong net outflows of university graduates from the Middle West to the Outer West. This suggests that upwardly mobile households in Middle Melbourne have a high propensity to leave the area, particularly for Outer Western Melbourne. These city-wide mobility patterns suggests that as Melbourne grows, largely due to skilled immigration, the gentrification of Inner Melbourne is likely to continue, if not accelerate. Simultaneously, the Outer West will continue to attract university graduates and other cohorts able to purchase new housing. In contrast, these mobility patterns suggest that the Middle West – particularly those areas with unattractive housing stock and far from public transport – will continue to lag the rest of Melbourne according to socioeconomic indicators.

[2] For the income analysis, the focus was on those people in the labour force (i.e. not pensioners) and those people who are not currently enrolled students. The relationship between mobility, residential destination and income for students and retirees was considered to be different from persons who have finished their education and have entered the labour force, especially for inter-state and overseas migrants. The side-effect of this is that those persons simultaneously in the labour force and studying at a tertiary level are excluded from our analysis of net flows of different income groups.

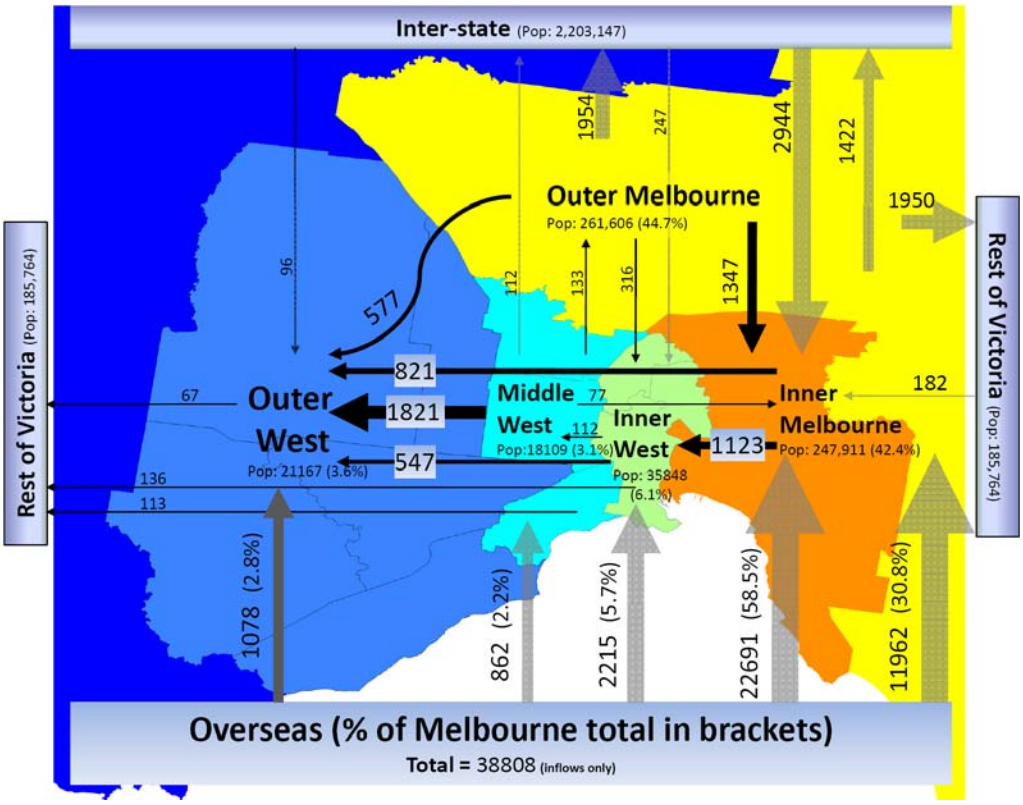
CHART 2.3 NET FLOWS OF PERSONS (>20 YEARS) WITH DEGREES OR HIGHER, MELBOURNE, 2001-2006



Notes: 1. Education and occupation variables are those recorded for individuals in 2006. 2. Population figures in sub-script are the total population for the cohort living in areas in 2006. 3. Overseas flows are those who stated they were overseas in 2001 (immigrants and returnees). Emigration flows are not accounted for. 4. Geographical areas have been constructed from SLA level data. The 'Inner West' is comprised of Moonee Valley and Maribyrnong LGAs and Hobson's Bay-Williamstown SLA. The 'Middle West' is comprised of Brimbank LGA and Hobson's Bay – Altona SLA. The 'Outer West' is comprised of Melton and Wyndham LGAs. 'Inner Melbourne' is comprised of Banyule, Bayside, Boroondara, Darebin, Glen Eira, Melbourne, Moreland, Port Phillip, Stonnington and Yarra LGAs. Outer Melbourne is comprised of all other Melbourne SD LGAs. 5. Population figures are for cohort members only. Percentages in parentheses are the percentage of total Melbourne population of cohort in question.
Source: ABS Census data, through Tablebuilder, various years.

The pattern of net flows for persons employed as managers and professionals is similar to that for university graduates (Chart 2.4). Like university graduates, professionals and managers who were overseas in 2001 move disproportionately to Inner Melbourne. They are also under-represented in terms of moving to areas of Western Melbourne, including the Inner West. Also like university graduates, there are net inflows of managers and professionals from the rest of Melbourne into Western Melbourne, with Middle Western Melbourne largely by-passed. The net outflow of managers and professionals from Middle Western Melbourne is even greater than for university graduates. The total inflow of managers and professionals to the Middle West through immigration (862) is less than the total net outflows to other areas of Melbourne and Australia (total = 2011), suggesting a net loss of this cohort.

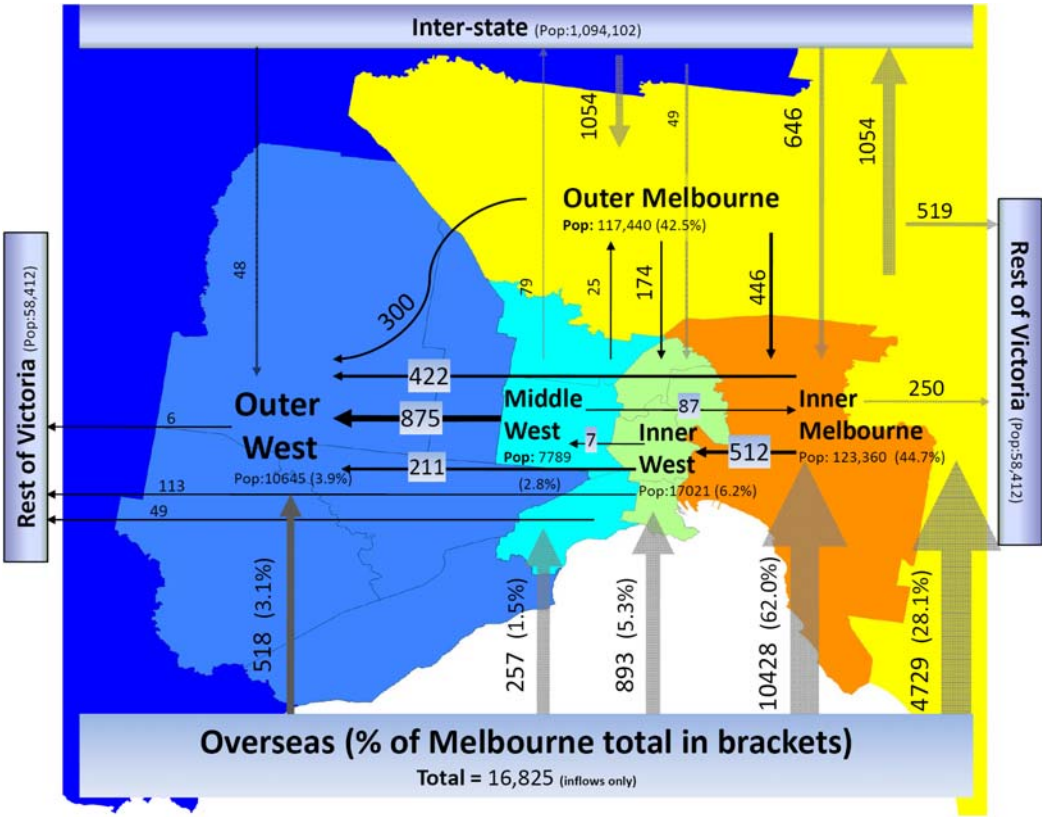
CHART 2.4 NEW FLOWS OF MANAGERS AND PROFESSIONALS, MELBOURNE, 2001-2006



Notes: See Chart 2.3.
Source: ABS Census data, through Tablebuilder, various years.

Chart 2.5 illustrates the flows of persons earning more than $1300 per week. The overall pattern is broadly similar to that for managers and professionals, with net outflow from Inner Melbourne into the Inner and Outer West. There is a net flow, albeit small, out of the Middle West into Inner Melbourne. Also interesting to note, 62 per cent of high income earners who were overseas 5 years ago reside in Inner Melbourne. This compares with Inner Melbourne's 44.7 per cent share of the Melbourne's entire population of persons earning more than $1300 per week and its 29.5 per cent share of total population.

CHART 2.5 NET FLOWS OF PERSONS GREATER THAN $1300PW, WESTERN MELBOURNE, 2001-2006



Notes: 1. Figures reported are for those in the labour force. They therefore exclude pensioners. Figures also exclude those who reported being currently enrolled in education. They therefore exclude low-income students. See also notes for Chart 2.3.
Source: ABS Census data, through Tablebuilder, various years.

Charts 2.6 and 2.7 illustrate the flows of persons earning below $600 per week and above $600 per week respectively. Both figures demonstrate several key points about how different income groups move into and within Melbourne. Looking first at overseas inflows, it is clear that those earning below $600 per week are more likely to settle in Western Melbourne (16.7 per cent of the overseas cohort) than those earning more than $600/pw (13.2 per cent of overseas cohort). As before, more affluent immigrants and returnees have a very high preference for settling in Inner Melbourne. Within Western Melbourne, the Inner West is the main destination for recent immigrants and returnees for both income groups. For low income groups, this reflects the existence of public housing stock in the area, and in particular, Maribyrnong's role as a staging point for recent migration. Given recent housing market changes and field interviews we conducted, which are discussed later, it is likely Maribyrnong has become far less accessible for low income groups since 2006.

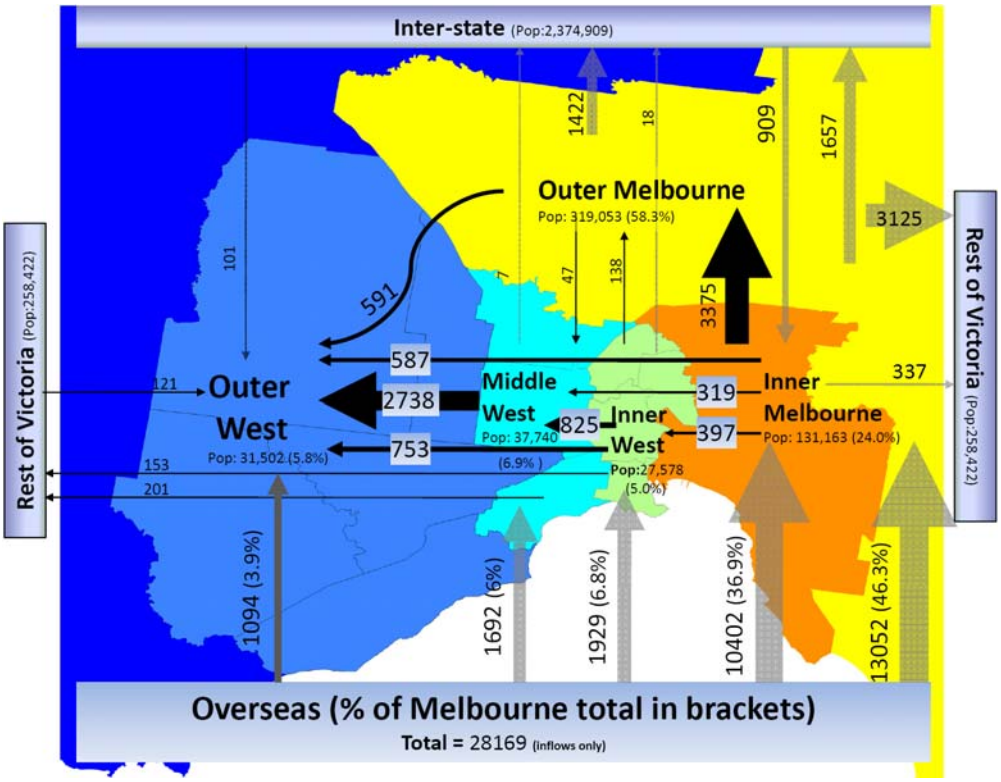
Looking at intra-urban mobility, charts 2.6 and 2.7 demonstrate, once again, that both income groups are 'spilling over' from Inner and Outer Melbourne into Western Melbourne. Net outflows from Inner Melbourne to the rest of Melbourne are larger for the lower income group (4687 persons) than for the higher income group (3862). This is despite the total Melbourne population of the higher income group being larger (946,874 persons) than the lower income group (729,036 persons). Once again, the net outflows of higher income people from Inner Melbourne to Western Melbourne largely by-passes the

Middle West, whilst a greater proportion of low income persons moving to Western Melbourne end up in the Middle West.

Also notable is the strong net inflow of higher income persons (more than $600 per week) to the Inner West. This raises the possibility that housing market pressures in the Inner West may 'push' existing low income residents further away from the CBD. Indeed, for both income groups, there is a net outflow of persons from the Inner West to the Middle and Outer West. Of the total net outflows from the Inner West to Middle and Outer Western Melbourne, 52.5 per cent of the lower income flow (825 persons) goes to the Middle West, compared to 33.6 per cent of the higher income flow (681 persons).

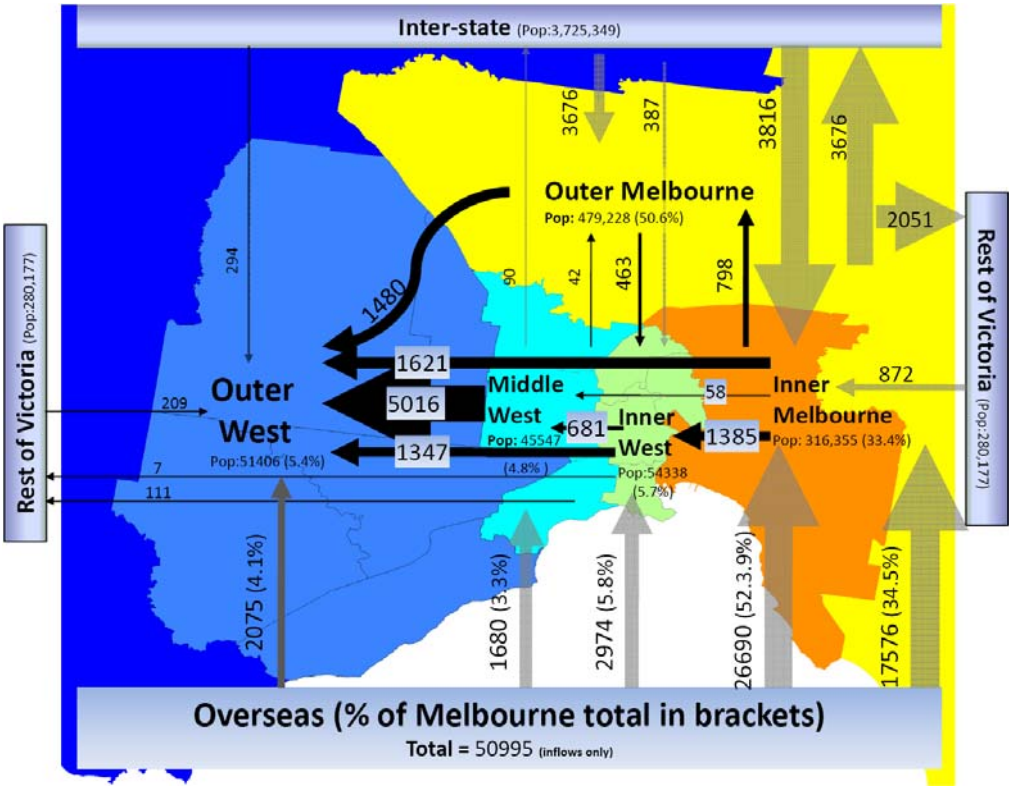
There are strong net outflows of both income groups (more than and less than $600 per week) from the Middle West to Outer Western Melbourne. Out-movers from the Middle West are a large source of net-inflows to the Outer West. Charts 2.6 and 2.7 re-iterate that population growth 'spillover' from the rest of Melbourne is the primary driver of change in Western Melbourne. These flows are transforming the labour markets in different ways, with the Inner West and Outer West attracting a mix of income groups. In contrast, high income individuals appear reluctant to move to the Middle West and have a propensity to leave the area.

CHART 2.6 NET FLOWS OF PERSONS EARNING LESS THAN $600PW, WESTERN MELBOURNE, 2001-2006



Notes: See Chart 2.3. 1. 'Earning less than $600pw' figures include those with nil and negative income as well as 'not stated' responses.
Source: ABS Census data, through Tablebuilder, various years.

CHART 2.7 NET FLOWS OF PERSONS EARNING MORE THAN $600 PW, WESTERN MELBOURNE, 2001-2006



Notes: See Chart 2.3.
Source: ABS Census data, through Tablebuilder, various years.

To summarise, the remapping of Western Melbourne's labour market and socioeconomic profile is intimately linked to Melbourne-wide patterns of immigration and population growth, and the differing propensity of socioeconomic groups to move into and within Western Melbourne. The rapid gentrification of the Inner West is driven, in large part, by immigration and outflows of higher socioeconomic groups from Inner Melbourne. Given high population growth projections and the strong preference of skilled immigrants to live near the CBD, gentrification of the Inner West is likely to continue and intensify. This implies an increasing concentration of skilled labour in the Inner West. In contrast, the Middle West is an unattractive place for upwardly mobile cohorts, with many moving out of the area, particularly to the Outer West. A continuation of this pattern would suggest a continued, if not worsening, concentration of relative disadvantage in the Middle West. The Outer West is attracting large numbers of university graduates and managers and professionals, along with other cohorts able to afford new housing. This suggests that future businesses locating in the Outer west will have access to a significant and growing pool of skilled labour. As the previous section highlighted, as the Outer West evolves, in large part due to city-wide mobility patterns, clusters of different socioeconomic groups are likely to form. This clustering will be determined, in large part, by the socioeconomic groups that property developers target, or think they can attract to different areas. For example, South Wyndham, by virtue of developments such as Sanctuary Lakes, has been able to attract a large cohort of university-educated professionals. Other developments, further from the CBD and the ocean, are likely to attract middle income households. Established areas around Melton and Werribee with an ageing housing stock will probably attract lower income groups seeking relief from rapidly rising housing costs

closer to the CBD. Planners should be cognizant of such trends when forecasting local labour market conditions and devising industrial policy for Western Melbourne.

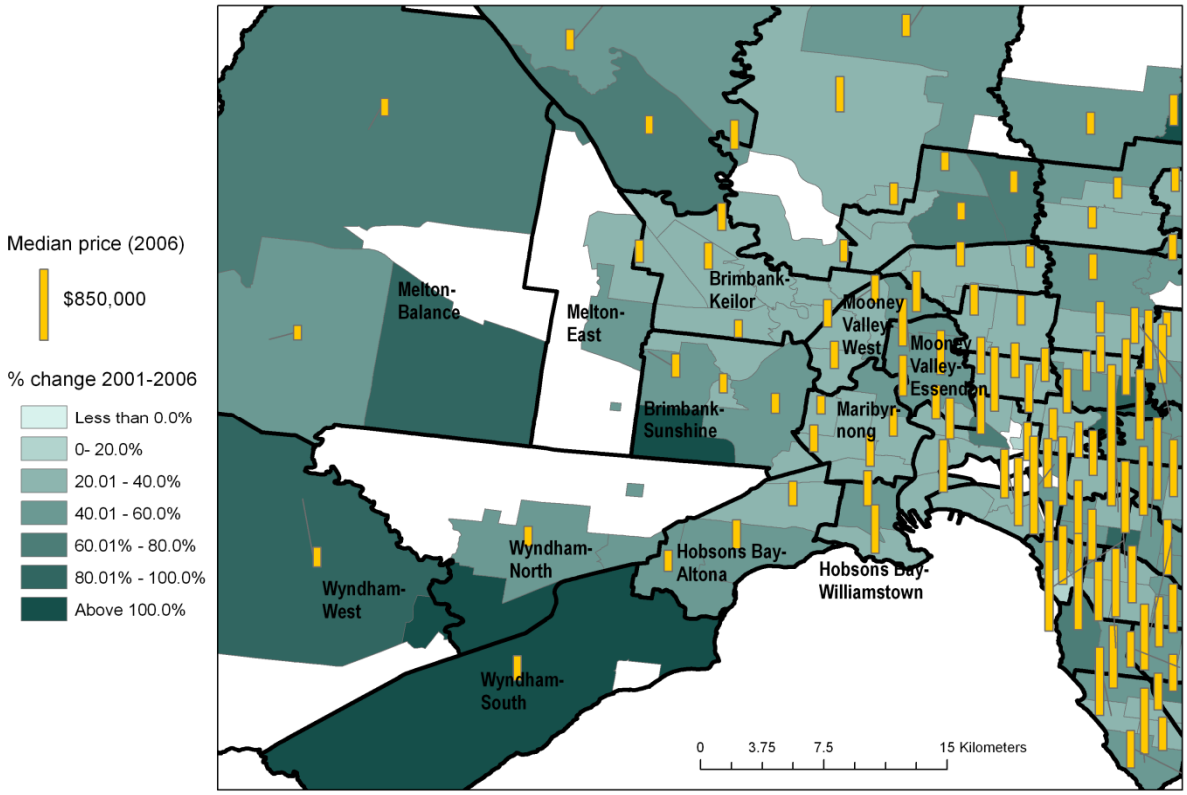
RECENT TRENDS IN HOUSING AND LABOUR MARKETS

The Census provides the most comprehensive insight into how the Australian socioeconomic landscape is evolving. However, it has been more than three years since the 2006 census on which the previous analysis is based. The following section seeks to infer whether the trends identified are likely to have continued by analysing recent housing market data. First, however, it analyses the housing market data from 2001-2006 to highlight how the mobility patterns discussed in the previous section are driven, in large part, by housing market dynamics.

Chart 2.8 depicts median housing markets by postcode in 2006 (bars), as well as the percentage change in median housing price between 2001-2006 (shading). Some parts of gentrifying Mooney Valley–Essendon and Hobson's Bay–Williamstown saw percentage increases in median prices equal or greater than Inner Melbourne. Noteworthy is Maribyrnong's relatively low prices given its proximity to the CBD. As demonstrated in Table 2.4, Maribyrnong SLA experienced the second highest rate of increase in the proportion of university graduates, and managers and professionals in Western Melbourne between 2001 and 2006. These property price patterns are consistent with the suggestion that demand for housing close to the CBD by high income cohorts is spilling over into Melbourne's Inner West.

By comparison, Middle Western Melbourne experienced relative high house price inflation between 2001 and 2006, albeit off a low base. In 2006 it still provided some of the cheapest housing in Melbourne. These patterns are consistent with the mobility patterns identified earlier; namely, inflows of lower income groups from the Inner Melbourne and overseas, and outflows of higher income groups. Outer Western Melbourne also has relative high rates of house price inflation, once again off a low base. Noteworthy is the particularly high rate of house price inflation in Wyndham–South, an area identified earlier as attracting many higher income people.

CHART 2.8 MEDIAN HOUSE PRICE ($) BY POSTCODE (2006, BARS) AND PER CENT CHANGE IN MEDIAN HOUSE PRICE (2001-2006, SHADING)



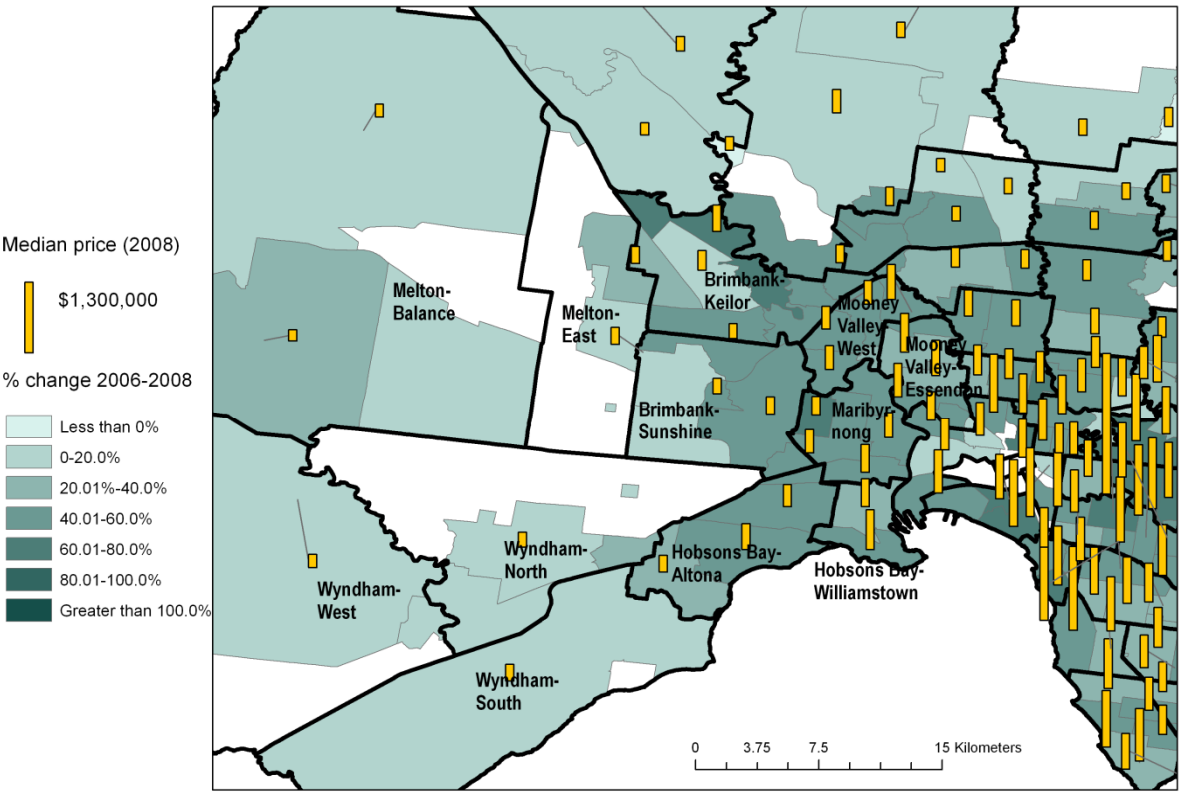
Notes: Property price annual data by postcode. SLA boundaries have been overlain in bold. Blank areas are postcodes with no sales data recorded. Some postcode boundaries may have change between 2001 and 2006.
Source: Land.vic.gov.au, 2009.

Chart 2.9 repeats the previous analysis using property price data from 2006-2008. Several points stand out. The major difference from the 2001-2006 data is that property price increases appear more strongly linked with proximity to the CBD. The Inner West, particularly Maribyrnong, has observed strong property price growth. This suggests that the Inner West is continuing to gentrify rapidly and is being pulled into a closer orbit of the Inner Melbourne property market. Parts of the Middle West have experienced modest property price growth. This may be an indicator that parts of the Middle West are also gentrifying under the weight of population growth. However, the mobility patterns identified in the previous sections – particularly, the high outflows of higher income individuals – and relatively cheap housing would suggest that the Middle West will continue to attract significant numbers of lower income households for the foreseeable future. In the longer term, however, if city-wide population growth continues, the Middle West's close proximity to the CBD may make the area increasingly attractive to higher income households.

Interestingly, between 2006 and 2008, property price growth in the Outer West was low compared to the rest of Melbourne. This is attributable, in part, to rising interest rates and oil prices during the period. This trend suggests that a relative re-ordering of suburbs with cheapest housing in Western Melbourne may be occurring. If so, the flows of lower income households into the Outer West identified in the

previous section are likely to coincide with high flows of middle income households into the area driven by new housing developments.

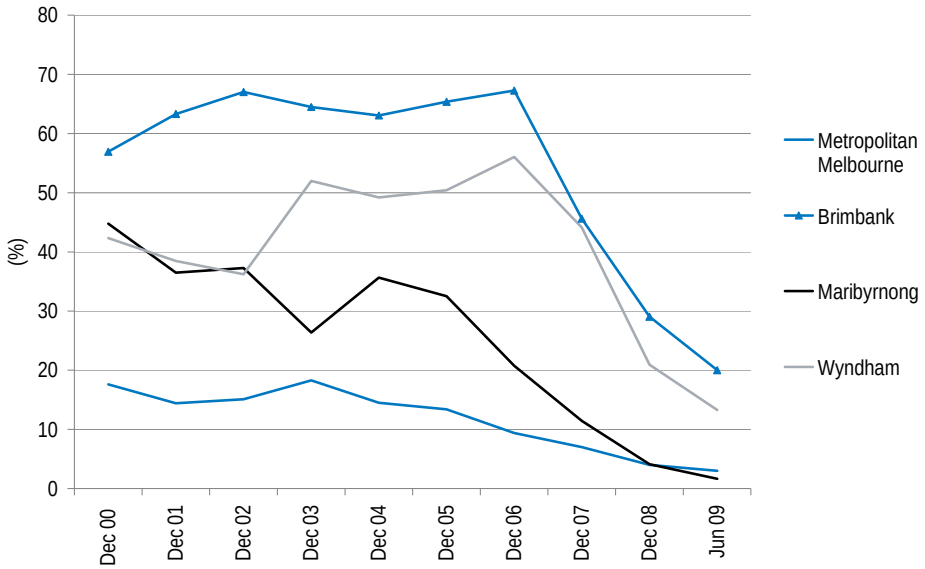
CHART 2.9 MEDIAN HOUSE PRICE ($) BY POSTCODE (2008, BARS) AND PER CENT CHANGE IN MEDIAN HOUSE PRICE (2006-2008, SHADING)



Notes: Property price data is annual data by postcode. SLA boundaries have been overlain in bold. Blank areas are postcodes with no sales data recorded. Some postcode boundaries may have change between 2006 and 2008.
Source: Land.vic.gov.au, 2009.

Western Melbourne has traditionally had a large stock of affordable rental property. This stock of housing explains the high propensity of lower income household to live – and move into – the area. Since 2005, city-wide housing market pressures have led to very rapid declines in the availability of 'affordable' rental properties. Chart 2.10 illustrates the rapid decline in the stock of affordable 2-bedroom apartments for 3 Western Melbourne LGAs between 2000 and 2009. In 2005, about 32 per cent of 2-bedroom apartments leased in Maribyrnong were considered affordable, significantly above the Melbourne average (13.4 per cent). By June 2009, 1.6 per cent of newly leased 2-bedroom apartments in Maribyrnong were considered affordable, now below the Melbourne average (3.0 per cent). Equally steep declines in affordability are seen in Brimbank (Middle West) and Wyndham (Outer West), although a significant proportion of new rental properties were still considered affordable.

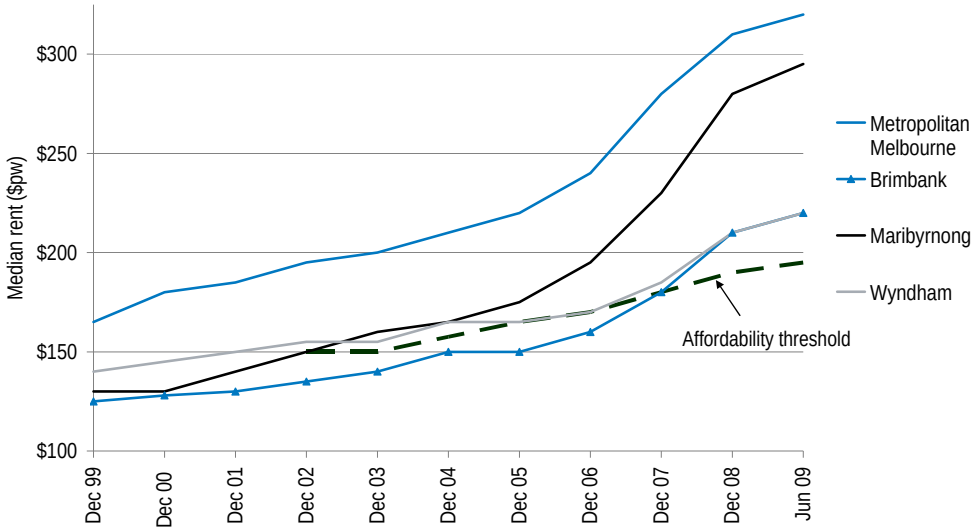
CHART 2.10 PERCENTAGE OF NEWLY-RENTED 2-BEDROOM FLATS CONSIDERED 'AFFORDABLE' FOR SELECTED WESTERN MELBOURNE LGAS (BRIMBANK, MARIBYRNONG AND WYNDHAM), DECEMBER 1999 – JUNE 2009



Note: The affordability threshold is calculated as 30 per cent of the income that a single parent with one child receives if living solely on government welfare payments.
Source: Derived from Victorian Office of Housing Rental Reports, 1999-2008.

Chart 2.11 summarises median rental prices for 2-bedroom apartments. From 2005 to 2009, the transformation of the Maribyrnong rental markets was extremely rapid. During this period, median rental prices increased from close to the 'affordability threshold' to a level around $100 above the affordability threshold. In the same period, median rents in Brimbank increased rapidly, to a point that they are now roughly equal to those in Wyndham. If such a trend continues, the Outer West may see significant increases in inflows of lower income households as housing market pressures closer to the CBD increase.

CHART 2.11 MEDIAN WEEKLY RENT ($) FOR A 2-BEDROOM FLAT FOR SELECTED WESTERN MELBOURNE LGAS (BRIMBANK, MARIBYRNONG AND WYNDHAM), DECEMBER 1999 – JUNE 2009



Note: The affordabilty threshold is calculated as 30 per cent of the income that a single parent with one child receives if living solely on government welfare payments. The affordability threshold is only provided after December 2002.
Source: Derived from Victorian Office of Housing Rental Reports, 1999-2009.

To investigate the impacts of gentrification on low income households in Melbourne's Inner West, we interviewed 17 social service providers in the Footscray area (Maribyrnong) in mid-2008. Several points are worth mentioning briefly. First, housing agents stressed that most of the Inner West had in recent years become unaffordable for families dependent on social security and the working poor. Despite many households expressing a high preference to live in the Inner West, housing agents were advising clients to search for rental accommodation in the Middle and Outer West to ensure they were not spending more than 50 per cent of their income on housing. Many low income families were moving to Sunshine and St Albans. Increasingly, however, families were searching further afield from the CBD in those areas of Melton and Wyndham which have ageing housing stock. Social service providers were concerned that these outlying areas were less suitable than areas closer to the CBD for many low income groups (for example, refugees, the elderly, or people with a disability) as they are less well served by public transport and social services, and are further from existing communities and job networks. Overall, our interviews suggest that housing market pressures have in recent years made the Inner West increasingly unaffordable for low income households, forcing them to search for housing further from the CBD.

WHERE DO THE 'GENTRIFIERS' WORK?

An important trend identified in this chapter is the inflow of university graduates and managers and professionals, particularly to the Inner West and Wyndham–South. This section explores the journey to work patterns of those university graduates and managers and professionals who have moved to

Western Melbourne between 2001 and 2006. It provides some insight into how continued 'gentrification' is likely to transform the areas where Western Melbourne's residents tend to work. Given gentrification is likely to continue, this analysis will be of interest to those planning future transport infrastructure for the region.

Table 2.6 outlines the place of work for all Western Melbourne residents in 2006. Most people *living in the Inner West* work either in the Inner West or Inner Melbourne. Few people living in the Inner West travel 'out' to work in the Middle and Outer West, where a sizable percentage of people work locally (18.3 to 44.2 per cent). Nevertheless, a large proportion of people living in Middle and Outer West, work in Inner Melbourne, the Inner West or the Rest of Melbourne (42.4 to 55 per cent).

TABLE 2.6 PLACE OF WORK FOR EMPLOYED RESIDENTS OF WESTERN MELBOURNE, 2006

		PLACE OF WORK, % OF RESIDENTS (2006)*						
SLA OF RESIDENCE (2006)	RESIDENTS EMPLOYED, 2006	NOT STATED	REST OF VICTORIA AND AUST	REST OF MELB	INNER MELB	INNER WEST	MIDDLE AND OUTER WEST	% WORKING IN INNER MELBOURNE, REST OF MELBOURNE OR THE INNER WEST
Inner Western Melbourne								
Hobson's Bay (C) – Williamstown	14,318	3.6	4.2	11.2	35.9	34.0	10.1	81.0
Maribyrnong (C)	28,220	6.2	4.9	13.6	38.6	26.9	9.8	79.1
Moonee Valley (C) – Essendon	32,087	4.3	4.8	19.9	39.1	25.9	6.0	84.9
Moonee Valley (C) – West	18,235	5.4	5.9	21.8	26.7	29.8	10.4	78.3
Hobson's Bay (C) – Altona	22,153	6.2	5.5	9.1	25.8	35.1	18.3	70.0
Middle Western Melbourne								
Brimbank (C) – Keilor	37,671	7.8	6.2	18.6	21.0	15.8	30.6	55.4
Brimbank (C) – Sunshine	30,363	8.8	5.9	13.2	22.4	18.3	31.5	53.8
Outer Western Melbourne								
Melton (S) – East	18,973	6.4	6.7	18.6	23.9	14.2	30.2	56.7
Melton (S) – Balance	18,105	6.5	10.2	11.8	15.5	11.9	44.1	39.2
Wyndham (C) – North	34,643	5.7	7.1	8.0	21.3	16.2	41.8	45.4
Wyndham (C) – South	8480	4.4	6.5	11.4	32.7	15.7	29.3	59.8
Wyndham (C) – West	10,356	5.2	8.2	7.4	19.9	15.1	44.2	42.4
Western Melbourne Total	273,604	6.2	6.3	14.3	26.8	21.5	25.0	62.6

Note: *Place of work areas are constructed artificially from SLA level data. The 'Inner West' is comprised of Hobson's Bay, Maribyrnong and Moonee Valley SLAs. The 'Middle and Outer West' comprises Brimbank, Wyndham and Melton SLAs. 'Inner Melbourne' comprises Melbourne, Port Phillip and Yarra SLAs plus Stonington–Prahran. The 'Rest of Melbourne' comprises all other Melbourne statistical district (SD) SLAs.
Source: ABS Census data, through Tablebuilder, various years.

Tables 2.7 to 2.9 explore the place of work of university graduates and managers and professionals who moved into Western Melbourne between 2001-2006. Table 2.7 focuses on those persons who moved into the Inner West between 2001-2006. Interestingly, across all Inner West SLAs, recent arrivals are more likely to work in Inner Melbourne than the existing population. This suggests that many 'gentrifiers' are moving to Inner Melbourne in order to be as close as possible to jobs in Inner Melbourne (as well as families, friends and recreational activities outside of Western Melbourne). Given gentrification is likely to continue, if not accelerate, in the Inner West, this suggests increasing demand for transport linkages with Inner Melbourne and the rest of Melbourne.

TABLE 2.7 PLACE OF WORK FOR PROFESSIONALS AND MANAGERS AND EMPLOYED UNIVERSITY GRADUATES WHO MOVED TO HOBSONS BAY, MARIBYRNONG OR MOONEE VALLEY BETWEEN 2001 AND 2006

SLA OF RESIDENCE (2006)	RESIDENTS EMPLOYED 2006	% OF COHORT THAT MOVED INTO AREA SINCE 2001	% WORKING IN INNER MELBOURNE, INNER WEST OR REST OF MELBOURNE	PLACE OF WORK (%) OF AREA TOTAL WORKING IN AREA*		
				MIDDLE AND OUTER WEST	INNER WEST	INNER MELBOURNE
Hobson's Bay (C) – Altona	22,153	25.9	70	18.3	35.1	25.8
In-movers in last five years						
Professionals or managers	1784	25.9	76.3	15.4	23.6	38.7
Bachelor degree or greater	1587	41.7	77.4	14.9	21.1	42.5
Hobson's Bay (C) – Williamstown	14,318	35.2	81	10.1	34	35.9
In-movers in last five years						
Professionals or managers	2680	40.7	82.8	11	23.1	46.3
Bachelor degree or greater	2227	43.3	81.8	11.5	21.4	46.4
Maribyrnong (C)	28,220	43.6	79.1	9.8	26.9	38.6
In-movers in last five years						
Professionals or managers	4878	49.6	86.4	7.6	19.9	51.5
Bachelor degree or greater	5323	55.2	84.6	7.1	18.2	51.7
Moonee Valley (C) – Essendon	32,087	35	84.9	6	25.9	39.1
In-movers in last five years						
Professionals or managers	5174	36.3	88.1	6.1	16.2	51.7
Bachelor degree or greater	5108	41	87.7	5.9	15.5	53.4
Moonee Valley (C) – West	18,235	23.6	78.3	10.4	29.8	26.7
In-movers in last five years						
Professionals or managers	1506	27.3	84.3	9.4	22.4	36.5
Bachelor degree or greater	1172	29.9	83.8	9	20.6	38.2

Note: * Place of work areas are constructed artificially from SLA level data. The 'Inner West' is comprised of Hobson's Bay, Maribyrnong and Moonee Valley SLAs. Unlike previous sections, note that Hobson's Bay–Altona is included in the Inner West for journey to work analysis. The 'Middle and Outer West' comprises Brimbank, Wyndham and Melton SLAs. 'Inner Melbourne' comprises Melbourne, Port Phillip and Yarra SLAs plus Stonington–Prahran. The 'Rest of Melbourne' comprises all other Melbourne statistical district (SD) SLAs.
Source: ABS Census data, through Tablebuilder, various years.

Table 2.8 repeats the analysis for Middle Western Melbourne SLAs. Compared to the Inner West, a higher percentage of highly skilled, recent in-movers also work in the Middle and Outer West (14.9 to 25.1 per cent). Still, a majority work in the Inner West, Inner Melbourne or the rest of Melbourne (66.9 to 76.3 per cent).

TABLE 2.8 PLACE OF WORK FOR PROFESSIONALS AND MANAGERS AND EMPLOYED UNIVERSITY GRADUATES WHO MOVED TO BRIMBANK SINCE 2001

SLA OF RESIDENCE (2006)	RESIDENTS EMPLOYED, 2006	% OF COHORT THAT MOVED SINCE 2001	% WORKING IN INNER MELBOURNE, INNER WEST OR REST OF MELBOURNE	PLACE OF WORK (%) OF AREA TOTAL WORKING IN AREA*		
				MIDDLE AND OUTER WEST	INNER WEST	INNER MELBOURNE
Brimbank (C) – Keilor	37,671	18.7	55.4	30.6	15.8	21
In-movers in last five years						
Professionals or managers	1747	21.6	66.9	24.6	14	31
Bachelor degree or greater	1521	26.3	68.2	21.6	13.3	33.6
Brimbank (C) – Sunshine	30,363	26.2	53.8	31.5	18.3	22.4
In-movers in last five years						
Professionals or managers	1674	32.4	66.9	25.1	14.2	34.1
Bachelor degree or greater	1997	40.9	69.5	20	14.8	36.9

Note: *See Table 2.7.
Source: ABS Census data, through Tablebuilder, various years.

Table 2.9 focuses on Outer Western Melbourne. From 2001 to 2006, in SLAs with lower population growth (Melton–Balance 9.5 per cent, Wyndham–North 18.7 per cent, and Wyndham–West 16.9 per cent), between 44.6 per cent and 57.4 per cent of recent in-movers were graduates or professionals working in Inner Melbourne, the Inner West or the Rest of Melbourne. In the high population growth areas of Melton–East and Wyndham–South, these figures range from 66.4 per cent to 71.8 per cent. Interestingly, in these high growth SLAs, the overall population has a higher propensity to work closer to the CBD or in the rest of Melbourne than those SLAs with lower population growth. This data suggests that many people who are buying new houses in the Outer West are commuting 'into' work, particularly managers and professionals.

TABLE 2.9 PLACE OF WORK FOR PROFESSIONALS AND MANAGERS AND EMPLOYED PERSONS WITH A BACHELOR DEGREE OR HIGHER QUALIFICATION WHO MOVED TO MELTON OR WYNDHAM SINCE 2001

SLA OF RESIDENCE (2006)	RESIDENTS EMPLOYED, 2006	% OF COHORT THAT MOVED IN SINCE 2001	% WORKING IN INNER MELBOURNE, INNER WEST OR REST OF MELBOURNE	PLACE OF WORK (%) OF AREA TOTAL WORKING IN AREA*		
				MIDDLE AND OUTER WEST	INNER WEST	INNER MELBOURNE
Melton (S) – East	18,973	57.7	56.7	30.2	14.2	23.9
In-movers in last five years						
Professionals or managers	2934	61.5	66.4	27.4	12.7	32.8
Bachelor degree or greater	2357	65.5	67.8	25.5	12.3	35.9
Melton (S) – Balance	18,105	19.8	39.2	44.1	11.9	15.5
In-movers in last five years						
Professionals or managers	704	20.6	44.6	42.2	10.9	19.3
Bachelor degree or greater	449	27.2	49.9	36.7	9.8	26.1
Wyndham (C) – North	34,643	27.5	45.4	41.8	16.2	21.3
In-movers in last five years						
Professionals or managers	2391	31.3	55.3	35	11.6	31.9
Bachelor degree or greater	1928	38.9	57.2	32.3	10.4	35.8
Wyndham (C) – South	8480	74.4	59.8	29.3	15.7	32.7
In-movers in last five years						
Professionals or managers	2547	77	69.9	21.9	12.1	44
Bachelor degree or greater	1903	83.6	71.8	20	11.5	47.1
Wyndham (C) – West	10,356	35	42.4	44.2	15.1	19.9
In-movers in last five years						
Professionals or managers	863	38.2	51.8	37.8	12.6	28.3
Bachelor degree or greater	535	45	57.4	31.8	10.7	34.4

Note: *See Table 2.7.
Source: ABS Census data, through Tablebuilder, various years.

In summary, many of the university graduates and managers and professionals moving to Melbourne's West still commute 'into' work. This pattern is particularly strong in the gentrifying Inner West. Of particular interest is the high propensity of professional in-movers to the growth areas of Outer Melbourne, to commute 'into' jobs in the CBD or other parts of Melbourne. If such trends continue, high priority will need to be given to upgrading transport linkages between the West and Inner Melbourne. On the other hand, if more firms or other organisations requiring a professional workforce can be attracted to the region, the group identified in this chapter provides a local base for such a workforce.

CHAPTER 3. ACTIVITY CENTRES

This chapter considers the proposal to develop Footscray as a CAD and reviews the existing structure of the Sunshine Principal Activity Centre. It reviews, firstly, the development of Victorian government policies that led to the proposal to 'upgrade' Footscray Principal Activity Centre into a CAD. It then presents in some detail the socioeconomic data about Footscray and the surrounding LGA of Maribyrnong and finally undertakes a comparison of the current employment structures of the proposed CADs with that of the current employment structure of the City of Melbourne. This analysis, in revealing the extent of socioeconomic disadvantage in Footscray and some of the other challenges, such as the fragmentation of key centres of activity in the immediate surrounding area, demonstrates both the need for concerted policy action and the difficulties to be overcome in implementing the Government's plans. A similar socioeconomic analysis of Sunshine is undertaken and some of the features of the activity centre discussed.

GOVERNMENT PROPOSAL TO ESTABLISH CADS

In its *Melbourne 2030* planning document released in October 2002 (DSE and Government of Victoria 2002), the Government viewed the development of a hierarchy of activity centres as having a number of advantages. These included reducing the number of private motorised trips, broadening the mix of uses and providing focal points that could be accessed by walking, cycling and public transport (p. 46). Accordingly, *Melbourne 2030*, recommended the establishment of:

- 27 principal activity centres;
- 82 major activity centres;
- 10 specialists activity centres; and
- more than 900 small-scale neighbourhood activity centres.

The Strategy drew a diverse range of public comment, some of which is discussed below. In December 2008, *Melbourne @ 5 million* (DPCD 2008) updated the *Melbourne 2030* strategy and announced the Government's intention to designate six Principal Activity Centres as Central Activities Districts (CADs) (with one at Footscray). This reflected a need to accommodate a larger population than envisaged in 2003. Rather than a monocentric city situated in a hierarchy of much smaller activity centres, the Government suggested that Melbourne needed to become a polycentric city with a small number of centres, each with CBD-like functions, that would provide a wide range of services and hence a concentration of a complex array of jobs.

> We need a 'multi-centre' city structure that builds on the principles and directions of *Melbourne 2030* but acknowledges the need for a better distribution of jobs and activity, so that Melburnians can work closer to where they live. Moving from one CBD to a number of CBD-like centres will reduce congestion and enable people to spend less time commuting to and from work and more time with their family. (DPCD 2008, p. 9)

Central activities districts are to provide:

- significant CBD-type jobs and commercial services;
- a strong and diverse retail sector;
- specialised goods and services drawing on a large regional catchment;
- significant opportunities for housing redevelopment in and around these centres;
- high levels of accessibility for walking, cycling, public transport or car by being located at a junction in the Principal Public Transport Network; and
- vibrant centres of community activity with a range of public facilities. (DPCD 2008, p. 11)

Public Comment on the Activity Centre strategy

Following the release of *Melbourne 2030*, public comment about the proposed hierarchy of activities districts included criticism from Birrell et al. (2005) and O'Connnor (2003), which questioned the appropriateness of the strategy for Melbourne. They argued that the concept had greater application to the US where the 'new urbanism' movement of the late 1980s and early 1990s was a response to a much more serious level of urban dispersal than is common in Melbourne (O'Connor 2003, p. 212). New urbanism promotes the idea of the neighbourhood which has a strong centre, with most dwellings within a quarter of a mile from the centre.

In Melbourne, land release controls are much more rigorous than they are in the uncoordinated set of communities that draw development to the fringes of the big US metropolitan areas (O'Connor 2003, p. 212), and hence urban dispersal is not as serious a problem in Victoria as it is in the US. *Melbourne 2030* also sought to limit the urban growth boundary (UGB) by clearly defining the metropolitan urban boundary.

Perhaps a more fundamental criticism was about the blunt tools available for its implementation, which are largely land zoning, land release and urban design. O'Connor (2003), commenting on the release of the *Melbourne 2030* plan, suggested that the transport plans, which were developed subsequently, should have been formative of it.

Melbourne @ 5 million

Melbourne @ 5 million addressed these issues in a number of ways. Firstly, six new CADs with CBD like functions were designated. This will enable government to concentrate its resources and policy tools on a smaller number of key centres

Secondly, *Melbourne @ 5 million* was more explicit about the role of the location of jobs in supporting the planned urban form and recognised the need to build jobs in the Central Activities Districts and employment corridors that were closer to where people lived. Specifically, each CAD is to provide:

- services and functions, including commercial, retail, specialised personal services, entertainment, educational, government and tourism, similar to the CBD;
- significant employment concentrations; and
- high quality, well designed working urban environments.

The Strategy recognises that the CADs will reflect local conditions. Each Centre will 'differ in role, catchment and opportunities' (DPCD 2008, p. 11).

Thirdly, the transport and land use plans were better integrated. The Victorian Transport Plan was released at the same time as *Melbourne @ 5 million* and based on its assumed spatial pattern. The infrastructure investments, particularly those favouring public transport, outlined in the Victorian Transport Plan (VTP) gave real 'muscle' to the plans outlined in *Melbourne @ 5 million*. The VTP recognised the need for better links between the CADs and converting Melbourne from a monocentric to a polycentric city.

Nonetheless, many of the major proposed investments also provide improved access to the CBD and Inner Melbourne and overcoming the existing bottlenecks between the CBD and the West. Of particular relevance to the Footscray CAD are:

- The proposed new rail tunnel linking east and west Melbourne. This provides greater access between Footscray, the western suburbs and the CBD; and new access to the education and biotechnology clusters in Parkville and the information communications technology on St Kilda Road. $40 million has been allocated for planning, with Stage 1 expected to start in 2012 and be completed in 2018 at a cost in excess of $4.5 billion. Stage 2 is expected to connect St Kilda Road to Caulfield and will be considered after Stage 1 is completed.
- An alternative to the West Gate Bridge. A new tunnel from Geelong Road/Sunshine Road to Dynon Road/Footscray Road in the Port of Melbourne precinct will relieve Melbourne's dependence and reduce traffic congestion on the West Gate Bridge at a cost of more than $2.5 billion.
- Truck Action Plan. This is a 2-stage plan to remove thousands of trucks from residential areas in Melbourne's Inner West and improve freight access to the Port of Melbourne, including a new link from the West Gate Freeway into the port and upgrades to other key routes in the Inner West. Stage 1 will cost $380 million.
- Major investment in urban public transport rolling stock. This includes 70 new trains costing $2.6 billion.

Some of the planned investments listed above also contain benefits for the Footscray CAD. Better public transport has the potential to bring more passengers to Footscray. Several outer suburban rail investments will also improve access from its hinterland to the Footscray CAD. These include:

- Upgrade of the Melton Line and electrification of the line to Sunbury (which has had a $204.7 million allocation in the 2009 Budget and work is to commence in 2010).
- A new 40 kilometre twin-track rail link from West Werribee to Southern Cross Station via Tarneit and Sunshine, and new platforms at Southern Cross Station, will separate regional and metropolitan train services. Rapid access to the city for Geelong, Ballarat and Bendigo trains will be created at a cost of over $4 billion.
- Construction of new stations at Caroline Springs and Williams landing to be commenced in 2010, and other stations to be built 'as development progresses and patronage rises', with sections of the line duplicated (there are currently double tracks to Caroline Springs) to increase train numbers. In the medium to long term, as the proposed Rockbank major activity centre is developed, the line will be electrified to serve the future needs of this growth area.

This discussion of future transport investments, forms part of a more general point about the location of infrastructure, of a wide variety of types, as having a greater influence on the urban form than a financially constrained urban concept plan. As O'Connor (2003) suggests, this relates, not only to transport infrastructure, which undoubtedly has a powerful influence, but also to various forms of public

infrastructure that include hospitals, universities and research institutions, the location over which the State Government retains considerable influence. In contrast, it now has less influence over some of the providers of other networked infrastructure such as electricity and telecommunications, most of which is now privatised or at least corporatised. 'The water, energy, transport and telecommunications agencies are now more short-term market driven than were their predecessors, who were in effect market shapers' (O'Connor 2003, p. 214), making the location of the remaining publicly-owned infrastructure all the more important.

The economic stimulus package, relating to the global financial crisis, with its large investment in infrastructure, has interrupted a two-decade long trend towards smaller government, lower levels of public investment in infrastructure, and a greater emphasis on market measures as policy instruments.

FOOTSCRAY CENTRAL ACTIVITIES DISTRICT (FCAD)

The Footscray CAD, located in the Maribyrnong LGA was once a thriving regional hub, but has been on the decline since the mid 1980s, as many of the manufacturing industries which gave the area its prosperity have undergone significant structural change (Walsh 2005). The Victorian Government has committed $52.1 million over four years to revitalise the centre as part of the *Melbourne 2030* Transit Cities Program (Footscray Renewal). Projects include:

- an upgrade of Nicholson Street mall and other main streets in central Footscray;
- a new, modern pedestrian bridge and public forecourt at Footscray station to improve access and safety;
- a new one-stop planning shop for the marketing and development of central Footscray; and
- a number of community events including Footscray Flicks, Footscray 150 Festival, and Tai Chi in the Nicholson Street mall.

Other renewal projects completed in the area include:

- Maddern Square upgrade;
- Stage 1 Nicholson St Mall upgrade ($2.5 million);
- Stage 2 Nicholson St Mall upgrade ($2 million);
- Greening Footscray Project,

The objectives for the FCAD as listed in the *Footscray Strategic Framework Report* (CPG Australia 2009) are:

- to strengthen Footscray's role as the region's key centre for employment, services and public facilities;
- to provide for a diverse range of housing, significant CBD-type jobs and commercial services;
- to attract the private sector to invest in Footscray;
- to promote Footscray as an artsy, edgy, affordable, regional and multicultural centre;
- to support and retain cultural, socioeconomic and land-use diversity;
- to create a sustainable centre based on walking, cycling, public transport and high quality development; and

- to revitalise Footscray as a vibrant, safe and friendly place during both day and night.

Footscray in the Maribyrnong LGA

Footscray CAD is situated in a culturally and economically diverse neighbourhood. Socioeconomic data for the LGA shows wide variations in incomes, social disadvantage and ethnic background. As discussed in Chapter 2, the nearby suburbs of Yarraville, Seddon and parts of the suburb of Maribyrnong are undergoing gentrification, introducing higher income professionals, many of whom have degrees or higher qualifications. A high proportion of these new arrivals are from overseas, particularly India. The 'gentrifiers' tend to work in the CBD in service industries such as finance and professional services that have little representation in the Footscray CAD. This influx, however, has changed the nature of an area that has been heavily disadvantaged. This is reflected in average incomes and the SEIFA (Socio-economic Indexes for Areas) scores for Maribyrnong suburbs and other Western Region LGAs. The ABS SEIFA indices provide a number of measures of relative disadvantage by LGA according to a range socioeconomic data. There are four indices which measure slightly different but overlapping things. The most commonly used is that of relative socio economic disadvantage, but indices for economic resources and education and occupation are also compiled (see ABS 2039).

Maribyrnong's median income for individuals is around $423 per week, which is lower than the $481 for Metropolitan Melbourne and the median for Victoria at $456 (see Table 3.1). However, the diversity of the LGA is demonstrated by some areas within the municipality that have relatively high median incomes such as Seddon at $578, Kingsville $563 and Yarraville $557; but it also has Braybrook where the median income is $256 per week. The median income in Footscray itself is $352 and in West Footscray $404 (MCC 2008, p. 9).

TABLE 3.1 MEDIAN INCOMES BY WESTERN REGION LGAS, METROPOLITAN MELBOURNE AND VICTORIA, 2006, $ PER WEEK

Brimbank	$358
Hobson's Bay	$463
Maribyrnong	$423
Melton	$505
Moonee Valley	$488
Wyndham	$517
Metro Melbourne	$481
Victoria	$456

Source: Victorian LGAs, available at: http://www.vlga.org.au/resources/items/2008/11/238690-upload-00001.xls accessed November 2008.

Table 3.2 further illustrates the diversity of the LGA with median house prices ranging from $350,000 in the poorer suburb of Braybrook to $666,000 in the suburb of Maribyrnong. Nonetheless, in the period shown, Braybrook had the highest growth rate of 31.6 per cent indicating that the gentrifiers are broadening their range.

TABLE 3.2 MEDIAN HOUSE PRICE BY SUBURB			
SUBURB	MEDIAN MAR/08 $	MEDIAN MAR/07 $	ANNUAL CHANGE %
Braybrook	350,000	239,500	31.6
Footscray	463,000	370,000	20.1
Footscray West	450,000	326,000	27.6
Kingsville	558,000	460,000	17.6
Maribyrnong	666,000	530,000	20.4
Maidstone	450,000	315,000	30.0
Seddon	545,000	392,000	28.1
Yarraville	566,250	454,500	19.7

Source: MCC (2008, p. 19).

Overall, Maribyrnong is currently one of the most disadvantaged LGAs in Victoria. It is rated in the lowest decile in the index for relative socioeconomic disadvantage (ranking 7th in the State), the second lowest in the index for economic resources (see Table 3.3). The Maribyrnong Profile suggests it is the third most disadvantaged in the Metropolitan area (out of 31) (MCC 2008). However its rank in terms of education and occupation is one of the highest in the Region reflecting the gentrification led by degree qualified professionals. The higher rank for relative socio economic advantage and disadvantage also reflects the positive influence of the proportion of higher income groups in the LGA.

TABLE 3.3 SEIFA FOR THE WESTERN MELBOURNE METROPOLITAN REGION AND MELBOURNE						
	RELATIVE SOCIOECONOMIC DISADVANTAGE			RELATIVE SOCIOECONOMIC ADVANTAGE AND DISADVANTAGE		
	SCORE	RANK IN VIC	DECILE	SCORE	RANK IN VIC	DECILE
Brimbank	930	3	1	935	21	5
Hobson's Bay	998	44	6	998	57	9
Maribyrnong	949	7	1	981	49	8
Melton	1010	51	7	988	52	8
Moonee Valley	1016	55	7	1029	63	9
Wyndham	1022	58	8	1005	58	9
	ECONOMIC RESOURCES			EDUCATION AND OCCUPATION		
	SCORE	RANK IN VIC	DECILE	SCORE	RANK IN VIC	DECILE
Brimbank	970	26	5	921	4	1
Hobson's Bay	992	44	7	993	55	7
Maribyrnong	934	2	2	1022	63	8
Melton	1029	66	9	947	18	3
Moonee Valley	1000	48	7	1041	65	9
Wyndham	1025	62	9	965	36	5

Source: ABS, SEIFA.

With respect to education outcomes, a higher proportion of the population had completed year 12 or equivalent in Maribyrnong than is the case for all of Melbourne (see Table 3.4). However, a higher proportion of the population did not go to school in Maribyrnong than is the case for Melbourne as a whole.

TABLE 3.4 PERSONS AGED 15 YEARS AND OVER WITH LEVEL OF SCHOOLING COMPLETED, MARIBYRNONG AND MELBOURNE, 2006				
	MARIBYRNONG		MELBOURNE	
PERSONS AGED 15 YEARS AND OVER	NUMBERS	%	NUMBERS	%
Year 12 or equivalent	27,332	51.7	1,415,171	48.5
Year 11 or equivalent	4584	8.7	364,804	12.5
Year 10 or equivalent	5264	10.0	407,941	14.0
Year 9 or equivalent	2537	4.8	178,290	6.1
Year 8 or below	5203	9.8	226,983	7.8
Did not go to school	1360	2.6	38,445	1.3
Highest year of school not stated	6544	12.4	283,767	9.7
Total	52,824	100	2,915,401	100

Source: ABS Census data (2007a).

As discussed in Chapter 2, the 'gentrifiers' have above average levels of education, so Maribyrnong now has a slightly higher proportion of graduates, postgraduates and those with a graduate Diploma or certificate than is the case for Melbourne as a whole (see Table 3.5).

TABLE 3.5 PERSONS AGED 15 YEARS AND OVER WITH A POST SCHOOL QUALIFICATION, MARIBYRNONG AND MELBOURNE, 2006				
	MARIBYRNONG		MELBOURNE	
PERSONS AGED 15 YEARS AND OVER	NUMBERS	%	NUMBERS	%
Postgraduate degree	2133	7.4	95,916	6.1
Graduate diploma & graduate certificate	1142	4.0	58,034	3.7
Bachelor degree	8295	28.8	418,334	26.5
Advanced diploma & diploma	3640	12.6	223,276	14.1
Certificate:				
Certificate nfd	658	2.3	42,185	2.7
Certificate III & IV	4676	16.2	345,725	21.9
Certificate I & II	416	1.4	24,286	1.5
Total	5750	20.0	412,196	26.1
Level of education inadequately described	696	2.4	39,022	2.5
Level of education not stated	7134	24.8	333,718	21.1
Total	28,790	100	1,580,496	100

Source: ABS Census data (2007a).

As Table 3.6 indicates, there is a higher proportion of professionals in Maribyrnong (24.1 per cent) and community and service workers (8.8 per cent), than is the case for Melbourne as a whole (22.6 per cent and 8.1 per cent respectively). Some of the diversity is shown by the high concentrations of professionals in Seddon (31 per cent of its labour force), followed by Yarraville (30 per cent) and Kingsville (29 per cent). On average, 34 per cent of the labour force had university qualifications; in some parts of the municipality the proportion was as high as 53 per cent. The highest concentration of university qualified people was in the Footscray, Seddon, Yarraville corridor (MCC 2008).

TABLE 3.6 PROPORTION OF WORKERS IN EACH OCCUPATION CATEGORY, MARIBYRNONG AND MELBOURNE, 2006		
	MARIBYRNONG %	MELBOURNE %
Managers	10.7	12.5
Professionals	24.1	22.6
Technicians & trades workers	11.5	13.6
Community & personal service workers	8.8	8.1
Clerical & administrative workers	15.3	15.9
Sales workers	9.0	10.2
Machinery operators & drivers	7.6	6.4
Labourers	10.4	8.7
Inadequately described or not stated	2.5	2.0
Total numbers	28,247	1,685,963

Source: ABS Census data (2007a).

Maribyrnong has a distinct advantage as a LGA with a diverse population (see Table 3.7). Of those born overseas, most were from Vietnam, although China, India and the United Kingdom are also represented. This can be a significant asset for any region, as these residents have links overseas and can, at times, attract investment from their home countries. These investments tend to be in localities where their contacts live, which in turn helps make the locality more global in its perspective.

TABLE 3.7 PROPORTION OF RESIDENTS BY COUNTRY OF BIRTH, MARIBYRNONG, 2006			
	NUMBERS	%	% OF OVERSEAS BORN
Australia	33,060	52.4	
Vietnam	6131	9.7	25.0
China	1653	2.6	6.7
India	1616	2.6	6.6
United Kingdom	1596	2.5	6.5
Italy	1239	2.0	5.1
Greece	1073	1.7	4.4
Not stated	5584	8.8	22.8
All others	11,188	17.7	45.7
Total population	63,140	100.0	24,496

Source: ABS Census data (2007a).

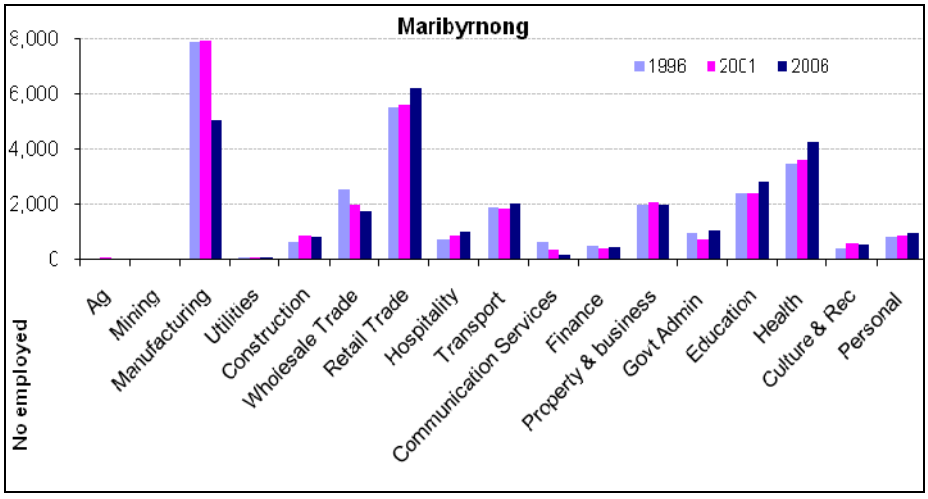
As Table 3.8 indicates, population in the City of Maribyrnong increased by 6.1 per cent between 1996 and 2006 and the working population by 6.9 per cent. However jobs in Maribyrnong fell by 3.0%.

TABLE 3.8 SELECTED POPULATION FIGURES, CITY OF MARIBYRNONG					
	1996	2001	2006	1996-2001 % CHANGE	2001-2006 % CHANGE
Population*	59,050	59,514	63,141	0.78	6.10
Working age population (aged 15 years and over)	48,624	49,405	52,826	1.60	6.92
Employment in Maribyrnong	30,532	30,152	29,245	-1.24	-3.01

Note: *Based on place of usual residence.
Source: DIIRD (2009b).

The number of jobs in Maribyrnong fell largely as a result of the job losses felt in the textile, clothing, footwear and leather (TCFL) industry (see Chart 3.1). Indeed, Maribyrnong had the most TCFL job losses out of all the SLAs between 2001 and 2006, from 1,932 workers in 2001 to 744 workers in 2006. Since the 2006 Census, further manufacturing industry job losses have been announced within the SLA/LGA, such as Huntsman Chemicals in West Footscray, who decided in September 2009 to close its Footscray operation with 325 full-time jobs to go.[3] As a result of this shift, retail trade is now the predominant industry in the SLA/LGA, followed by manufacturing, health and community services, and education (DIIRD Policy Research Unit 2009b). Jobs in health and education have grown somewhat in the period 2001 to 2006. Otherwise, the service sector has contributed very little to employment levels in Maribyrnong.

CHART 3.1 MARIBYRNONG EMPLOYMENT BY INDUSTRY BASED ON WORKPLACE DESTINATION



Source: DIIRD (2009b).

As Table 3.9 indicates a large proportion of residents work outside the city (72.4 per cent), indicating few employment opportunities for local residents, with 28 per cent travelling to Melbourne. Less than 2 per cent of the workers working in Maribyrnong come from Melbourne.

[3] http://www.huntsman.com/eng/News/News/index.cfm?PageID=7379

TABLE 3.9 WHERE RESIDENTS WORK AND WHERE WORKERS COME FROM IN THE CITY OF MARIBYRNONG					
WHERE RESIDENTS WORK			WHERE WORKERS COME FROM		
	NUMBER	%		NUMBER	%
Within city	5214	18.5	Live and work within city	5214	17.8
Outside city	20,445	72.4	Live outside but work within city	24,031	82.2
Live within, work location unknown	2587	9.2			
Employed residents	28,246	100.0	Total workers	29,245	100.0

Source: ABS Journey to Work data (2006).

Table 3.10 shows the same data by LGA. It shows that only 36.1 per cent of Maribyrnong residents work in the Western Region. In contrast, Maribyrnong draws about two thirds of its workforce from the Western Region LGAs, including 17.8 per cent from Maribyrnong and a further 17.4 per cent from neighbouring Brimbank. So it has an important regional role as an employment node, even though most of its residents work elsewhere. This further illustrates the mismatch between its jobs and the skills and job aspirations of its residents.

TABLE 3.10 WHERE RESIDENTS WORK AND WHERE WORKERS COME FROM IN THE CITY OF MARIBYRNONG BY LGA					
WHERE RESIDENTS WORK			WHERE WORKERS COME FROM		
Melbourne	7899	28.0	Melbourne	517	1.8
Maribyrnong	5214	18.5	Maribyrnong	5214	17.8
Brimbank	1676	5.9	Brimbank	5094	17.4
Hobson's Bay	1380	4.9	Hobson's Bay	2564	8.8
Moonee Valley	987	3.5	Moonee Valley	2606	8.9
Wyndham	919	3.3	Wyndham	2555	8.7
			Melton	1842	6.3
Total Western Region	10,176	36.1	Total Western Region	19,875	67.9
Hume	904	3.2	Hume	1163	4.0
Port Phillip	1556	5.5	Port Phillip		
Yarra	1163	4.1	Yarra		
Moreland	496	1.8	Moreland	1194	4.1
			Darebin	593	2.0
Other areas	6052	21.4	Other areas	5903	20.2
Total	28,246	100.0	Total	29,245	100.0

Source: City of Maribyrnong, available at: http://profile.id.com.auDefault.aspx?id=250&gid-10&type=enum accessed December 2009.

Summary

Maribyrnong is undergoing significant economic, social and cultural structural change. There is strong evidence of gentrification as discussed in detail in Chapter 2. This is bringing an influx of higher income professionals many from overseas countries, particularly India, who are bidding up house prices from previously very low levels to much closer to the average for the inner suburbs of Melbourne. A high

proportion of the new arrivals in the LGA work in the CBD and other parts of Inner Melbourne, not in Maribyrnong. The well-qualified new arrivals from India represent an opportunity for the LGA to link more strongly to this fast growing country.

On the other hand, Maribyrnong remains one of the most socially disadvantaged LGAs in Melbourne. Incomes in parts of the LGA are very low by metropolitan standards and many of its residents are in need of social assistance.

Jobs in Maribyrnong have been declining, with the fall in manufacturing being particularly sharp. Retail is now the largest sector. There is some modest expansion in jobs in health and education, but these are not sufficient to offset the falls in manufacturing. Employment in other services is relatively low and showing relatively little growth. Maribyrnong draws about two thirds of its workforce from the Western Region, even though only about 18 per cent of its residents work in the LGA.

Footscray CAD

The Footscray CAD is located only 6 kilometres from the CBD, the closest to the CBD of all the CADs. The next closest is Box Hill which is 15 kilometres. It is, however, separated from the CBD by the Port and rail terminal which occupies land that historically was too swampy for residential development. It is also somewhat divided from the rest of the City by the Maribyrnong River. There are only two road crossings which are a source of congestion at peak periods. Although these factors tend to add to the separation between Footscray and the CBD, nonetheless, the close proximity of the CBD continues to narrow the range of economic activities that are viable at the Footscray CAD.

Both the Nicholson St and major Footscray campuses of Victoria University are considered part of the CAD although the later is on the periphery of the boundary. The Western General Hospital is about 1 kilometre away, but outside the CAD.

Perhaps more importantly, one of the largest shopping precincts in Victoria, the Highpoint Shopping Centre is outside the Footscray CAD, but in the Maribyrnong LGA. In 2007, it had a turnover of $735 million, the second largest shopping centre turnover in Victoria and the fourth in Australia (MCC 2008). Adjacent to the shopping centre are homemaker centres and big box retailing outlets. On a per-capita basis, the level of provision of retail floor space (250,000 square metres, excluding local activity centres and small destination centres, with an estimated extra 20,000 square metres) in Maribyrnong is more than twice that of the metropolitan average. The Maribyrnong City Council *Economic Profile* (MCC 2008) estimates that retailers in Maribyrnong are heavily reliant (50 to 60 per cent of all retail spending) on people coming in from other municipalities. This makes it difficult for the Footscray CAD to satisfy one of the requirements for CADs, which is to provide ‘a strong and diverse retail sector’ (CPG Australia 2009, p. 11).

Analysis from the DIIRD Policy and Research Unit (2009b) suggests that between 2001 and 2006 employment in the Footscray CAD decreased marginally from 7660 to 7591 (and this includes a boundary change). Almost 20 per cent of employment was in education, presumably based at the Victoria University campus. Health and community service is the next highest employing industry. The largest employing health sub-industry is ‘Other Social Assistance Services’, most likely migrant and welfare support agencies. Retail Trade is the third largest employing industry, and Department Stores is

the highest employing 4-digit sub-industry (possibly Dimmeys, now closed). As indicated earlier, the Highpoint Shopping Centre in Maribyrnong does not fall within the Footscray CAD. It is also worth noting that the arts and recreation industry in the Footscray CAD has only 60 employees (0.8 per cent of employment).

TABLE 3.11 EMPLOYMENT BY INDUSTRY DISION IN FOOTSCRAY CAD

	NUMBER OF PEOPLE EMPLOYED	% OF CAD
Education	1488	19.77
Health & Community Services	1093	14.52
Retail Trade	938	12.47
Public Administration & Safety	678	9.01
Manufacturing	480	6.38
Other Services	426	5.66
Wholesale Trade	394	5.24
Information & Media Telecommunications	374	4.97
Transport Postal & Warehousing	368	4.89
Professional Scientific & Technical Services	302	4.01
Accommodation & Food Services	284	3.77
Administration & Support Services	262	3.48
Finance & Insurance Services	156	2.07
Construction	116	1.54
Rental, Real Estate & Hiring Services	93	1.24
Arts & Recreation Services	60	0.80
Electricity, Gas, Water & Waste	9	0.12
Agriculture, Forestry & Fishing	4	0.05
Total	7525	

Source: DIIRD (2009a).

As noted above, the largest employing Health sub-industry is 'Other Social Assistance Services'. Demand for social assistance services is mainly dependant on such factors as the continuing level of disadvantage arising from such factors as the high level of unemployment, particularly for 15-19 year olds, and those needing aged care and child care. The high proportion of migrants has also traditionally added to the demand for social assistance, although this may be changing with many of the newer arrivals with higher levels education better equipped to find jobs in the service sector.

TABLE 3.12 TOP TEN INDUSTRY CLASSES BY PLACE OF EMPLOYMENT IN THE FOOTSCRAY CAD		
		NUMBER
1	8102 Higher Education	1177
2	8790 Other Social Assistance Services	377
3	7510 Central Government Administration	370
4	5413 Book Publishing	336
5	7530 Local Government Administration	183
6	2299 Other Fabricated Metal Product Manufacturing nec	163
7	4622 Urban Bus Transport (Including Tramway)	142
8	4511 Cafes & Restaurants	130
9	4260 Department Stores	129
10	4110 Supermarket & Grocery Stores	125

Source: DIIRD (2009a).

Within Footscray (that is the Footscray and West Footscray suburbs), most of the population born overseas is from Vietnam. However, as Chart 3.2 indicates, recent arrivals (those who arrived since 2004) are from India and China, both the fastest developing economies in the world. As such this is an asset for the FCAD.

A much higher proportion of those in Footscray born overseas are from India and China than is the case for Melbourne as a whole. Footscray also has a much higher proportion of recent arrivals from India and China than is the case for Melbourne. This mix of Asian nationalities has had a profound effect on its retailing activities. Asian food stores and restaurants are an important part of the Footscray retail sector (see Table 3.13).

TABLE 3.13 TOP COUNTRIES OF BIRTH OF RESIDENTS (EXCLUDING AUSTRALIA) OF FOOTSCRAY AND MELBOURNE, PROPORTION OF TOTAL BORN OVERSEAS AND RECENT ARRIVALS AS A PROPORTION OF TOTAL FROM THE COUNTRY, 2006					
	FOOTSCRAY			MELBOURNE	
	Recent arrivals as % of total arrivals for country	Total from country as % of total born overseas		Recent arrivals as % of total arrivals for country	Total from country as % of total born overseas
Vietnam	6.0	23.0	Born elsewhere	11.5	17.1
Born elsewhere	29.2	21.2	United Kingdom	5.6	15.1
India	56.3	11.3	Italy	0.5	7.1
China*	44.7	8.3	Vietnam	4.4	5.6
Italy	0.8	5.0	China*	20.0	5.3
United Kingdom	2.3	5.0	New Zealand	13.6	5.1
Greece	0.0	3.3	Greece	0.4	5.0
New Zealand	9.9	2.8	India	30.1	4.9
Philippines	14.4	2.2	Sri Lanka	12.6	2.9
Croatia	0.0	2.0	Malaysia	16.9	2.8

Note: * Excludes SARs and Taiwan Province.
Source: ABS Census data (2007a).

Overall, the major disadvantages associated with the Footscray CAD include:

- low levels of incomes and socioeconomic status of local population;
- proximity of Highpoint Shopping complex and strong local neighbourhood shopping centres nearby;
- declining employment opportunities locally;
- arts and recreation centre not strong in the CAD, and
- a perception of a lack of safety.

The advantages include:

- a diverse population;
- gentrification of nearby suburbs;
  - significant proportion of professionals and community service workers in the area;
  - an increasingly educated population;
- major transport hub for the Western Region; and
- expertise in offering specialised niche migrant and youth services.

The Six CADs Compared

As shown in Table 3.14, the Box Hill CAD (BHCAD) is similar to the Footscray CAD (FCAD) in some respects. However there are marked differences between the two CADs. These include:

- Total employment in the BHCAD was 12,519 compared to 7525 in FCAD.
- Employment in BHCAD increased between 2001 and 2006, but it fell in FCAD.
- Box Hill Hospital is located within the CAD and employs over 2000 workers.
- Public Administration and Safety (considered a higher order function) is a significant employer in the BHCAD, (2241 workers compared to 678 in the FCAD), mainly due to the location of the office of the Australian Taxation Office and large branches of Medicare and Centrelink.
- BHCAD has a higher proportion of Professional Services (also a higher order function) employment, 7.6 per cent compared with 4.0 per cent in the other CADs.

The major employers within the Footscray CAD are Victoria University, the Commonwealth Government (e.g. Centrelink), a book publisher, a major metals manufacturers and the Department of Transport.

A comparison of the 6 CADs indicates:

- By far the highest employment is in the Box Hill CAD, with Dandenong and Frankston following. Ringwood and Broadmeadows have fewer employees than the Footscray CAD.
- Employment decreased in the Footscray, Broadmeadows and Frankston CADs between 2001 and 2006. It increased in the other CADs during that time.
- The educational sector is a significant employer in Footscray and Box Hill and the presence of TAFE Colleges provides employment opportunities by this industry sector in the other CADs, too.
- Health is a significant employer in Box Hill, Dandenong and Frankston, mainly because of the presence of major hospitals within those CADs.
- The Ringwood CAD is based mainly around the retail sector (with the Eastland shopping centre, which is a major employer and several 'big box' retailers located around the Maroondah Highway), although the industry sector has a very strong presence in Frankston, too.

TABLE 3.14 EMPLOYMENT IN THE MELBOURNE CADS, RANKED BY MAJOR EMPLOYING INDUSTRIES IN THE FOOTSCRAY CAD, 2006

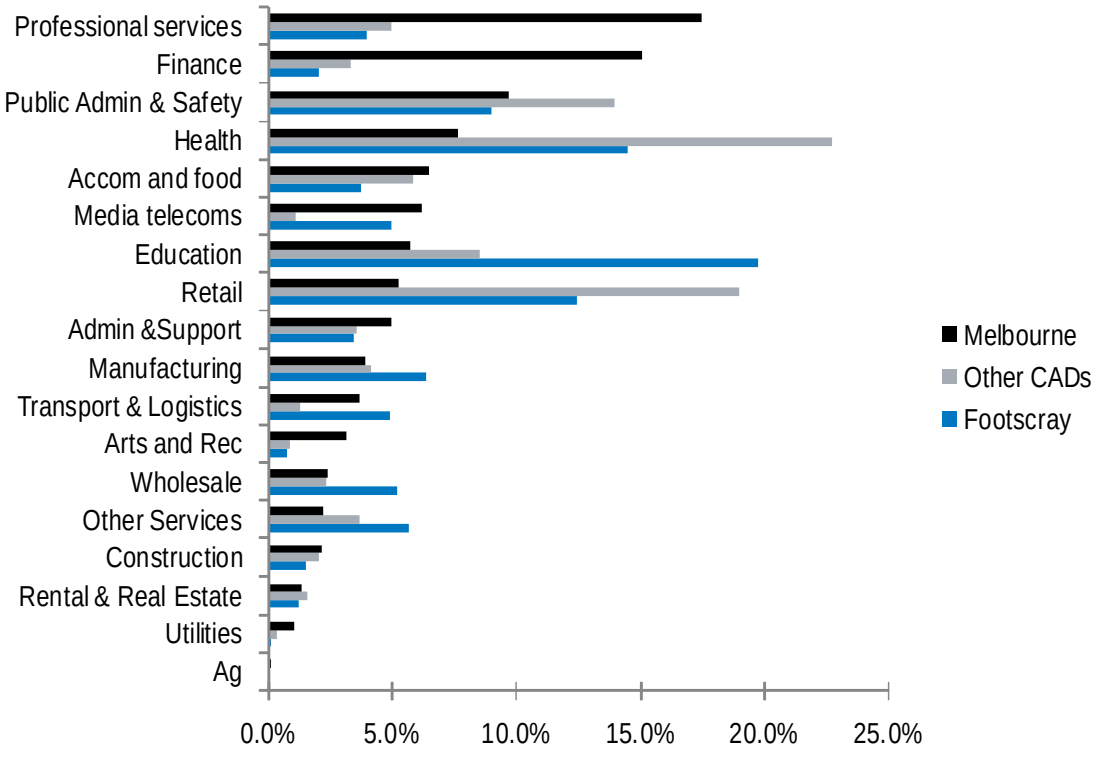
	FOOTSCRAY		BOX HILL		DANDENONG		FRANKSTON		RINGWOOD		BROADMEADOWS	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
Education	1488	19.8	1260	10.1	796	8.2	611	6.4	30	0.6	933	16.8
Health	1093	14.5	3443	27.5	2466	25.3	2684	28.2	248	4.8	823	14.9
Retail	938	12.5	1038	8.3	1470	15.1	2225	23.4	2359	45.5	1003	18.1
Public admin. & safety	678	9.0	2241	17.9	1811	18.6	880	9.2	298	5.8	725	13.1
Manufacturing	480	6.4	256	2.0	526	5.4	239	2.5	127	2.5	614	11.1
Other services	426	5.7	335	2.7	233	2.4	675	7.1	292	5.6	48	0.9
Wholesale	394	5.2	149	1.2	152	1.6	106	1.1	101	2.0	481	8.7
Media telecoms	374	5.0	148	1.2	45	0.5	95	1.0	113	2.2	83	1.5
Transport & logistics	368	4.9	104	0.8	273	2.8	67	0.7	40	0.8	60	1.1
Professional	302	4.0	957	7.6	496	5.1	361	3.8	256	4.9	58	1.1
Accom. & food	284	3.8	916	7.3	399	4.1	520	5.5	485	9.4	158	2.9
Admin & support	262	3.5	505	4.0	411	4.2	252	2.7	257	5.0	88	1.6
Finance	156	2.1	488	3.9	289	3.0	335	3.5	256	4.9	53	1.0
Construction	116	1.5	200	1.6	80	0.8	194	2.0	203	3.9	203	3.7
Rental & real estate	93	1.2	168	1.3	220	2.3	189	2.0	69	1.3	22	0.4
Arts & rec.	60	0.8	225	1.8	61	0.6	53	0.6	18	0.4	21	0.4
Utilities	9	0.1	13	0.1		0.0		0.0		0.0	131	2.4
Agriculture	4	0.1		0.0	13	0.1	3	0.0	3	0.1	7	0.1
Total employment	7525	100	12,519	100	9761	100	9521	100	5182	100	5539	100

Source: Derived from DIIRD (2009a, 2009b).

Employment structures of the existing CADs and the City of Melbourne

When the current employment structure of the nominated CADs is compared with the employment structure of the City of Melbourne, the contrast is quite pronounced. Chart 3.2 shows the proportion employed by industry in Melbourne, Footscray and the other CADs ranked by the proportion employed in Melbourne.

CHART 3.2: CAD EMPLOYMENT STRUCTURE: % TOTAL EMPLOYMENT BY INDUSTRY SECTOR, 2006



Source: ABS Journey to Work data (2006); DIIRD (2009a, 2009b).

It demonstrates the importance of professional services, finance and government administration to the employment structure of an existing CBD. None of the CADs are currently similarly structured, although on average the other CADs are closer to this ideal than Footscray. Employment in health, education and retail which are prominent in the existing CAD employment structures, are not so important to the structure of employment in the City of Melbourne. In developing the CADs this suggests that the emphasis should be on attracting government jobs and an expanded range of professional services.

Developing Footscray as a CAD

The socioeconomic data analysis presented in this chapter emphasises the extent of continuing disadvantage in Footscray, despite the gentrification taking place nearby, and therefore the need for concerted policy action to address the development of Footscray as a CAD. The Government's detailed plans are still under development although significant investment has already been made and committed.

A key factor in Footscray's favour is the rapid gentrification of several adjacent suburbs, as documented in the previous chapter, with the new arrivals better educated and with better paid professional jobs. Currently this group is highly CBD-focussed, with a high proportion working in the CBD. They are also likely to satisfy their current demand for higher order services there. Nonetheless, they provide a potential workforce for firms and government organisations that could be attracted to Footscray by active public policy. In addition, their higher incomes and local demands may change the character of Footscray and increase the complexity of its services. The Indian and Chinese born component of this

gentrification process provides the potential for investment and business development links to be established with the rapidly expanding Indian and Chinese economies.

The redevelopment of a substantial area of the Footscray CAD and the enhancement of its immediate economic base is likely to bring another layer of retail and broader business interest into the Footscray CAD. Victoria University has indicated its intention to focus more of its activities at its Footscray campuses and this will be a positive for the CAD's development and there is the significant investment in the Footscray Rail complex already mentioned. Plans are also being developed through Vic Urban for a mixed, residential and office development designed to attract, at least initially, public sector organisations to Footscray, which would bring additional professional employment to the CAD.

Footscray's development as a CAD suffers from the fragmented location of some of the potential drivers of scale and complexity of employment that might otherwise provide it with a base on which to develop higher order functions. By comparison with many of the other CADs, Footscray has a small, low quality retail sector with most of the higher order, large dollar sales occurring at Highpoint and the nearby big box stores. It has a major hospital nearby but not in the CAD. Its service sector is underdeveloped even by the standards of other CADs. Its close proximity to the CBD means that local residents can access a well developed range of such services relatively easily.

In developing a strategy for the CAD these fragmentation issues need to be addressed. Perhaps in developing the concept of the Footscray CAD, strategies are required to integrate these existing nodes outside the CAD to activities within the CAD. For instance, improvements can be made to local transport specifically focusing on linking these nodes outside the immediate Footscray CAD, to reduce travel time between the CAD and the outlying nodes. In the immediate term, improvements to the bus system may yield results, but in the longer term light rail or other high speed public transport options could be considered.

SUNSHINE PRINCIPAL ACTIVITY CENTRE

Under the *Melbourne 2030* plan, Sunshine is designated as a Principal Activity Centre. The JTW data for the Sunshine SLA, part of the LGA of Brimbank, provides an insight into economic activity at the Sunshine Activity Centre and its immediate catchment area. The number of people working in the Sunshine SLA has increased by over 40 per cent to 26,585 over the 10 years to 2006.

TABLE 3.15 ORIGIN OF WORKERS IN SUNSHINE BY SLA, 2006		
SLA OF RESIDENCE	JOBS	SHARE
Brimbank (C) – Sunshine	6039	22.70%
Brimbank (C) – Keilor	3281	12.30%
Melton SLA	2939	11.10%
Wyndham (C) – North	1813	6.80%
Maribyrnong (C)	1289	4.80%
Hobson's Bay (C) – Altona	1188	4.50%
Moonee Valley (C) – Essendon	657	2.50%
Moonee Valley (C) – West	603	2.30%
Wyndham (C) – West	530	2.00%
Hobson's Bay (C) – Williamstown	522	2.00%
Other Melbourne	6148	23.10%
Regional Victoria	1576	5.90%
Victoria	26,585	100.00%

Source: ABS Journey to Work data (2006).

Sunshine's workers are drawn mostly from neighbouring LGAs of the Western Region. Together with about 23 per cent from the SLA of Sunshine, the proportion from the Western Region totals 71 per cent. The neighbouring SLA of Keilor provides 12 per cent of Sunshine's workforce and the LGA of Melton another 11 per cent. Nearly 6 per cent of Sunshine's workforce travels in from regional Victoria.

Manufacturing accounted for 24 per cent of jobs in Sunshine in 2006, followed closely by retailing and wholesaling at 23 per cent, health and community services 11 per cent, education 8 per cent, transport and storage 8 per cent and construction 5 per cent. Manufacturing employment in Sunshine increased over the ten years to 2006; however, its share of jobs fell from 30 per cent to 24 per cent. A closer look at the subdivisions based in the area indicate a broad range of production across food, metals, plastics, chemicals and printing manufacturing subdivisions.

Transport and storage doubled its share during this period, while wholesale trade, communication services, property and business services, and health and community services also increased their share of jobs in Sunshine.

TABLE 3.16 SHARE OF JOBS IN SUNSHINE BY INDUSTRY, 1996, 2001 AND 2006			
INDUSTRY	1996	2001	2006
Agriculture, Forestry & Fishing Total	0.1%	0.4%	0.2%
Mining	0.4%	0.2%	0.3%
Manufacturing Total	30.0%	26.4%	24.0%
Electricity, Gas & Water Supply	2.5%	1.4%	1.4%
Construction	6.1%	5.1%	5.1%
Wholesale Trade	7.5%	7.5%	8.8%
Retail Trade	14.4%	17.3%	14.2%
Accommodation, Cafes & Restaurants	1.8%	1.8%	1.5%
Transport & Storage Total	3.7%	5.3%	7.9%
Communication Services	0.8%	1.2%	2.3%
Finance & Insurance	1.5%	1.0%	0.9%
Property & Business Services Total	4.4%	5.6%	5.9%
Government Administration & Defence Total	3.6%	2.6%	3.8%
Education	9.3%	8.2%	7.9%
Health & Community Services Total	8.5%	10.6%	10.9%
Cultural & Recreational Services Total	1.0%	1.4%	0.9%
Personal & Other Services Total	2.4%	2.7%	2.8%
Non-classifiable Economic Units	2.0%	0.6%	1.2%
& Not stated	0.1%	0.6%	0.1%
Total	100.0%	100.0%	100.0%

Source: ABS Journey to Work data (2006).

Table 3.17 shows that total jobs in Sunshine grew by 3 per cent per annum to 26,585 between 1996 and 2006. Manufacturing jobs grew by 1 per cent to 6391, transport and storage jobs increased by 12 per cent per annum to 2093 and property and business services and health also experienced strong jobs growth. Gas, electricity and water and finance and insurance experienced job losses between 1996 and 2006.

TABLE 3.17 GROWTH OF JOBS IN SUNSHINE BY INDUSTRY, 1996 AND 2006			
INDUSTRY	1996	2006	CAGR 1996 TO 2006
Agriculture, Forestry & Fishing Total	22	54	9%
Mining	70	71	0%
Manufacturing	5661	6391	1%
Electricity, Gas & Water Supply	468	360	-3%
Construction	1146	1351	2%
Wholesale Trade	1413	2342	5%
Retail Trade	2726	3777	3%
Accommodation, Cafes & Restaurants	344	394	1%
Transport & Storage Total	697	2093	12%
Communication Services	155	612	15%
Finance & Insurance	280	240	-2%
Property & Business Services Total	840	1582	7%
Government Administration & Defence Total	682	1024	4%
Education	1754	2113	2%
Health & Community Services Total	1597	2907	6%
Cultural & Recreational Services Total	192	229	2%
Personal & Other Services Total	461	738	5%
Other	382	307	-2%
Total	**18,890**	**26,585**	**3%**

Note: CAGR = compound annual growth rate.
Source: ABS Journey to Work data (2006).

Table 3.18 shows that of the more highly skilled occupations, such as professionals and managers, only 16 per cent of jobs in Sunshine are professionals and 11 per cent are managers. However, there are a greater number of less skilled jobs such as labourers, machinery operators and drivers, sales and technicians and trades.

TABLE 3.18 JOBS BY OCCUPATION IN SUNSHINE		
OCCUPATION	NUMBER	SHARE
Managers	3028	11.4%
Professionals	4309	16.2%
Technicians & Trades	3688	13.9%
Community & Personal Services	1787	6.7%
Clerical & Administrative	4001	15.0%
Sales	2513	9.5%
Machinery Operators & Drivers	3893	14.6%
Labourers	3045	11.5%
Total	**26,585**	**100.0%**

Source: ABS Journey to Work data (2006).

Nearly 22 per cent of the residents of Sunshine work in manufacturing industries, 16 per cent in retailing and wholesaling, 9 per cent in transport, postal and warehousing, 8 per cent in health care and 6 per cent in construction and accommodation services. Of these, 30,375 workers from Sunshine, 18 per cent are labourers, 15 per cent machinery operators and drivers, 15 per cent technicians and trades, only 11 per cent are professionals and 6 per cent managers.

TABLE 3.19 COUNTRY OF BIRTH OF RESIDENTS OF SUNSHINE

COUNTRY OF BIRTH	NUMBER	SHARE
Australia	35,956	44%
Vietnam	10,574	13%
Malta	3268	4%
Philippines	2429	3%
Italy	1729	2%
Former Yugoslav Republic of Macedonia	1503	2%
India	1371	2%
Greece	1341	2%
United Kingdom(d)	1307	2%
Croatia	1140	1%
New Zealand	1040	1%
Total	81,224	100%

Source: ABS Census data (2007a).

Sunshine is ethnically diverse with only 44 per cent of its residents born in Australia. The largest immigrant group in Sunshine is from Vietnam with 13 per cent of the population, followed by Malta with 4 per cent, Philippines 3 per cent and Italy 2 per cent. Other significant ethnic populations include the Former Yugoslav Republic of Macedonia, India, Greece, UK, Croatia and New Zealand. While 44 per cent of the population were born in Australia only 35 per cent speak English only at home. Eighteen per cent speak Vietnamese, 5 per cent Chinese languages, 5 per cent Maltese, 4 per cent Greek and 3 per cent Italian.

SEIFA Index of Socio Economic Disadvantage

In 2006, Brimbank had the second lowest SEIFA score (930.5) in metropolitan Melbourne. Only Greater Dandenong was lower with 893.9. As mentioned previously, Brimbank LGA comprises the SLAs of Sunshine and Keilor. When the data are examined at the SLA level, it can be seen that Sunshine is more disadvantaged than Keilor. For example, the SLA of Sunshine has a SEIFA score of 905.9, Sunshine–North 870.9 and Sunshine–West 866.6, compared with 930.5 for Brimbank as a whole.

Major Features of the Sunshine Principal Activity Centre

As indicated by the analysis of jobs in the Sunshine SLA, retailing is a major focus of the Sunshine Principal Activity Centre. Sunshine Marketplace Shopping Centre and the Sunshine Plaza Shopping Centre are major regional shopping complexes.

Sunshine Station is located on the edge of the activity district. It is close to the junction of the Ballarat and Bendigo main railway lines and serves trains operating on both these lines. The station is an important passenger interchange for travellers making trips involving both trains and buses.

The Victoria University Sunshine campus is within walking distance of the Sunshine shopping complex.

Sunshine Hospital Redevelopment

The Sunshine Hospital is about 2-3 kilometres from the Sunshine Activity Centre. It operates in the Brimbank, Wyndham and Melton catchments. It is a source of significant growth in more highly skilled jobs. Jobs in the health sector in the Sunshine SLA have been growing at 6 per cent per annum for the decade to 2006. More than $200 million has been committed for Western Health to expand and modernise Sunshine Hospital in a series of three stages. Work has commenced on a $51.6 million state-of-the-art Teaching, Training and Research facility and a $40.6 million radiotherapy facility which is the cornerstone of the Stage Two Redevelopment at Sunshine.

The State Government has provided the bulk of the funding, with contributions from the Commonwealth Government, the University of Melbourne, Victoria University and the Peter MacCallum Cancer Centre. Western Health is also partnering with the University of Melbourne and Victoria University to develop the new Teaching, Training and Research facility at Sunshine. The University of Melbourne will establish a new clinical school to provide undergraduate and postgraduate training of doctors in the west. Victoria University is to establish a centre for education and training of nurses and allied health professionals at its St Albans Campus.

Sunshine Principal Activity Centre: Summary

Sunshine has many of the elements to form a viable regional activity centre based on a strong retail core, two university campuses and the Sunshine Hospital. Mitigating against the development of agglomeration economies is the fragmented location of these key facilities, which are separated by about 5 kilometres. Nonetheless, a railway line travels the spine that potentially links these facilities. In consultation with VU and Sunshine Hospital, the fragmentation issues need to be addressed. VU, through its Nursing Department, is actively engaged with Sunshine Hospital and the University of Melbourne in the integration of the two institutions. Both are major employers in the region. Over time, the development of complementary service industries, and potential biomedical spin-offs from hospital-based research, could be encouraged to further integrate the currently separate facilities.

There are some parallels between the development of the Monash technology cluster, discussed in some detail in Chapter 5 as an option for consideration of the Werribee Employment Precinct, and the initiatives at the Sunshine Hospital and VU. As discussed in Chapter 5, the location of a major teaching hospital near Monash University was a significant factor in the development of that technology cluster which provides lessons for the development of hospital and university links and the potential for spin off research and service companies.

CONCLUSION

This chapter has presented an analysis, largely of socioeconomic data, to investigate the socioeconomic structure of Footscray and Sunshine. It has highlighted some of the challenges to be overcome in enhancing the status of these centres as focal points for professional services and commercial employment. The extent of social disadvantage emphasises the need for policy action to support the development of these centres in conjunction with the private sector. The fragmentation of key activities, in and nearby the centres, also needs to be addressed.

CHAPTER 4. SPATIAL LABOUR MARKETS AND EMPLOYMENT CORRIDORS

INTRODUCTION

This chapter considers the development of spatial labour markets and the emergence of employment corridors in the manufacturing and transport sectors in the outer west. It uses the journey to work data for 2006 to identify employment nodes, and examine the origin and destination of travel between the nodes. However, it firstly draws on the academic literature on production nodes, and commodity and value chains to define the manufacturing and transport corridors in terms of production and buyer-driven commodity chains respectively.

Labour markets are spatial but their boundaries are multidimensional. At one extreme, some senior executives, management consultants and investment bankers lead a footloose global existence, having almost no sense of a particular place for work or residence. At the other extreme, retail workers, teachers and others, particularly female employees, work close to home, often anchored by domestic obligations. In some industries jobs are clustered around particular nodes, reflecting the need for proximity of complementary firms, infrastructure or to benefit from other so-called Marshallian agglomeration economies. Particular labour markets cluster around these nodes.

There are a number of such nodes in or directly contiguous with the Western Region. There are three with concentrations of transport and storage jobs – the Port of Melbourne, Melbourne Airport, both just outside the Region, and a wholesale and distribution centre straddling the junction of the Princes Freeway and the Western Ring Road. This latter area is also the centre of a high concentration of manufacturing jobs, as is an area in Hume to the north and immediately adjacent to the Western Region.

Other things being equal, the workforce density would be expected to decline exponentially, with distance from these nodes reflecting progressively increasing travel time. However, in the urban environment, little is uniform or homogeneous and the configuration of transport networks have a major influence on travel time and therefore on the shape of such regional labour markets. In the Western Region of Melbourne, the historical radial road and rail transport network has been overlaid with a cross connecting freeway system that provides rapid circular access through the Region at a distance of about 15 kilometres from the CBD. This freeway system links the various manufacturing and transport nodes described above. This chapter discusses the extent to which a spatial labour market is being created in the form of an employment corridor associated with access to the employment nodes via the freeway system.

PRODUCTION NODES, COMMODITY AND VALUE CHAINS

These nodes are not only linked regionally, but have a powerful role in the global and national flow of goods through their participation in global production *filieres* or commodity chains (Amin and Thrift 1992; Smith et al. 2002). Commodity chains are networks of labour and production processes that result in a finished product. These inter-organisational networks focus on often global flows between

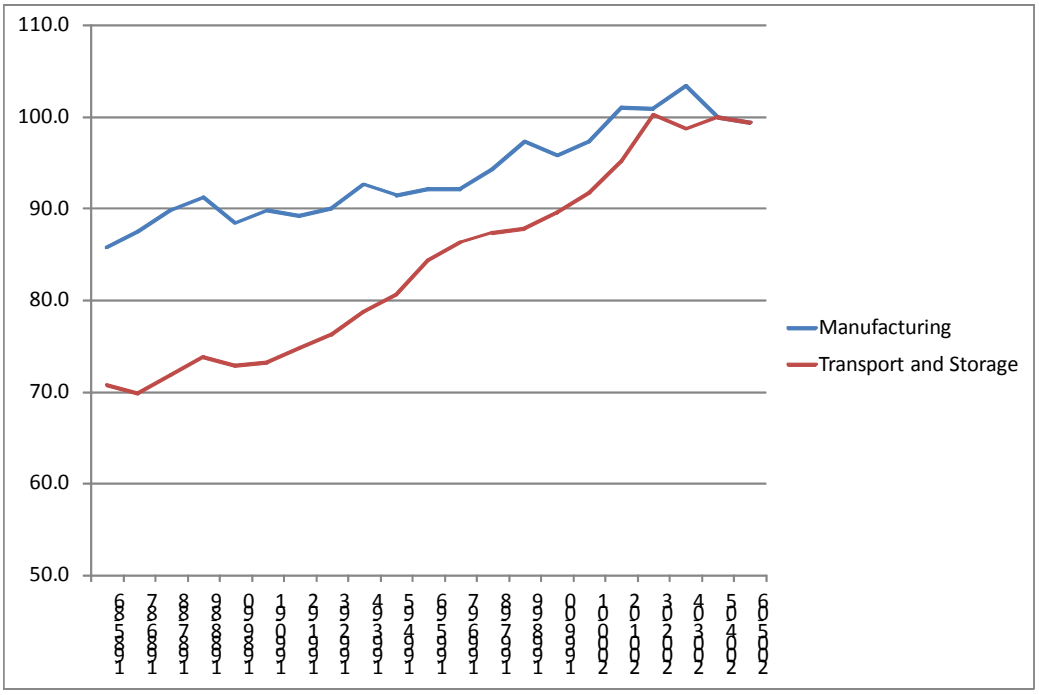
nodes in a particular commodity (Smith et al. 2002). Indeed the recent performance and future prospects of these Western Region nodes is directly related to whether they have an increasing or decreasing role in these global production chains.

The literature divides these so-called commodity chains into production and buyer driven, depending on their governance structures (Gereffi 1994). Production commodity chains tend to be controlled by global enterprises that make investment and production decisions based on such factors as labour and other production costs, local incentives and transport costs. A decision made to include or exclude a particular production plant from a global supply chain is likely to have major implications for the economic prosperity of the particular node. Motor vehicle manufacturers are a good example of such producer driven commodity chains. Decisions by headquarters to source a car or car components from a particular plant can have major implications, not only for that plant, but potentially, for the prospects of a range of suppliers forming part of the node.

Buyer-driven commodity chains are controlled by large retailers, brand-named merchandisers and trading companies. Such chains are part of commodity chains involved in the production and distribution of consumer goods, such as clothing and electronics. Buyer-driven commodity chains reflect the primacy of large retailers in driving down the cost of their purchased products by taking advantage of low cost contract manufacturing and/or substituting imported for domestically-produced goods. With the decline of domestic manufacturing in many Western countries, including Australia, as manufacturing has moved offshore to low wage countries, especially China, the rise of buyer driven commodity chains and the decline of production commodity chains is highly related. Goods which were previously domestically produced are now imported from low cost sources overseas through commodity chains governed by domestic retailers.

The concept of commodity chains has been useful in thinking about the governance of production and distribution networks, but value chains are more important in analysing where value is added at each node in the chain (Smith et al. 2002). The economic prosperity of a region depends on the location of, and investment in, value added activities. While reliable data for regional productivity trends are not available, Chart 4.1 shows the trends in total factor productivity for manufacturing and transport for Australia. This shows the much more rapid labour productivity improvement for transport and storage than manufacturing. Labour productivity for transport and storage has increased at an annual average rate of 2.3 per cent per annum compared with manufacturing which has grown at 1.9 per cent per annum. Reflecting this trend, wages and salaries per employee for transport and storage ($54,900) has recently (2007/08) overtaken that for manufacturing ($53,300).Value added per employee however remains lower in transport and storage than manufacturing, $94,000 compared with $101,000.

CHART 4.1 TRENDS IN LABOUR PRODUCTIVITY: MANUFACTURING AND TRANSPORT AND STORAGE, AUSTRALIA



Source: ABS (2007c).

The manufacturing and transport nodes that have been identified in the Western Region fall into each of these two commodity chain categories. The manufacturing nodes form part of producer commodity chains and the transport nodes are part of buyer commodity chains. Neither node is homogeneous, so different forces have a bearing on different enterprises within each node.

The manufacturing node includes transport (car manufacturing), textiles clothing and footwear (TCF), food and chemicals. TCF jobs which are concentrated in Maribyrnong, for instance, more than halved in the period 2001 to 2006 with the continuing impact of tariff reductions. On the other hand, the more diversified manufacturing activities located in Sunshine, which include food, metals, plastics and chemicals, managed to hold employment levels relatively steady over the period 1996 to 2006. Nonetheless employment levels in the manufacturing node fell from 24,759 in 2001 to 23,468 in 2006. In contrast, employment in the transport and storage node grew by almost 60 per cent from 7516 in 2001 to 11,940 in 2006. To a large degree, the goods flowing through the buyer-driven commodity chains have displaced those previously produced domestically. There has been substitution of imported goods for a range of previously manufactured goods, particularly in the TCF sector (ABS 2007c).

The productivity data, shown in Chart 4.1 and quoted above, indicates that while traditionally, transport jobs had low productivity compared with manufacturing jobs, this has changed with the progressive introduction of more sophisticated logistics technology. Transport companies, such as Linfox and Toll Holdings, have transformed themselves into full service logistics and distribution companies which include warehousing and inventory management as well as transport services. Accordingly, while the value of manufacturing conducted in the Western Region appears to be in long-term decline, not only

are jobs in transport and storage increasing, but the industry at least at the national level is also experiencing above average productivity growth.

EVIDENCE FOR THE DEVELOPMENT OF EMPLOYMENT CORRIDORS

This section which provides a review of preliminary evidence of the spatial distribution of employment in Western Melbourne and its relationship to the Western Ring Road, aims to contribute to the definition of an employment corridor in Western Melbourne.

Melbourne's urban planning framework *Melbourne @ 5 Million* defined an employment corridor as 'A corridor that contains and links a number of large employment precincts' in a way that 'improve(s) accessibility to jobs and services and reduce(s) congestion on the transport network' DPCD (2008).

In this vision, the corridor acts as a 'connector' linking workers' homes to business sites with a view to reducing the time and costs of journey to work. Better transport links will increase the range of jobs available to residents of outer Western suburbs, presumably by extending the distance they are able to travel per unit of travel time. Corridors make labour markets larger and alter the 'shape' of labour markets. For example, the Western Ring Road greatly increases the distance a worker can travel in 30 minutes at peak hour. Importantly, the corridors will improve circumferential public and private transport networks, which will contribute to *Melbourne @ 5 Million's* intended shift from a mono-centric to a poly-centric urban form.

However, *Melbourne @ 5 Million* expands from the idea of connection, to later view corridors as: producing agglomeration and generating employment; and that they will 'provide for substantial increases in employment, housing, education and other opportunities along each corridor and better link them through improved transport connectivity' DPCD (2008). This assumes that the existence of the transport link will precipitate a spurt in public and private investment along its route, and shift in land use accordingly. By bringing more jobs closer to where people live, corridor-based development will improve access to employment, with clear social and environmental benefits. In essence, the idea of transport corridors aims to stimulate a range of employment opportunities along the corridor.

This preliminary analysis is based on the 2006 Census journey to work (JTW) origin-destination pair, which permits the identification of the number of jobs by location and the residential origin of these workers. To focus the analysis, this section examines employment in two sectors, Manufacturing and Transport and Storage. As discussed, these two sectors are illuminating because the first represents the employment structure of the West in its historical role of manufacturing hub, while the second describes the new, globally connected service jobs that have proliferated since the trade-exposed Australian economy shifted to importation of consumer goods.

These industries are clustered in locations that reflect the West's industrial development. Both have nodes to the north and south of the corridor. For the Transport sector, development at the northern end of the corridor centres around the Craigieburn SLA, which includes both the Melbourne Airport and the Hume Highway gateway to regional Victoria, and is host to 8000-9000 jobs. At the southern end of the corridor, a similar number of transport and storage jobs are found in the SLAs of Wyndham–North, Sunshine and Altona. The Port of Melbourne represents a further transport node linked somewhat indirectly to the southern node via the West Gate Freeway and more directly to the northern node via

City Link. Unfortunately for analytical purposes, the Port sits in the 'Melbourne–Remainder' SLA, so transport jobs in the SLA are probably not only at the Port and adjacent Dynon Road Rail Terminal, but also scattered about the inner city. Nevertheless, the large majority would be Port related. The total number of transport and storage jobs in this SLA in 2006 was 5413.

For manufacturing, the nodes are more dispersed. The northern cluster spans Craigieburn and Broadmeadows to provide18,200 jobs, while the southern cluster adds Maribyrnong to three transport SLAs to provide almost 24,000 jobs.

Transport and Storage

For transport and storage, the southern node had more than one third of its jobs filled by residents (3199) and 25.6 per cent (2336) from other parts of the Western Region (see Table 4.1). However, the northern node, largely the Melbourne Airport, had a residential workforce of only 612 (7.6 per cent). Its links with the Western Region are extremely important, with about 28 per cent of its jobs (2240) being filled by Western Region residents. The Port's links with the West are also important with 37 per cent of jobs (2005) filled by workers living in the Western Region. Most significantly, of these, 1351 came from Laverton, Keilor, Sunshine, Altona (four top SLAs) and Melton. Each of these SLAs has ready access to the Western Ring Road/Princes Freeway.

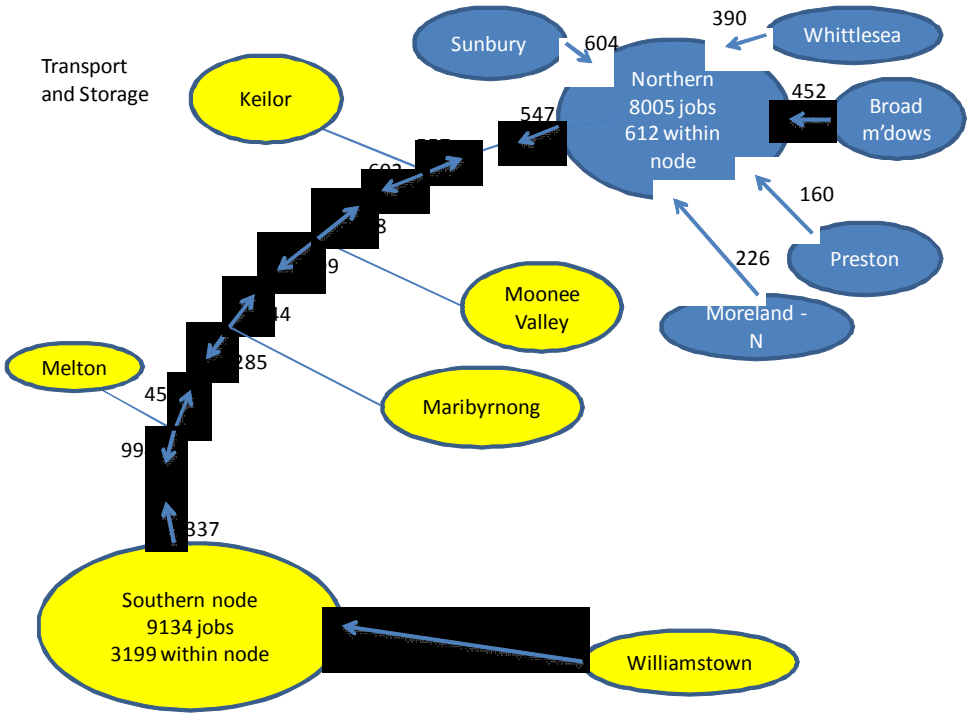
TABLE 4.1 COMPOSITION OF TRANSPORT NODES, 2006

LGA /SLAS	SOUTHERN NODE SUNSHINE–ALTONA–WYNDHAM NORTH	NORTHERN NODE CRAIGIEBURN	PORT MELBOURNE–REMAINDER
Jobs in node	9134	8005	5413
Workers from:			
Within node	3199 (35.0%)	612 (7.6%)	122 (2.3%)
Other WMR	2336 (25.6%)	2240 (28.0%)	2005 (37.0%)
Other places	3599 (39.4%)	5153 (64.4%)	3286 (60.7%)

Source: ABS Journey to Work data (2006).

As indicated in Chart 4.2, those working in the northern node from the Western Region come from nearby Moonee Valley (888), Keilor (557) and Melton (458). A small number (337) however originate in the Southern node. The northern node also relies on the surrounding areas of Sunbury (604), Whittlesea (390), Broadmeadows (452), Preston (160) and Moreland North (226) to provide 1832 (23 per cent) of its employees. For the southern node, residents from each of Moonee Valley (259), Maribyrnong (285), Melton (994) and Keilor (602) fill significant numbers of jobs with the Western Ring Road providing particularly good access.

CHART 4.2 TRANSPORT 'EMPLOYMENT CORRIDOR'



Manufacturing

As shown in Table 4.2, the southern node draws its workforce primarily from within its own boundaries (42 per cent) and other parts of the Western region (29 per cent). In contrast, the northern node draws only 23.9 per cent (4354) of its workers from within the node and a further 22 per cent (4080) of its workers from the Western Region, with Keilor providing 1036 and the southern node 1290.

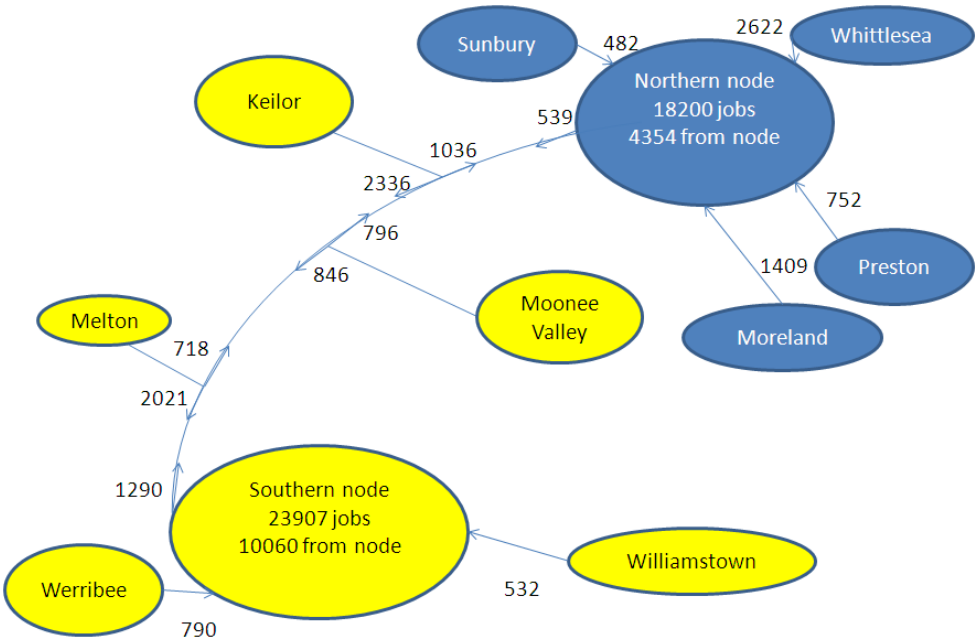
TABLE 4.2 COMPOSITION OF MANUFACTURING NODES, 2006

LGA /SLAS	SOUTHERN NODE SUNSHINE, ALTONA, WYNDHAM NORTH S AND MARIBYRNONG (C)	NORTHERN NODE CRAIGIEBURN AND BROADMEADOWS
Jobs in node	23,907	18,200
Workers from:		
Within node	10,060 (42.1%)	4354 (23.9%)
Other WMR	7016 (29.3%)	4080 (22.4%)
Other places	6831 (28.6%)	9766 (53.7%)

Source: ABS Journey to Work data (2006).

As shown in Chart 4.3, the northern node also draws workers from the surrounding areas, particularly Whittlesea (2622), but also Moreland (1409), Preston (752) and Sunbury (482). The southern node attracts workers from nearby areas in the Western Region, Melton with 2021 and Keilor 2336, providing the largest number of workers. Very few workers come from the Hume LGA (800), mostly from Craigieburn/Broadmeadows.

CHART 4.3 MANUFACTURING 'EMPLOYMENT CORRIDOR'



The Western Ring Road: An Access Link or Employment Corridor?

The evidence provided by the JTW data suggests that there are two very substantial nodes providing manufacturing and transport employment, and there is a significant amount of traffic between the two nodes. Around a quarter of the jobs in the two nodes are supplied by workers from areas for which the Ring Road provides particularly good access. There is no doubt that the spatial labour markets of the two nodes have been extended and travel times cut by the construction of the Ring Road. However, its development as an employment corridor requires more jobs to be created in the areas between the nodes to complement those already established at the nodes.

It is beyond the scope of this report to establish existing links between the nodes and complementary businesses outside the node, however the number of jobs in the adjoining SLAs in transport and manufacturing provides an indicator of the 'density' of jobs in the corridor outside the nodes. These are shown in Table 4.3 below.

TABLE 4.3 NUMBER OF JOBS IN 3 WESTERN MELBOURNE LGAS, 2006		
	MANUFACTURING	TRANSPORT AND STORAGE
Moonee Valley	2112	1239
Melton	1167	1783
Keilor	3281	1459

Source: ABS Journey to Work data (2006).

With the possible exception of Keilor, which is in fact a candidate for inclusion in the northern node, the number of jobs in these sectors in the areas between the two nodes is modest compared with the concentration of jobs in the nodes.

Developing an Employment Corridor

Developing an employment corridor involves a variety of factors. One is the economic viability of the nodes. As has been discussed, these have formed partly for historical reasons, in the case particularly of the manufacturing nodes and to take advantage of the transport infrastructure, principally the Port and Melbourne Airport.

Manufacturing developed initially in the West to take advantage of low cost land, proximity to the Port and a skilled labour force. These historical reasons suggest that there is a level of lock in and its future development is path dependant. It is likely to be capable of evolutionary adaptation but not radical change. It has adapted to the withdrawal of industry protection policies. Surviving textile firms have changed their product mix and the motor industry is adopting more fuel efficient technologies with incentives from the Federal government. Given the national decline in manufacturing, employment levels in nodes, while declining, have proved reasonably resilient. However, it is unlikely that manufacturing will be the driver of the future development of an employment corridor unless the economics of world trade changes. This may occur if the cost of moving goods were to increase substantially in a carbon constrained environment, which could be more advantageous to local production.

The transport and storage nodes have experienced rapid growth, taking advantage of the forces that have adversely affected local manufacturing. With the expansion in traded goods, transport, logistics and distribution firms have benefited from cheap land available close to the key transport infrastructure of the West. The nodes have taken on a metropolitan, wider regional and national role as goods entering and departing the country, through both the airport and seaport, are sourced and distributed nationally. While the volume of trade declined during the GFC, the drivers of global trade in goods are gradually re-emerging. This should mean that transport jobs in the nodes will continue to increase.

The nature of jobs in the sector is, however, undergoing significant change as logistics services come to dominate simple road and rail transport solutions. Logistics management is:

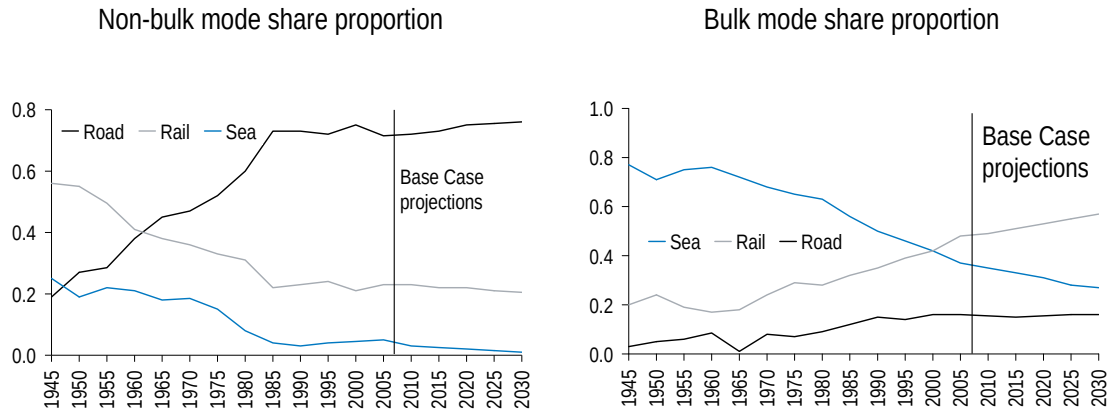
> ... part of supply chain management which plans, implements and controls the efficient, effective forward and reverse flow and storage of goods, services and related information between the point of origin and the point

of consumption in order to meet customers' requirements. (Council of Supply Chain Management Professionals)

Thus, those providing these services are highly skilled, applying ICT to management of supply chains.

Currently road carries the highest proportion of non-bulk freight (general and containerised), while rail tends to specialise in bulk cargos, such as agricultural commodities, coal and iron ore. Chart 4.4 below shows the historical shift in mode share for the two sectors. Most of the non-bulk market is interstate freight. Road has been steadily gaining market share since the 1970s. Between 1971 and 1985, road's share increased from 25.5 per cent to over 54 per cent, with non-bulk freight carried by road growing at 8.9 per cent per annum compared with non-bulk rail traffic growing at only 2.2 per cent per annum. These trends are more pronounced on shorter routes, e.g. Sydney to Melbourne, than Melbourne to Perth. By 2003, the respective market shares for road and rail were 65.9 per cent and 24.8 per cent, an almost complete reversal of their 1971 shares.

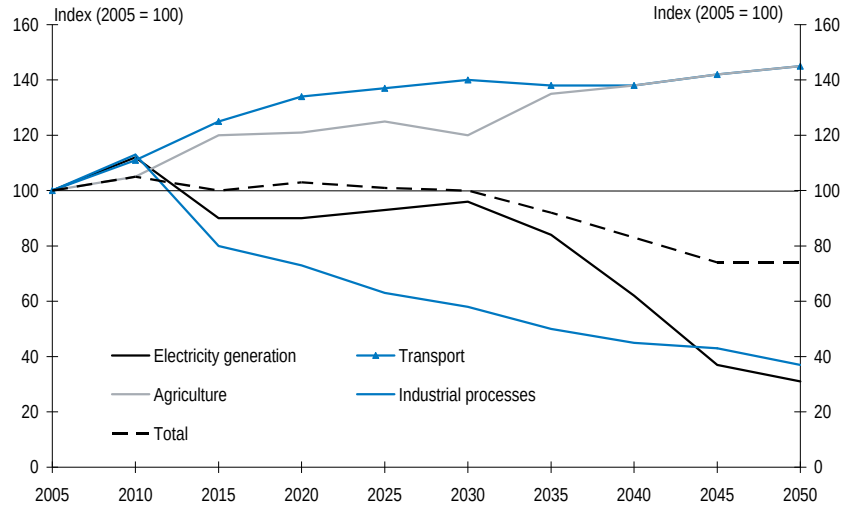
CHART 4.4 MODAL SHARE, AUSTRALIAN DOMESTIC FREIGHT



Note: Non-bulk domestic freight has 'Air' not shown.
Source: CSES adapted from Cosgrove (2008).

Road transport services have been shifting towards smaller, more frequent and time sensitive deliveries, which incur higher costs but achieve greater service reliability. The Ring Road and City Link are important in providing rapid access for trucks between the Port, Airport and the new intra modal facility at Somerton. These projections, derived from the Bureau of Transport Economics, would suggest that road's share will continue to increase somewhat at the expense of rail and sea. These projections assume that any carbon pollution reduction scheme (CPRS) will have little impact on road transport. The current CPRS is projected to achieve substantial reductions in emissions for electricity generation and industrial processed as shown in Chart 4.5, while transport emissions should increase until about 2030, when they are projected to plateau.

CHART 4.5 INDUSTRIAL SECTOR EMISSIONS FOR AUSTRALIA, CPRS-5 SCENARIO, 2005-2050



Source: Adapted from Treasury (2008).

However, there is every reason to believe that transport's exemption is not likely to be sustained into the future if a serious reduction in Australia's emissions is to be achieved; because of the otherwise narrow base and therefore unrealistically large cuts on which the reductions are focussed, which suggest that a broadening of the scheme will be necessary. This may have an impact on the growth of employment in the nodes, particularly if there is a large shift, as seems necessary, back to rail.

Projections of economic activity at particular locations are always subject to considerable uncertainty, but this is especially true now because of the uncertainty of the impact of any carbon reduction scheme to be introduced.

IMPLICATIONS FOR THE UNIVERSITY

The University has identified the growth of transport and logistics as one its key areas for training and research expansion. It has established the Institute for Logistics and Supply Chain Management to provide a focal point for increased training for local industry and logistics research. The Institute is also an active contributor to policy advice to government. Accordingly, the University has a strong interest in growth and development of a transport and logistics corridor in the Outer West.

CHAPTER 5. WERRIBEE EMPLOYMENT PRECINCT

This chapter gives consideration to one of the proposals for the further development of the Werribee Employment Precinct, which incorporates a major role for the University in developing a business precinct with a technology focus. It should be made clear that this is but one option for the development of the Precinct, which the Government has styled as an employment precinct, rather than a more narrowly defined technology cluster. Nonetheless if viable, there is no reason why a university based technology cluster should not form part of the solution for its development. It would help fill the existing deficit in professional and scientific services jobs. In any case it is an option in which the University has a keen interest. The lessons contained in the Monash Technology Cluster case study, discussed in this chapter, also have potential application to other parts of the Region. The possibility was raised in Chapter 3 that the development at the Sunshine Hospital had parallels with the location of the Monash Medical Centre as part of the development of the Monash Technology Cluster. The Monash case study therefore has potential application to the development of the activity district at Sunshine.

There is a large body of international literature on university industry linkages that describes the role of universities as catalysts for regional development. Some of the available evidence is presented in the section below.

Lessons to be drawn from the technology cluster, which has grown up around Monash University, were considered of potential relevance. While separated by five decades, the development of the Monash technology cluster and what might be achieved at Werribee have some parallels. The decision to establish Monash was made at a point of time when Melbourne's growth was similarly rapid and there was strong need to establish new education facilities to serve the rapidly growing south-east metropolitan sector. While Werribee is currently on the outer edge of the metropolitan area, a high proportion of Melbourne's growth, to a city of five, perhaps seven million, is projected to be located in the West. The development of the technology cluster at Monash is treated as a case study.

UNIVERSITY INDUSTRY LINKAGES

The proposal to substantially boost activities at the Werribee Employment Precinct by establishing a technology cluster anchored by a significantly enlarged university campus brings into focus the role of university-industry linkages in promoting economic growth.

A large amount of literature on the topic has evolved (see for instance Mowery and Rosenberg 1998; Shane 2004; Cohen et al. 2002; Feldman and Desrochers 2003; Yusuf and Nabeshima 2007). This literature has tracked the changing role of universities, from an exclusively training function to one with a greater focus on research, through to the development of the entrepreneurial university. This transformation has fundamentally altered the way in which a university interacts with industry.

The first research university is considered to be the Humboldt University of Berlin established in 1810 by the Prussian Education Minister, Wilhelm von Humboldt, which became the model for research intensive universities around the world. This involved universities not only engaging in basic research to

advance knowledge, but also contributing to the development of technology for civilian and military uses. Prior to that, the old Oxford and Cambridge model had focussed largely on training clerics, lawyers and other professionals (Yusuf 2007). While the research intensive university has conducted potentially commercially valuable research, it did not necessarily pursue links with industry. John Hopkins University (Baltimore), whose establishment followed the Humboldt model and which is now by many measures, one of the leading research universities in the US, institutionalised, through its history, the norms of open science. It was reluctant to allow its research agenda to be influenced by commercial decisions and opposed proprietary restrictions on the dissemination of research results (Feldman and Desrochers 2003).

More recently, the so-called 'entrepreneurial university' has emerged with the objective of pursuing economic as well as intellectual objectives. It seeks to actively engage with industry through technology transfer, the control of intellectual property and licensing arrangements. It aims to exploit the central role of knowledge in the development of the knowledge economy and the role of the university in knowledge generation that is potentially commercially valuable. This new role provided, otherwise resource-constrained universities, with another source of revenue (Garnsey, cited in Yusuf and Nabeshima 2007).

This willingness on the part of universities to act as instruments of economic development was welcomed by policy makers as providing a key contribution to their regional economic development strategies. Spin-off companies from universities could be important for the development of nearby technology clusters established in regions seeking to transform themselves into high-tech growth centres. This view was given material support by the success of new industries developed on the back of emerging technologies, such as biotechnology in Boston and San Francisco, and IT in Silicon Valley. These booming industries owed their start, to varying degrees, to R&D undertaken in a number of universities and research institutes.

There is a large amount of literature which seeks in various ways to measure the impact of universities on local economic growth. Researchers have used a range of techniques from case studies of individual universities, to surveys and production function estimations. Drucker and Goldstein (2007), in reviewing this literature, conclude that knowledge generation by universities raises local average earnings, and that this is especially the case where the region is small compared with the university. Cross sectional analysis by Goldstein and Renault (2004) of the top 50 universities in the US concludes that the research activities of universities is positively correlated with regional earnings growth, and that this matters much more than the teaching and training function. However, the impact of research universities matters less than a range of other factors, such as the region's general macroeconomic conditions, agglomeration economies and aspects of industry structure. These other factors mean that there is, in fact, a wide variation in the impact of research universities, depending on these factors and those pertaining to the characteristics of a particular university.

Accordingly, the role of universities in start-up industries varies considerably with university policies, local business conditions and the characteristics of the technology being commercialised. Some universities have not participated in the technology transfer process and accordingly their local region has derived little benefit from their research. The case of John Hopkins University, quoted above, provides such an example. Its School of Medicine has been the single largest recipient of research

grants from the US National Institutes of Health and historically has received more in US government R&D support than any other academic institution. Its staff have been awarded 26 Nobel prizes (Feldman and Desrochers 2003, pp. 6-7). Yet, as at 1997, it had the lowest invention rate (invention disclosures per $m), the third lowest number of spin-offs, and the third lowest value of licensing revenues of the top 10 US universities ranked by research expenditure (Feldman and Desrochers 2003). Its modest visible technology transfer outputs are considered to be a direct result of its institutional history and philosophy which valued 'open source' basic research above commercially valuable R&D.

More recent data on the level of engagement between university research and industry, according to a range of invention and licensing indicators for some of the larger US research universities, as measured by research expenditure, demonstrates the considerable variation in technology transfer outcomes.

Table 5.1 below shows the continuing low level of John Hopkins technology transfer program relative to four other leading US universities. The size of the University of California System dwarfs the other three. However, of particular note, is the transfer program of the Massachusetts Institute of Technology (MIT), which has a research budget of similar size to John Hopkins, but according to these indicators a transfer program 2-3 times that of John Hopkins. In 2007, MIT had 24 start-up companies, 840 active licences, 487 invention disclosures and its invention ratio was the highest of the four universities. In contrast John Hopkins was low on each of these measures. It had only 4 start-ups, 485 active licences and 282 invention disclosures. Indeed Harvard, which has a research budget about half the size of John Hopkins, had a comparable transfer program. It is not surprising, therefore, that Feldman and Desrochers (2003) conclude that 'Hopkins has not generated highly visible economic benefit for the local area' (p. 20).

TABLE 5.1 US UNIVERSITY TECHNOLOGY TRANSFER ACTIVITIES: SELECTED RESEARCH UNIVERSITIES, 2007

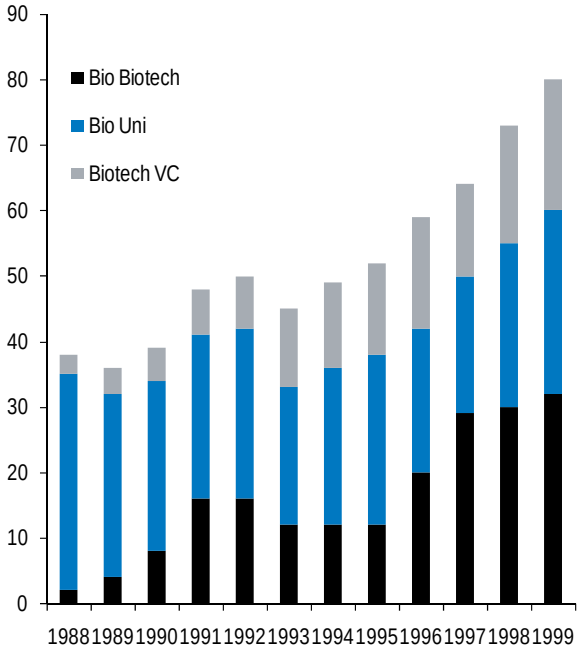
NAME OF INSTITUTION	UNIVERSITY OF CALIFORNIA SYSTEM	MIT	JOHNS HOPKINS UNIVERSITY	HARVARD UNIVERSITY
2007 Research Expenditure ($m)	$4013	$1217	$1101	$630
Cumulative Active Licenses	1819	840	485	520
2007 Start-ups	38	24	4	6
2007 Invention Disclosures	1411	487	282	217
2007US Patents Issued	331	149	43	42
2004-2007 Cumulative Adj. Gross Income ($m)	$360	$129	$36	$22
$ per Licence	$198,093	$153,794	$73,214	$41,299
Invention Ratio	0.35	0.4	0.26	0.34

Source: AUTM (2007).

In contrast, the Boston-based research universities, MIT and Harvard, have had a substantial impact on their local region, and are considered critical to the development of the biotech and IT industries in their region (Owen-Smith and Powell 2006). One factor illustrating this is the relative importance of alliances between biotechnology companies and public research institutes (PROs) in the Boston region. Chart 5.1 sourced from Owen-Smith and Powell (2006), shows alliances formed by Boston-based dedicated biotechnology firms with venture capital companies (VC), public research organisations (Uni) and each other (Bio–Biotech). The PROs include MIT, Harvard University and Mass General Hospital. It shows

the preponderance of alliances between biotechs and universities particularly in the formative years of the network. While the relative share of alliances with 'Unis' declined as the network increased in size and complexity, alliances with 'Unis' remained a significant feature of the network over the period reviewed.

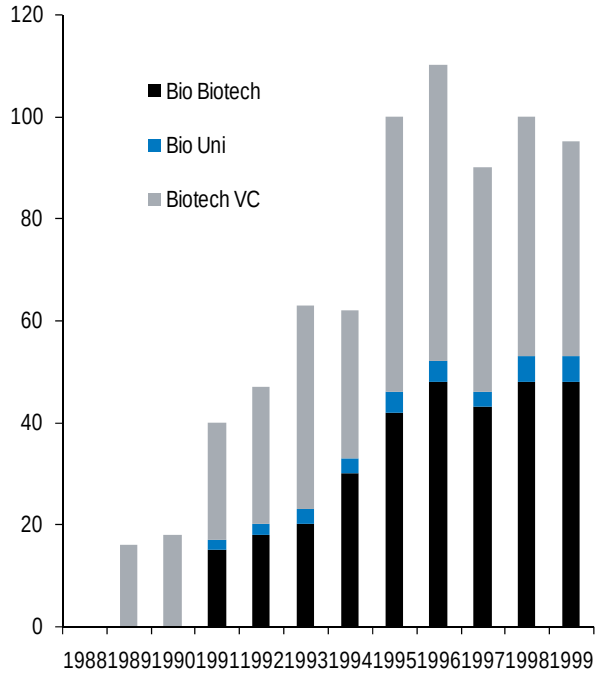
CHART 5.1 BIOTECH ALLIANCES: BOSTON-BASED BIOTECHNOLOGY FIRMS



Source: Owen-Smith and Powell (2006, p. 66).

In contrast, the development of the biotech network in San Francisco followed a different trajectory. Although the early breakthrough research on recombinant DNA technology was conducted in the University of California San Francisco laboratories, the commercialisation path was quite different. One of the inventors of the recombinant DNA technique established a biotechnology company, Genentech, with the support of a venture capitalist and worked at the UC labs on contract from Genentech (McKelvey 1996). The much richer VC environment in the San Francisco region resulted in VCs playing a much greater role in the development of the biotech network (see Chart 5.2). The role of the universities, such as the University of California and Stanford University, was not at all evident in the establishment of the regional biotechnology network, although they became progressively involved as the network developed, but not to the degree in the Boston network.

CHART 5.2 BIOTECH ALLIANCES: SAN FRANCISCO-BASED BIOTECHNOLOGY FIRMS



Source: Owen-Smith and Powell (2006, p. 66).

Developments in biotechnology have been important for university–industry linkages and a large proportion of licensing revenue received by the University of California relates to a handful of biotechnology patents (Mowery 2007). The commercialisation process of biotechnology lends itself to a continuing relationship between start-up and university, which tends to encourage the development of local clusters. Zucker and Derby (1998a, 1998b) and others have documented the role of the 'star scientist' as the instigator/founder of a biotech start-up to exploit a discovery made in a university laboratory. The links between the academic founder and the university remain while the company is established, meaning that geographic proximity is an important factor.

Overall, the conclusion from this survey of the literature suggests that research activities of universities are positively correlated with regional earnings growth and this matters much more than the teaching and training function. However, the impact of research universities is less than a range of other factors, such as the region's general macroeconomic conditions, agglomeration economies and aspects of industry structure. These other factors mean that there is in fact a wide variation in the impact of research universities (Power and Malmberg 2008).

Very different technology transfer outcomes are possible at universities of similar size, but they have different objectives, relations with their economic hinterland and industry specialisation. The implications for the role of the university as a catalyst for development at the Werribee Employment precinct is that the policies of the university, its research specialisation and the nature of its technology transfer programs are of particular importance.

MONASH UNIVERSITY CASE STUDY

Turning to the Australian experience, Monash University provides an example of a Melbourne-based university established on a greenfields site (see Chart 5.3) about 20 kilometres from the CBD at the then outer edge of the metropolitan area.

CHART 5.3 MONASH UNIVERSITY SITE AT ESTABLISHMENT IN 1958*

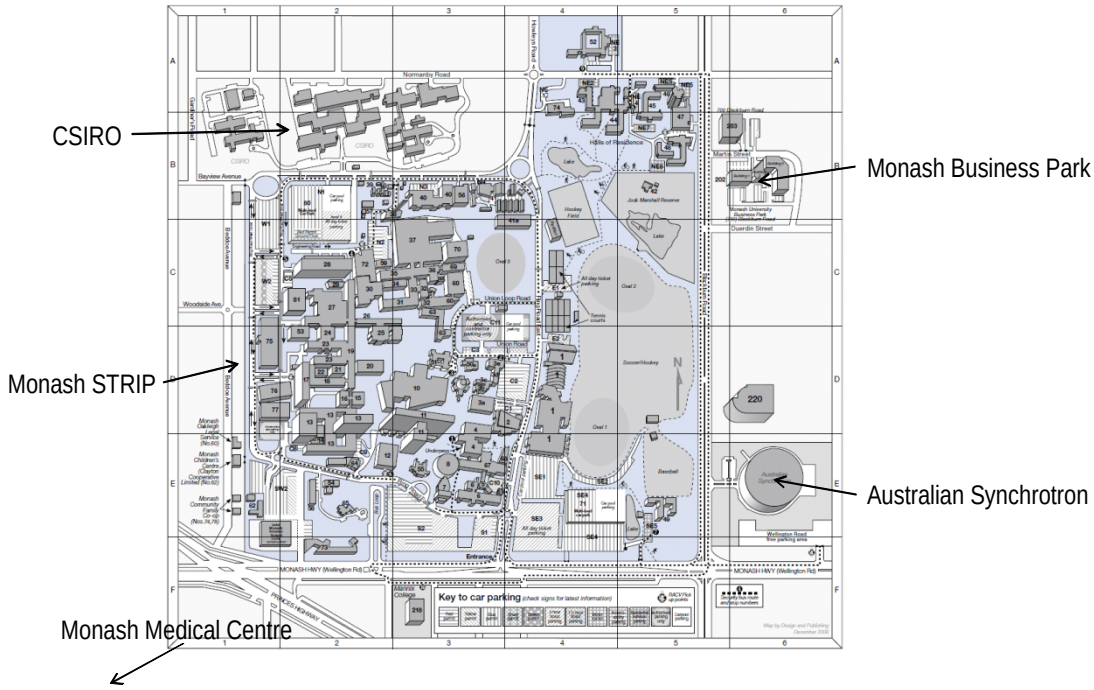
Note: *View looking West from the corner of Blackburn and Wellington Roads.
Source: Photograph courtesy of Monash University Archives, Image number: 1857.

It was established in 1958 and took in its first students in 1961. It grew rapidly to have more than 7000 students by 1967 at its Clayton campus (Monash University 2009). It has since become the focus of a well developed technology cluster. Scientists at the university have achieved significant breakthroughs in developing new medical procedures such as the IVF program. A large CSIRO campus is co-located at the Clayton campus and the Monash Medical Centre opened a few blocks away in 1987. More recently, the siting of the $250 million Australian Synchrotron at Monash University has served to draw additional international academics and businesses into the Monash network. As can be seen from Chart 5.4, Monash has added to its technology transfer capabilities with a business park and more recently an incubator (Monash STRIP) designed to take Monash inventions from lab to start up company.

As discussed above, a key measure of success for university technology transfer activities is the number of start-up companies (see Table 5.1 above). These are important vehicles for transferring university generated knowledge into the commercial domain (Shane 2004). Of the dozen companies listed by Monash University as start ups,[4] almost half began life in close proximity to the University, and a further three early stage companies are located on campus in the Monash STRIP. This illustrates the importance of proximity, at least for a high proportion of start-up companies in the in the knowledge transfer process.

[4] http://www.monash.edu.au/industryengagement/achievements.html

CHART 5.4 MONASH UNIVERSITY AS THE CORE OF A TECHNOLOGY CLUSTER



Source: Monash University.

As a result of its research output and technology transfer activities (as shown in Table 5.2), Monash has become one of the leading universities in Australia in terms of earning licensing fees. A large proportion of these apparently come from its inventions in IVF. This is similar to US universities where biotechnology royalties provide the majority of the total.

TABLE 5.2 AUSTRALIAN UNIVERSITIES' ROYALTIES, 2003-2007	
UNIVERSITY	5 YEARS $M
Victoria	
Deakin University	28.3
La Trobe University	0.0
Monash University	30.6
RMIT University	0.0
Swinburne University of Technology	4.2
The University of Melbourne	20.7
University of Ballarat	0.0
Victoria University	0.4
Selected other	
The University of Sydney	12.2
The University of Queensland	29.2
Curtin University of Technology	43.8

Source: Source: DEEWR and DEST (various years).

The success of Monash University in developing a technology cluster has had a profound effect on the growth of the workforce not only at the university, but also in its immediate neighbourhood. The next

section attempts to show the impact of the development of a technology cluster on the workforce at and around Monash University.

Employment in the Monash Technology Cluster

The Monash technology cluster is largely located in one of the SLAs, in the City of Monash. The City of Monash contains the south eastern suburbs of Mount Waverley, Glen Waverley, and parts of Clayton and Burwood East. Monash University's main Clayton campus and the Monash Medical Centre are located in the LGA. The City has large professional services, retailing (The Glen Shopping Centre) and manufacturing employment. Employment in the City grew at 1.3 per cent per annum over the decade to 2006, while residential population grew by only 0.5 per cent per annum.

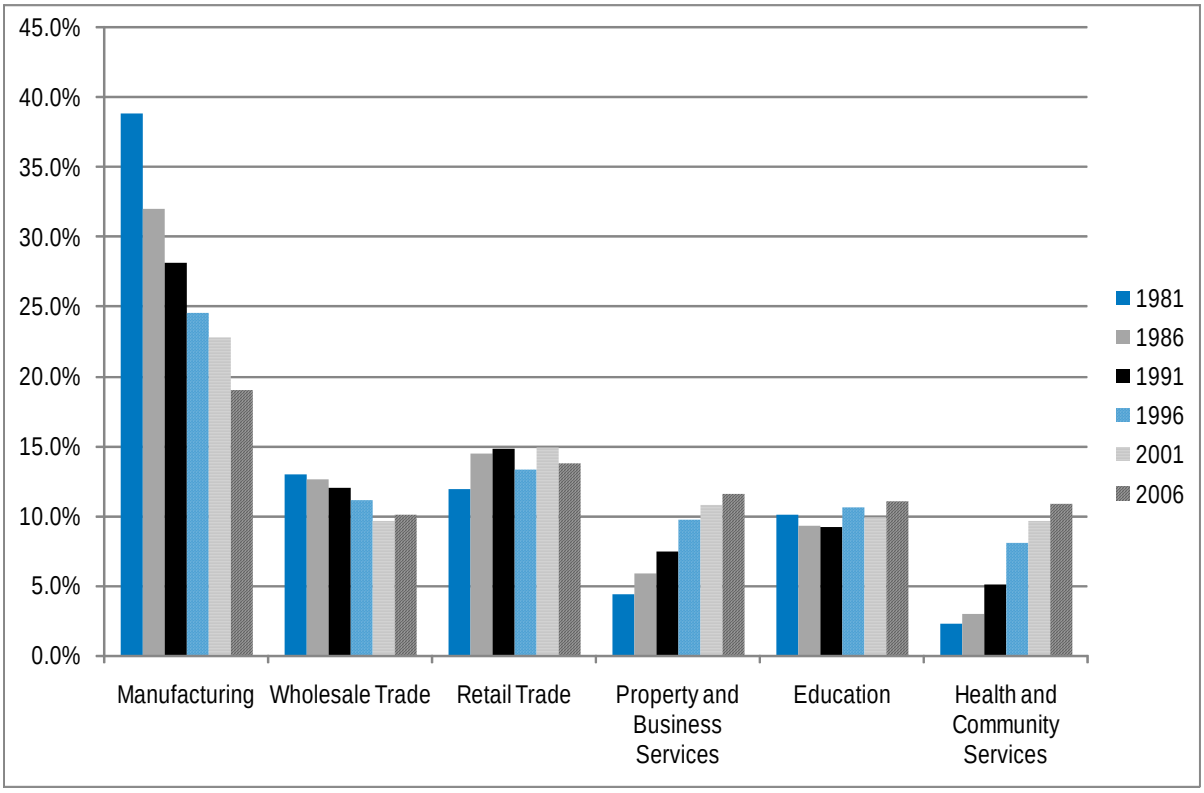
Journey to work data are available for the LGA on a reasonably comparable basis for the period 1981 to 2006, but for the SLA, the data are only available from 1996 to 2006. Table 5.3 is sourced from unpublished ABS JTW data, based on the 1993 ANZIC classification. Although some changes have occurred, they are relatively minor compared with the massive structural change that has taken place in Monash City over the period 1981 to 2006. Manufacturing employment has declined from 24,647 jobs, almost 40 per cent of total employment in 1981, to 16,821 jobs or 19 per cent in 2006. On the other hand employment in property and business services has grown from 2786 or 4.4 per cent in 1981, to 10,287 or 11.6 per cent in 2006. Employment in health has grown even more rapidly from 1436 or 2.3 per cent in 1981 to 9618 10.9 per cent in 2006. While manufacturing declined at an average annual rate of 1.5 per cent per annum, employment in health grew at almost 8 per cent per annum. The extent of the structural change is shown for these sectors in Chart 5.5.

TABLE 5.3 JOBS IN MONASH LGA BY INDUSTRY, 1981 TO 2006

	1981	1986	1991	1996	2001	2006	CAGR 1981 TO 2006
Agriculture, Forestry & Fishing	127	222	61	94	134	75	-2.1%
Mining	47	82	60	28	21	27	-2.2%
Manufacturing	24,647	21,953	18,434	19,042	19,014	16,821	-1.5%
Electricity, Gas & Water Supply	148	463	306	486	709	865	7.3%
Construction	3615	3886	3798	3210	3410	4946	1.3%
Wholesale Trade	8258	8691	7835	8631	8094	8949	0.3%
Retail Trade	7545	9927	9665	10,312	12,468	12,215	1.9%
Accommodation, Cafes & Restaurants	977	1206	1634	1803	2348	2323	3.5%
Transport & Storage	1114	1424	1606	2433	2141	2435	3.2%
Communication Services	1299	1821	1918	2578	2651	2170	2.1%
Finance & Insurance	1332	1964	2029	2086	2070	2271	2.2%
Property & Business Services	2786	4026	4894	7531	8999	10,278	5.4%
Government Admin. & Defence	748	995	1114	724	788	1180	1.8%
Education	6417	6395	6025	8224	8297	9777	1.7%
Health & Community Services	1436	2063	3300	6275	8070	9618	7.9%
Cultural & Recreational Services	390	562	631	716	1100	1127	4.3%
Personal & Other Services	1270	1373	1319	2062	2359	2236	2.3%
Other	1308	1524	739	1146	713	997	-1.1%
Total	63,464	68,577	65,368	77,381	83,386	88,310	1.3%

Note: CAGR = compound annual growth rate.
Source: ABS Journey to Work data (2006); ABS unpublished Census data.

CHART 5.5 CHANGE IN THE COMPOSITION OF JOBS IN MONASH LGA: SELECTED INDUSTRY SECTORS, 1981 TO 2006



Source: ABS unpublished Journey to Work data.

Retail trade is the second largest employing industry with 12,215 employees in 2006, and accounts for 14 per cent of all jobs. The Glen Shopping Centre is located in Monash. Business services, which include scientific research, technical and computer services, grew at 5.4 per cent per annum over the 25 year period. The share of jobs in education, which grew at a more modest growth of 1.7 per cent per annum, increased only marginally between 1981 and 2006, largely reflecting employment levels at Monash University's main Clayton campus.

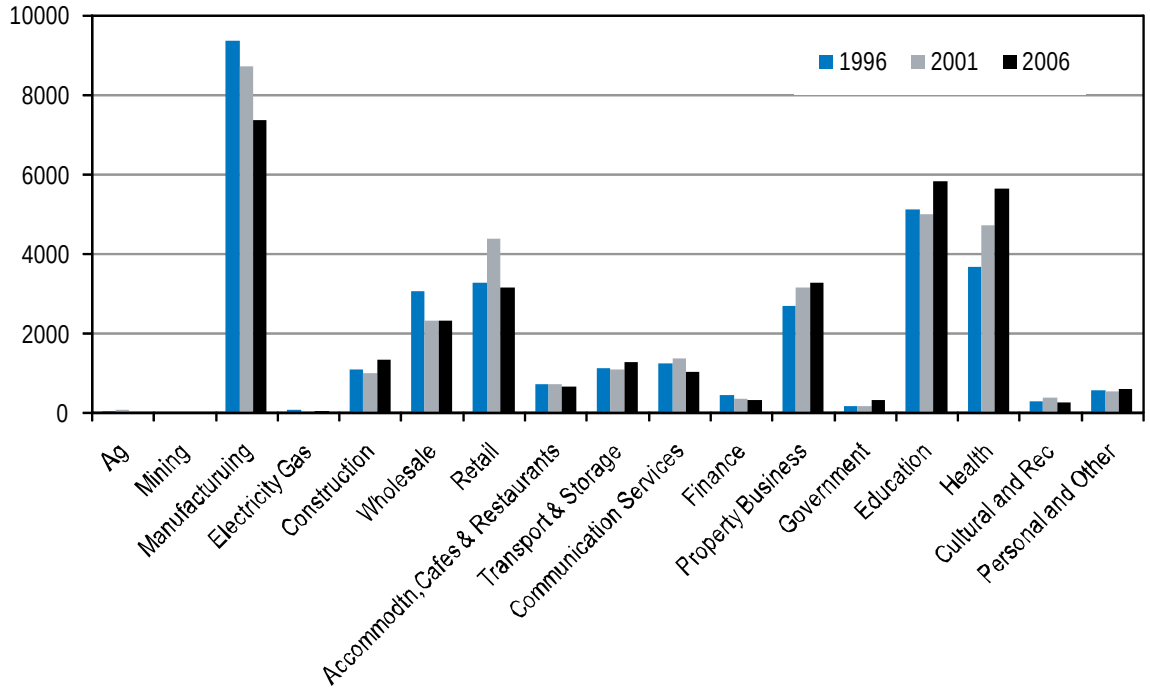
Employment in the South West SLA

The best approximation of the Monash technology cluster is, however, the South West SLA, part of the City of Monash. This includes the Monash University and CSIRO campuses, and the Monash Medical Centre. However, its eastern boundary is Blackburn Rd and it therefore excludes employment at the Synchrotron and some technology parks to the east of the University. Importantly, however, it does not include the Glen Shopping Centre and so is not distorted by the high levels of retail jobs and other services available at the Glen.

Over the period 1996 to 2006, for which reasonably comparable JTW data are available, employment in the Monash–South West SLA reflects the structural change experienced in the LGA. As shown in Chart 5.6, employment in manufacturing has declined by about 2000 jobs. This loss has been almost exactly offset by the increase in jobs in the health sector. Overall, there has been little change in employment levels. By 1996, therefore, the broad industry structure had already been established with employment

in education and health the second and third largest respectively industry sector after manufacturing. Employment in health grew at 4.4 per cent per annum between 1996 and 2006.

CHART 5.6 EMPLOYMENT BY INDUSTRY IN THE MONASH–SOUTH WEST SLA



Source: ABS Journey to Work data (2001, 2006).

A sizeable professional and technical services component forms part of the property and business services sector. The 2006 Census was before the opening of the Synchrotron. However, it can be expected that this facility will add, both directly and indirectly, to the growth of professional and technical jobs in area, although most will be recorded in the neighbouring SLA.

One of the advantages that Monash technology cluster has had in recruiting highly skilled staff is that the suburbs to its east have well above proportions of well educated managers and professionals. More than half of the working population in the relevant LGAs are managers and professionals. Table 5.4 shows that the workforce employed in the Monash South West SLA is divided between those who travel from the inner east of Melbourne and those who live to the south and east of Monash.

Table 5.4 shows the origin of those working in three sectors in the Monash South West SLA, Education Health and Manufacturing. A much higher proportion of those working in education and health are drawn from suburbs in the inner east 30.2 per cent and 25.3 per cent compared with manufacturing, which sources only 14.7 per cent of its workforce from those suburbs. In contrast, manufacturing draws 46.7 per cent of its workforce from the outer east and south eastern LGAs where higher proportions of lower skilled workers reside, whereas the proportion working in the education and health sectors are much lower.

TABLE 5.4 SELECT MONASH SOUTH WEST INDUSTRIES AND THE ORIGIN OF THE WORK FORCE, 2006			
LGA OF ORIGIN	EDUCATION	HEALTH AND COMMUNITY SERVICES	MANUFACTURING
Monash LGA	22.7%	18.2%	14.4%
Inner East			
Glen Eira	9.8%	8.5%	4.7%
Port Phillip	3.6%	2.4%	1.5%
Stonnington	4.7%	4.0%	1.8%
Boroondara	5.9%	4.9%	2.8%
Whitehorse	6.2%	5.4%	3.9%
Total Inner East	30.2%	25.3%	14.7%
Outer East/South East			
Kingston	5.9%	10.8%	8.3%
Casey	5.6%	9.2%	16.4%
Gr. Dandenong	4.1%	6.4%	14.0%
Knox	5.8%	6.6%	7.9%
Total Outer East/South East	21.5%	33.0%	46.7%
Other SLAs	25.6%	23.5%	24.3%
Total	100.0%	100.0%	100.0%
Total Number Employed	5823	5640	7327

Source: ABS Journey to Work data (2006).

This dichotomy in the neighbouring spatial labour market markets has undoubtedly helped the development of the Monash technology cluster. It has been able to draw on nearby highly skilled staff who would otherwise be working at jobs located in or near to the CBD. A supply of somewhat lower skilled support staff has come disproportionately from the suburbs further out.

Lessons from the Monash Technology Cluster

This analysis would suggest that a viable technology cluster has been formed built around the core of Monash University. Its relative success is consistent with experience in the US discussed above, where large research-based universities with active technology transfer programs have been able to influence the development of high tech industry in their immediate region. The licensing income received by Monash includes sizeable payments relating to their IVF research, again consistent with US experience, where biotechnology licence fees have been disproportionately important. In this regard the decision by the state government in the 1980s to transfer hospital beds from the Queen Victoria Women's Hospital in the CBD to the Monash Medical Centre was highly significant. Perhaps the decision to build the Australian Synchrotron at Monash will prove to be similarly crucial. The co-location of CSIRO's campus would also seem to have been important. More recently, the Monash STRIP has been established to provide an on-campus incubator to migrate inventions to the market place. We lack comprehensive data on the extent of the links between the university and the surrounding region, but the data quoted earlier on Monash University start-ups and anecdotal evidence of extensive informal

university industry linkages suggests that the development of the Monash cluster accords with OECD experience (Potter and Miranda 2009).

We lack reliable data for the number of jobs generated as the University grew from its founding to its current size. The combined employment in the health and education sectors was 11,476 in 2006. If the entire employment in property and business services is notionally allocated to the cluster, this adds a further 3292 jobs. As acknowledged above, the SLA boundaries exclude some of the technology parks and doubtless there are business activities further afield that are networked to the cluster. Nonetheless, this evidence would suggest a cluster employment of about 15,000 to a maximum of 25,000. Some measure of its significance is available by noting that employment in the education and health sectors alone in the area bordering the CBD is about 30,000. This, of course, includes two universities and several major hospitals. Growth in jobs in the cluster over the last decade, however, has been relatively moderate. Given the magnitude of public funding in the university and complementary infrastructure, more work is required to further develop the commercial links from the university and other research facilities to nearby businesses.

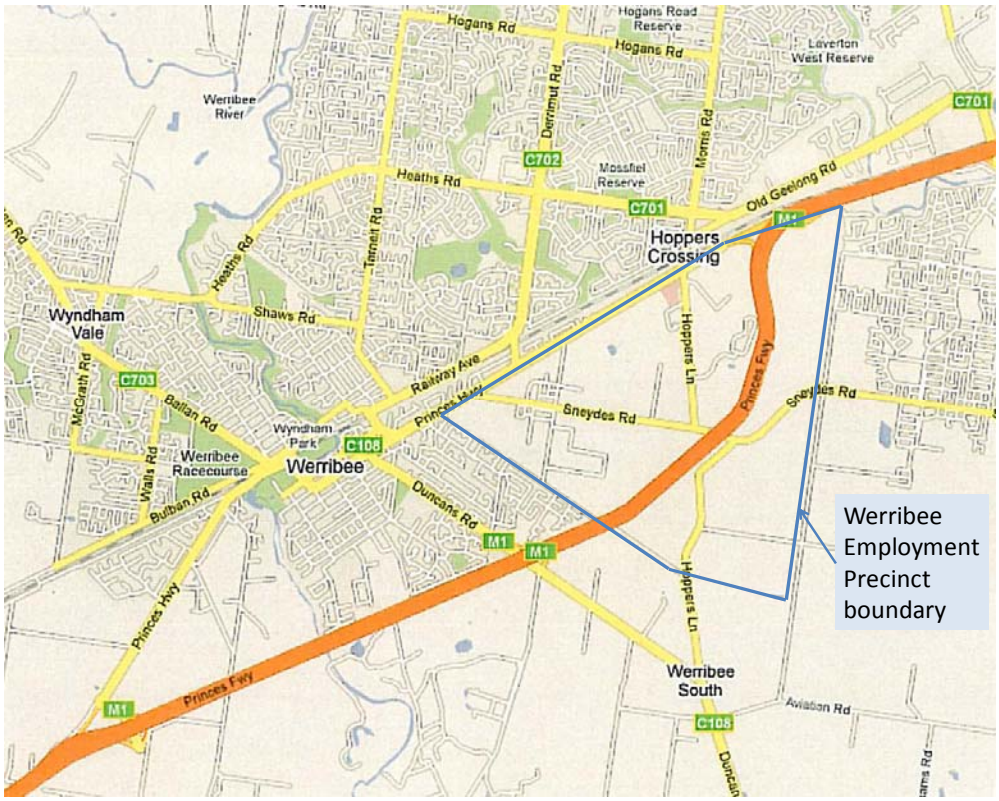
The purpose of investigating the development of the Monash technology cluster over a period of almost 50 years is to suggest the magnitude of such a cluster, which could be established at the Werribee Employment Precinct over a similar timeframe. It has been suggested that the development of the Monash technology cluster has occurred in reasonably favourable circumstances that would need to be repeated for a similar cluster to succeed at Werribee. These include the south easterly growth of Melbourne that quickly enveloped the outer edge of Monash Campus, the complementary well-qualified labour market to the east, the co-location of the CSIRO, a major teaching hospital and the investment in research infrastructure.

WERRIBEE EMPLOYMENT PRECINCT

The Werribee Agriculture and Food Technology Precinct is the largest undeveloped piece of land owned by the Government in the metropolitan area. The 925 hectare precinct is currently home to a number of research and development organisations, including Food Science Australia, CSIRO Food and Nutritional Sciences, Victoria University, Melbourne University Veterinary Clinic, the Dairy Innovation Centre and Agrifood Technology (DPCD 2009; Lead West 2009).

The Werribee Employment Precinct lies in the Wyndham LGA to the immediate south of Hoppers Crossing and east of the Werribee Activity District. Importantly, the railway line forms its northern boundary and Hopper Crossing Station is just outside the Precinct. The Princes Freeway cuts through it (see map in Chart 5.7).

CHART 5.7 WERRIBEE EMPLOYMENT PRECINCT



Source: Google Maps, Melway Greater Melbourne, 2010.

Wyndham LGA

As shown in Table 5.5, Wyndham has a population of 112,693, one of the larger rapidly growing outer Western Region LGAs (6.2 per cent per annum from 2001 to 2008). Reflecting the new housing developments, it has a younger than average population with a relatively large number of persons under 25 (35.4 per cent) and a low percentage over 65 (6.8 per cent). It is also the least culturally diverse of the Western Region LGAs with percentages of non-English speakers born of only 18.7 per cent, close to the State average. Median individual income is the highest of the Western LGAs and higher than the average for Victoria. The SEIFA (socio-economic disadvantage) index is also the highest (least disadvantaged) of the Western LGAs. Overall, the current population is more 'anglo', less culturally diverse and better off than the average for other LGAs in the Western Region.

TABLE 5.5 SOCIAL PROFILE WYNDHAM AND OTHER WESTERN REGION LGAS, 2006							
	WYNDHAM	BRIMBANK	HOBSONS BAY	MARIBYRNONG	MELTON	MOONEE VALLEY	VICTORIA
Population	112,693	168,216	81,460	63,140	78,912	107,090	4,932,423
% pop < 25yrs	38.1	35.4	31.6	30.1	38.8	30.1	32.9
% pop > 64yrs	6.8	10.5	13.7	12.4	5.7	15.6	13.7
Cultural diversity							
% NESB	18.7	43.5	23.1	37.4	19.9	24.2	18.5
% speak LOTE	22.2	56.9	29.7	46.2	25.7	30.9	21.5
Education							
% pop uni deg	6.8	6.4	9.4	13.1	6.3	13.1	10.2
Incomes							
Median individual gross weekly income	517	358	463	423	505	488	456
SEIFA (socio eco)	1021.8	930.5	997.8	948.5	1009.8	1015.6	1000

Source: ABS Census data (2007a).

Despite its relative affluence however, of its total residential workforce of over 53,000, it has a low proportion of managers and professionals and a relatively high proportion of technicians and trades workers (15.8 per cent) and clerical and admin workers (18.1 per cent) compared with the more gentrified inner west LGAs (tables 5.8 and 1.4). This occupation structure may help explain the relatively low proportion that is university educated, a characteristic which appears to be carrying over to the current generation of school leavers, as discussed in the next chapter.

TABLE 5.6 OCCUPATION STRUCTURE, WYNDHAM LGA, 2006			
	PERSONS	% OF TOTAL	CAGR 1996 TO 2006
Managers	5554	10.5	4.7
Professionals	7490	14.1	6.6
Technicians & trades workers	8365	15.8	3.4
Community & personal service workers	4539	8.6	6.9
Clerical & administrative workers	9595	18.1	3.8
Sales workers	5350	10.1	6.0
Machinery operators & drivers	5564	10.5	4.5
Labourers	5525	10.4	6.1
Inadequately described/Not stated	1087	2.0	1.7
Total	53,069	100.0	4.9

Note: CAGR = compound annual growth rate.
Source: ABS Census data (2007a).

This lower skilled occupational structure is reflected in the industries in which the resident population works with a high proportion in manufacturing (14.3 per cent), retail (11.6 per cent) and transport, postal and warehousing (8.8 per cent). Employment in the key service sectors, such as professional, scientific and technical services (5.2 per cent) and health care and social assistance (8.1 per cent), is each more than two percentage points lower than the Victorian average.

TABLE 5.7 EMPLOYMENT BY INDUSTRY, 2006				
	JOBS OF RESIDENTS		JOBS IN WYNDHAM	
	NO.	%	NO.	%
Agriculture, forestry & fishing	467	0.9%	560	1.5%
Mining	74	0.1%	24	0.1%
Manufacturing	7592	14.3%	6450	17.6%
Electricity, gas, water & waste services	422	0.8%	314	0.9%
Construction	4220	8.0%	2682	7.3%
Wholesale trade	2922	5.5%	2793	7.6%
Retail trade	6182	11.6%	4771	13.0%
Accommodation & food services	2766	5.2%	1691	4.6%
Transport, postal & warehousing	4657	8.8%	4227	11.5%
Information media & telecommunications	1070	2.0%	360	1.0%
Financial & insurance services	2284	4.3%	369	1.0%
Rental, hiring & real estate services	713	1.3%	549	1.5%
Professional, scientific & technical services	2754	5.2%	1032	2.8%
Administrative & support services	2007	3.8%	820	2.2%
Public administration & safety	3572	6.7%	2558	7.0%
Education & training	2903	5.5%	3059	8.3%
Health care & social assistance	4285	8.1%	2488	6.8%
Arts & recreation services	929	1.8%	405	1.1%
Other services	1849	3.5%	1145	3.1%
Inadequately described/Not stated	1400	2.6%	448	1.2%
Total	53,068	100.0%	36,745	100.0%

Source: ABS Census data (2007a).

Consistent with other outer LGAs, about one third of the residents work within the LGA (see Table 5.8). About half that number travel to the city to work, while others work in the nearby LGAs in the Western Region. While Wyndham has fewer jobs than workers, about half the jobs it has are filled by locals and over 28 per cent of the remainder come from other Western Region LGAs. Exploiting the good transport links (road and rail), some 5 per cent come from Geelong.

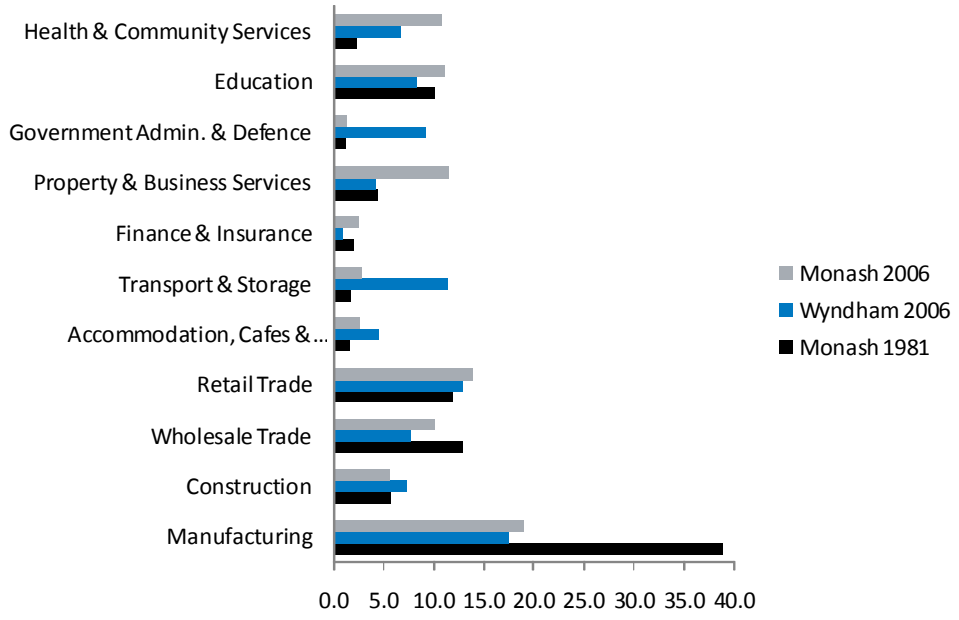
TABLE 5.8 WYNDHAM LGA, 2006					
WHERE WORKERS COME FROM			WHERE RESIDENTS WORK		
	NO.	%		NO.	%
Wyndham	17,789	48.4	Wyndham	17,789	33.2
Brimbank	3317	9.0	Melbourne	8938	16.7
Hobson's Bay	3206	8.7	Hobson's Bay	5142	9.6
Melton	2087	5.7	Brimbank	3217	6.0
Greater Geelong	1823	5.0	Maribyrnong	2555	4.8
Maribyrnong	919	2.5	Port Phillip	2048	3.8
Hume	887	2.4	Hume	1204	2.2
Moonee Valley	805	2.2	Yarra	1006	1.9
			Greater Geelong	1002	1.9
			Moonee Valley	790	1.5
Other areas	5914	16.1	Other areas	9836	18.4
Total	36,747	100	Total	53,527	100

Source: ABS Journey to Work data (2006).

Werribee Precinct Strategy

Overall, the current employment structure of Wyndham is very different from that of the technology cluster that has developed around Monash. This is illustrated by the differences in jobs in the two SLAs, the Monash South West discussed above and the Wyndham North SLA which contains the existing Werribee Employment Precinct and most of Werribee, Hoppers Crossing and Laverton (see Chart 5.8). The existing industry structure has a relatively heavy emphasis on transport and retail employment. The proportion of jobs in education and health are relatively low. However, perhaps this is not the relevant comparison.

CHART 5.8 JOBS IN THE MONASH AND WERRIBEE 'CLUSTERS' COMPARED, 1981 AND 2006



Source: For 2006 ABS Journey to Work data (2006); for 1981 unpublished Journey to Work data.

Chart 5.8 also includes the Monash LGA employment structure in 1981, shown earlier in the chapter in Table 5.3 and Chart 5.5. This is a larger area than the single SLA shown for 2006, for which data are not available. However it does illustrate that in many ways the employment structure in Monash LGA in 1981 was not dissimilar to that of the Wyndham SLA in 2006 in a number of key sectors. Property and business services represented less than 5% of employment in Monash in 1981, as it does in Wyndham in 2006. The proportion employed in health and community services is higher in Wyndham in 2006 than Monash in 1981. The proportions in education are much the same, although by 1981 Monash University was well established. Of course, there has been national and state-wide economic structural change since 1981 that has affected the transition in the Monash employment structure, such as the decline in manufacturing, which was almost 40% of employment in Monash in 1981, to less than half of that in 2006. Whether compared to Monash in either 1981 or 2006, the proportion employed in the transport sector is high in Wyndham in 2006, reflecting both regional factors and the broader process of structural change as discussed in the previous chapter.

CONCLUSION

There is a rich academic literature on the relationship between university-generated new knowledge, the commercialisation processes involving technology transfer and the establishment of technology clusters. One of the themes of this literature is the case specific nature of successful technology transfer and cluster establishment.

The Monash University case study identifies a set of conditions which appears to have been instrumental in the successful development of a technology cluster. While this analysis serves to indicate the sizeable task involved in building a technology cluster at Werribee, focussed on a university campus along the lines established at Monash, it demonstrates that over time a substantial restructuring in employment composition can be achieved largely arising from the location of strategic public infrastructure and complementary businesses.

The strategies followed in the Monash case study to increase employment levels in education, health and professional business services are available to government in the Werribee Precinct. These would require the allocation of substantial resources, such as the construction and development of a research university campus at Werribee and the upgrading of the Mercy Hospital at Hoppers Crossing to a full teaching/research-based hospital. Over, perhaps, a two-to-three decade period (as in the case of Monash) this is a feasible option, provided it was supported by sustained government investment and continuing population growth.

In the nearer term, such an allocation of resources would potentially be in competition with bids for resources for the development of the Sunshine Hospital and Victoria University's current strategy of consolidating its operations at its Footscray, Sunshine and St Albans campuses.

CHAPTER 6. ROLE OF THE UNIVERSITY

Education has a central role in the transformation of the Western Region, and Victoria University as the region's major tertiary institution has a particularly important one. A key strategy for the continuing economic transformation of the West is to attract industry and provide jobs that are better integrated into the knowledge economy. As such, the major drivers of the knowledge economy are education and technology.

Two major Commonwealth reports, Cutler (2008) on innovation and Bradley et al. (2008) on education, have emphasised the importance of these two factors as being critical to the longer term competitive position of Australia:

> Only citizens who are resilient, informed, adaptable and confident will manage the consequences of the new global economy with all its opportunities and threats. A strong education system designed to ensure genuine opportunity for all to reach their full potential and to continue to improve their knowledge and capacities throughout their lives will build such people. (Bradley et al. 2008, p. 1)

The Bradley report identified emerging skills shortages, particularly of undergraduates. A large part of the increased demand for graduates is the increasing professionalisation of the services sector. The knowledge required by people delivering services is constantly increasing, whether the waiter serving wine or the accountant delivering sophisticated financial advice.

This chapter reviews educational outcomes in the Western Region. The analysis is taken largely from the 2006 Census, but supplemented by more recent data. As it shows, education outcomes are low compared with other parts of the state and VU has a special task in catering for the tertiary education needs of students in the Region. It presents some cluster analysis based on the socioeconomic characteristics of its student population which helps define the role it undertakes. Finally, it discusses the University's recently developed strategies to build links with industry and outlines the current campus strategy to focus greater resources at three of its campuses.

EDUCATION OUTCOMES IN THE WESTERN REGION

The Western Region of Melbourne suffers a high level of disadvantage, relative to Melbourne as a whole, as has been discussed in other sections of this report. LGAs in the West consistently rank low in each of the SEIFA indices produced by the Australian Bureau of Statistics. These LGAs have a higher proportion of the population with limited educational attainment and a high migrant population (particularly new arrivals in need of English language skills). Victoria University has a commitment to the Western Region of Melbourne and has taken the lead in upgrading the skills of the population in the West, providing intellectual leadership in the region. The ways in which Victoria University has attempted to meet the demands of the community are:

- by catering to a diverse range of students;
- having the highest proportion of students from disadvantaged backgrounds in Victorian universities;

- working in partnership with AMEP (the Adult Migration Program run by the Australian Government); and
- undertaking, with assistance from industry, a thorough review of its courses to identify employment and occupational trends and opportunities at the global, national and regional level, to ensure its students are able to take advantage of emerging trends in the labour market.

The SEIFA index for education and occupation shows that each of the Local Government Areas (LGAs) in the West is more disadvantaged than Melbourne as a whole (Table 6.1). This is particularly the situation in Brimbank and Melton.

TABLE 6.1 SEIFA INDEX OF EDUCATION AND EMPLOYMENT, 2006

	EDUCATION AND OCCUPATION		
	SCORE	RANK	DECILE
Brimbank	921	4	1
Hobson's Bay	993	55	7
Maribyrnong	1022	63	8
Melton	947	18	3
Moonee Valley	1041	65	9
Wyndham	965	36	5
Melbourne	1190	80	10

Source: ABS, SEIFA, 2006.

Educational Outcomes in the Western Region

The proportion of students completing Year 12 increased between 2001 and 2006 for the Western Melbourne Region and in Melbourne as a whole (Table 6.2). However, a lower proportion of the population in Western Melbourne completed Year 12, Year 11 and Year 10 or equivalent. Also, a higher proportion of the population in the Western Melbourne region did not go to school.

TABLE 6.2 HIGHEST YEAR OF SCHOOL COMPLETED, MELBOURNE AND WESTERN MELBOURNE, 2001 AND 2006 (%)

	WESTERN MELBOURNE			MELBOURNE		
	2006 15-19 YEAR OLDS	2006 TOTAL	2001 TOTAL	2006 15-19 YEAR OLDS	2006 TOTAL	2001 TOTAL
Year 12 or equivalent	32.2	45.2	38.5	31.1	48.5	43.2
Year 11 or equivalent	19.5	11.3	11.8	19.3	12.5	13
Year 10 or equivalent	20.9	12.9	13.2	21	14	14.4
Year 9 or equivalent	12.4	6.1	6.6	13.9	6.1	6.5
Year 8 or below	3.4	11.3	13.8	4.3	7.8	9.9
Did not go to school	0.2	2.5	2.9	0.1	1.3	1.5
Still at school			4			3.8
Highest year of school not stated	11.4	10.8	9.2	10.2	9.7	7.9
	100	100	100	100	100	100

Source: Derived from ABS Census data (2007a).

Tables 6.3 and 6.4 indicate the high proportions of males and females who have not completed Year 12. Brimbank, Hobson's Bay, Melton and Wyndham have higher proportions of both males and females and in each of the age groups with proportions higher than the Melbourne average.

TABLE 6.3 PROPORTION OF MALES WHO HAVE NOT COMPLETED YEAR 12, OUTER WESTERN MELBOURNE LGAS, 2006, (%)

	20-24 YEARS	25-34 YEARS	35-44 YEARS	45-54 YEARS	55-64 YEARS
Brimbank	26.4	34	53.5	58	66.3
Hobson's Bay	31.1	33.8	49.5	55.8	64.8
Maribyrnong	15.8	18.4	37.3	49	60.3
Melton	40.6	41.7	60.4	65.3	71
Moonee Valley	16.4	22	39	43	56.6
Wyndham	39.3	39.4	57.9	63.6	69.2
Melbourne	23	28	45.5	48	55.5

Note: Above Melbourne average in bold.
Source: ABS Census data (2007a).

TABLE 6.4 PROPORTION OF FEMALES WHO HAVE NOT COMPLETED YEAR 12, OUTER WESTERN MELBOURNE LGAS, 2006, (%)

	20-24 YEARS	25-34 YEARS	35-44 YEARS	45-54 YEARS	55-64 YEARS
Brimbank	17.4	27.2	49.8	63.4	75.9
Hobson's Bay	18.8	20.9	41.9	56.4	72.1
Maribyrnong	13.6	15	32.5	49.9	70.8
Melton	23.3	26.2	54.3	70	78.9
Mooney Valley	11.4	13.7	32.6	44.8	68.1
Wyndham	23.5	26.9	54	64.3	76.7
Melbourne	14.3	19	39.7	49.9	64.3

Note: Above Melbourne average in bold.
Source: ABS Census data (2007a).

The proportion of people with no degree qualification for Brimbank, Hobson's Bay, Melton and Wyndham, are all above the Melbourne average in each age group for both sexes (tables 6.3 and 6.5).

TABLE 6.5 PERCENTAGE OF PEOPLE *WITH SOME FORM OF NON-SCHOOL EDUCATION* WHOSE HIGHEST LEVEL OF EDUCATION IS BELOW A DEGREE LEVEL QUALIFICATION, OUTER WESTERN MELBOURNE LGAS, 2006

	MALES				FEMALES			
	25-34 YEARS	35-44 YEARS	45-54 YEARS	55-64 YEARS	25-34 YEARS	35-44 YEARS	45-54 YEARS	55-64 YEARS
Brimbank	60.5	71.3	73	81.3	49.2	56.9	60.9	61.4
Hobson's Bay	55.4	60.4	64.5	74	40	42.9	45.5	54.3
Maribyrnong	35.9	47.4	59	70.3	31.4	38.1	43.1	51.6
Melton	72.5	76.3	79.5	83.9	54.1	60.4	64.2	67.3
Moonee Valley	44.4	50.1	50.3	65	32.3	40.4	38.7	48.6
Wyndham	67.6	72.4	76.1	80.2	53.3	59.3	61.3	64.2
Melbourne	49	56.4	57.7	63.2	37.7	44.3	46.7	51.8

Note: Above Melbourne average in bold.
Source: ABS Census data (2007a).

TABLE 6.6 PERCENTAGE OF PEOPLE WITH SOME FORM OF NON-SCHOOL EDUCATION WHO HAVE POSTGRADUATE EDUCATION, OUTER WESTERN MELBOURNE LGAS, 2006								
	MALES				FEMALES			
	25-34 YEARS	35-44 YEARS	45-54 YEARS	55-64 YEARS	25-34 YEARS	35-44 YEARS	45-54 YEARS	55-64 YEARS
Brimbank	7.3	6.7	6.7	4.9	8.2	9	7.7	7.3
Hobson's Bay	9.1	12	12.5	9.3	12.7	18.2	20	14
Maribyrnong	20	15.7	14.7	9.3	15	20.7	22.7	13.6
Melton	4.8	5.9	6.2	5	6.9	8.5	7.6	6.2
Moonee Valley	12.3	14.7	16.5	13.4	14.9	17.7	21.6	19.1
Wyndham	6.9	7.5	8.5	6.8	9.2	9.7	10.8	9.2
Melbourne	11.6	13.6	14.6	13.4	13.3	16.6	17.6	16.2

Note: Below Melbourne average in bold.
Source: ABS Census data (2007a).

Table 6.7 shows year 12 completions and tertiary applicants and offers for 2008-09.

TABLE 6.7 YEAR 12 COMPLETIONS AND TERTIARY APPLICANTS AND OFFERS 2008-09					
	TOTAL COMPLETED YEAR 12	TERTIARY APPLICANTS	UNIVERSITY OFFERS*	TAFE/VET OFFERS*	ANY TERTIARY OFFER*
Brimbank numbers	1283	1135	574	495	1033
Applicants as % of completions & offers as % of applicants		88.5%	50.6%	43.6%	91.0%
Hobson's Bay numbers	523	445	269	159	404
Applicants as % of completions & offers as % of applicants		85.1%	60.4%	35.7%	90.8%
Maribyrnong numbers	520	447	233	183	402
Applicants as % of completions & offers as % of applicants		86.0%	52.1%	40.9%	89.9%
Melton numbers	529	473	272	171	420
Applicants as % of completions & offers as % of applicants		89.4%	57.5%	36.2%	88.8%
Moonee Valley numbers	1183	1078	743	281	987
Applicants as % of completions & offers as % of applicants		91.1%	68.9%	26.1%	91.6%
Wyndham numbers	872	676	341	270	594
Applicants as % of completions & offers as % of applicants		77.5%	50.4%	39.9%	87.9%
Total Western Region numbers	4910	4254	2431	1559	3841
Applicants as % of completions & offers as % of applicants		86.6%	57.1%	36.6%	90.3%
Total Victoria numbers	44,238	36,531	24,451	10,368	33,313
Applicants as % of completions & offers as % of applicants		82.6%	66.9%	28.4%	91.2%

Note: *Estimated from proportion of applicants given.
Source: DEECD (2009).

Compared with total Victoria, the proportion of those completing year 12 applying for tertiary entrance was high, except for Wyndham which was only 77.5 per cent, compared with the state average of 82.6 per cent. Moonee Valley was the highest with 91.1 per cent. There was little variation in the proportion of applicants who received offers, although again, Wyndham was the lowest and Moonee Valley the highest. However, difference in the mix of offers, as between university and VET/TAFE, was very large. The proportion who received university offers was generally well below the state average. Only Moonee Valley (68.9 per cent) was above the state average of 66.9 per cent. Wyndham was the lowest with 50.4 per cent. Overall, the average for the region was 57.1 per cent. Overall, the proportion of those in the region receiving TAFE/VET offers was high, 36.6 per cent compared with the state average of 28.4 per cent. This data, although for one year only, suggests that many of the patterns of educational disadvantage in the Western Region are continuing.

On the other hand, over the past decade the number of university students has been growing while those at TAFE/VET have been falling. Between 1996 and 2006, the number of students in technical and further education had declined at an annual average rate of 0.8 per cent in that period, while it increased at 2 or more per cent per annum in university and other tertiary institutions (Table 6.8).

TABLE 6.8 NUMBER OF STUDENTS BY TYPE OF POST SECONDARY EDUCATIONAL INSTITUTION, WESTERN MELBOURNE

	1996 NO.	2001 NO.	2006 NO.	CAGR %
Technical or further educational institution	9437	9484	8677	-0.8
University or other tertiary institution	14,645	16,808	17,923	2
Other type of educational institution	3072	4197	3927	2.5
Type of educational institution not stated	21,335	23,988	37,932	5.9

Note: CAGR = compound annual growth rate.
Source: Derived from ABS Census data.

The following tables (sourced from CSES 2007) indicate that there is lower participation in education in the LGAs in Western Melbourne. Moreover, those who undertake non-school education are more likely to attend TAFE or other further education institutions. There are large deviations from the Melbourne average within Outer Western Melbourne. Those areas where overall attendance is below average – Brimbank, Hobson's Bay, Melton, Wyndham – are also characterised by the higher likelihood of not going to university. This suggests large differences in the educational experience of people living in Outer Western Melbourne compared to Melbourne as a whole.

The opposite is the case in Maribyrnong, which has an above average proportion of people in further education and more people going to university. This could be suggestive of a high student population and/or gentrification of parts of Maribyrnong.

The attendance rates in Melton and Wyndham may be influenced by the age profile of these communities.

Participation in Adult Community Education in these LGAs is low (particularly in Brimbank) compared to the state average, which is of concern given that incomes and educational levels in this areas are often already low to begin with.

TABLE 6.9 PERCENTAGE OF POPULATION ATTENDING TAFE, UNIVERSITY OR OTHER NON-SCHOOL EDUCATION INSTITUTION WITHIN OUTER WESTERN MELBOURNE (%), 2006

	MALE	FEMALE	TOTAL
Brimbank	6.2	6.6	6.4
Hobson's Bay	5.4	6.2	5.8
Maribyrnong	10.7	10.4	10.6
Melton	4.3	5.1	4.7
Moonee Valley	7.4	8.2	7.8
Wyndham	4.9	5.9	5.4
Melbourne	7.3	8.1	7.7

Note: Below Melbourne average in bold.
Source: ABS Census data (2007a).

Table 6.10 shows the proportion of students in each university who are from particular disadvantaged groups. Table 6.10 shows that over 20 per cent of students at Victoria University come from a low socioeconomic background (compared to just 12.6 per cent in all Victorian universities). Also, it has 5.9 per cent of its students coming from a non-English speaking background, compared to 4.2 per cent in all Victorian universities.

TABLE 6.10 PROPORTION OF STUDENTS IN SELECTED VICTORIAN UNIVERSITIES IN SELECTED EQUITY GROUPS, 2008

INSTITUTION	LOW SOCIO-ECONOMIC STATUS	STUDENTS FROM NON ENGLISH SPEAKING BACKGROUNDS	INDIGENOUS	REGIONAL	ALL DOMESTIC STUDENTS
VU	20.4	5.9	0.3	9	14,109
La Trobe	17.4	2.8	0.5	33.6	22,196
Deakin	12.9	2.4	1.7	21.9	28,250
RMIT	12	6.5	0.3	10.6	23,464
Monash	11.5	5.9	0.3	14	36,743
Swinburne	9.5	4	0.3	8.3	11,736
U. of Melb.	6.8	3	0.5	10.7	32,680
Total State	12.6	4.2	0.6	17.6	178,654

Source: DEEWR (2009, Table 2.3 All Domestic Students by State, Institution and Equity Group).

VU STUDENT POPULATION

Victoria University is a dual sector institution providing both vocational and higher education. Messinis, Sheehan and Miholcic (2008) analysed the student population at Victoria University. The study found that after a decline in 2004, total enrolments had since recovered steadily, as has the share of international students – with increases in enrolments of domestic students in full-time degree courses and of international students generally, especially in Certificate III and IV courses.

Other important characteristics of the student body documented in this study included:

- Students at Victoria University are heavily involved in the labour market, with over 80 per cent either working or seeking work.
- In addition to the rising role of international students, there is a strong influence of migration, with more than half of all students at Victoria University speaking a language other than English at home and having a father born outside Australia.
- Students at Victoria University on average come from socioeconomic backgrounds well below the Melbourne average and, as is common through the educational system, the level of family disadvantage is considerably higher in TAFE courses than in higher education courses. About 75 per cent of students in the University come from families in the bottom half of Melbourne's socioeconomic distribution.

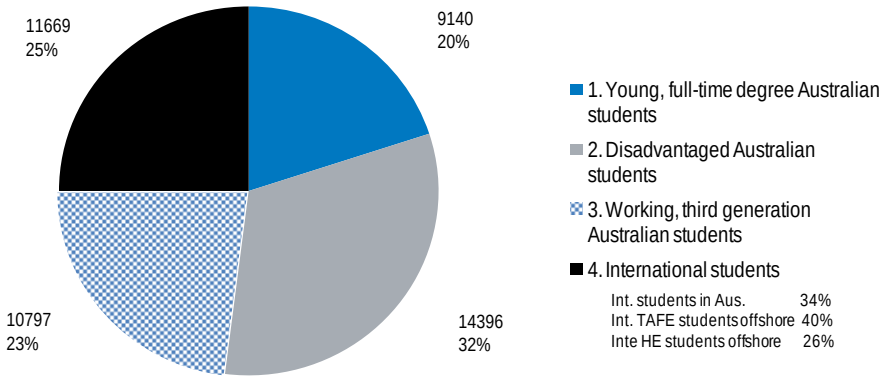
The study highlighted the diversity of the Victoria University student body by identifying three main segments within the Australian student body (see Chart 6.1). These included the following:

1. The first segment (young, full-time Australian degree students) has a much higher than average share of females and of students working part-time, and is heavily focused on full-time study for an undergraduate degree. Students in this segment tend to be much younger than the student mean, and to come from families with a higher than average share of fathers born in Australia and of addresses in the east of Melbourne.
2. The second cluster included disadvantaged Australian students who tend to have lower labour force attachment; study part-time in non-degree courses (but are well represented at the postgraduate level); are considerably older than the student mean; have a higher proportion of fathers born in Asia or Africa; and speak a language other than English or Chinese at home. This segment appears to consist of a large group of students from a second generation migrant background, whose families have not established a strong position in Australia but for which the University's programs (other than the undergraduate degree program) offer an important entry into post-secondary education.
3. The third cluster (working, third-generation Australian students) tends to be heavily involved in part-time study and full-time work. They also have an above-average share in diplomas or TAFE courses, their fathers are predominantly born in Australia, they speak English at home, and are concentrated in other campuses in the West rather than Footscray Park and at the City campus.

Students in the second and third clusters tend to perform relatively poorly. In general, those with LOTE backgrounds are also disadvantaged in their performance.

The fourth segment of VU students consists of international students, who could be classified into three distinct groups: (i) onshore, fulltime, full-fee paying students; (ii) offshore TAFE students; and (iii) offshore higher education full-fee paying students. The offshore TAFE group is the largest segment amongst international students.

CHART 6.1 VU STUDENT SEGMENTS



Source: Messinis, Sheehan and Miholcic (2008).

VU Cluster Strategy

VU has sought to gain a competitive edge by engaging more intensively with industry in order to improve the relevance and employment success of its graduates. It has grouped its courses, across faculties and higher education and VET/TAFE, into twelve industry clusters and established Roundtables of industry representatives to help guide course structures and identify new course opportunities. The clusters include transport and logistics, sports and recreation, education and transition, finance and economic services, and health. As part of the process, CSES was commissioned to draft an industry briefing paper for each. The papers attempted to provide a global and national context to identify more local industry trends.

One aspect that emerged from these papers was the extent to which VU was a product of its region, as well as an instrument of its ongoing change. The courses in which VU tends to specialise are those required by industry and the community in the region, such as accounting, engineering, nursing and teaching. More recently it has sought to specialise in transport and logistics, hospitality and tourism and develop its comparative strength in sports and recreation. In general, these courses tend to lead to relatively modest levels of the occupational and salary structure. Other universities, in particular Melbourne University, cater more to the professions, such as medicine, law and architecture, and provide pathways to the top of these and other professions such as engineering, science and finance.

VU's opportunity is to use its close association with the industry representatives that have joined the Roundtables to identify and serve the changing patterns of demand. It is already one of the major suppliers of skilled personnel for the computer games industry, which itself has wider applications than simply entertainment. In China, climate change, because of its potential to be radically transformative, is being viewed as an enormous opportunity to wrest technological leadership from the West. The

technical challenges presented by climate change have the potential to provide an opportunity for new courses to serve new industries and satisfy new patterns of demand. The success of the Institute for Sustainability and Innovation is an example of the increased demand for water efficiency and other solutions arising from lower rainfall.

Campus Strategies

VU has indicated that it will focus its resources on three campuses: Footscray, Sunshine and St Albans, while also conducting research and teaching activities at Werribee and in the CBD. These developments will act to strengthen employment adjacent to the Footscray and Sunshine activity centres.

CONCLUSION

VU serves a region, which while diverse, has on average low education outcomes. This is illustrated by the low proportion, particularly of males, who complete school, and the low success rates for those applying for university places, despite an above State average proportion of year 12 completions who apply. The University's regional engagement strategy has been multifaceted, but in particular in has attempted to draft industry representatives in the process of developing course structures and identifying new course opportunities.

CHAPTER 7. CONCLUSIONS AND RECOMMENDATIONS

This report has documented the continuing growth and transition of the Western Region identified in the Centre's 2004 report (Sheehan and Wiseman 2004). The Region's outer suburbs are growing as rapidly as any in the State, requiring the conversion of large areas of rural land to urban use. Parts of the Region are also undergoing gentrification and Chapter 2 discussed in some detail the nature, extent and possible implications of this transformation of some of the Inner West's suburbs. In particular, it showed the magnitude of the influx of better qualified, higher income professionals into these suburbs and their strong attachment to the CBD for employment opportunities. Chapter 3 examined the proposal to establishing a Central Activity District with CBD-like functions at Footscray. The development of the Sunshine Activity Centre was also considered. Chapter 4 assembled evidence of the formation of a spatial labour market or employment corridor linking the southern Laverton, Sunshine employment node to the Melbourne Airport and manufacturing areas of the Hume LGA. Chapter 5 examined the likelihood of being able to develop a university-based technology cluster at the Werribee Employment Precinct using the Monash technology as a case study. Finally in Chapter 6, the educational outcomes of the Western Region were analysed, and in this context something of VU's attempt to better understand its student population and deal strategically with the Region through its Industry Cluster approach, was discussed.

The principal findings arising from this detailed analysis of these particular developments in the region include the following:

- As part of the socioeconomic transformation of the Western Region, the Inner West is undergoing significant gentrification. In the period 2001 to 2006 this has resulted in the movement of a large number of highly qualified professionals to the Inner West. A large component of the gentrification of the Inner West, in addition to those from other parts of inner Melbourne, has been driven by the arrival from overseas of well-qualified migrants, particularly from India, who with their links to a rapidly growing economy, could emerge as a significant asset to the West. Although currently the job orientation of the 'gentrifiers' is towards the CBD, potentially they provide a highly qualified workforce for firms and organisations in the Western Region.
- Our analysis of the current Footscray CAD identified a multitude of challenges to be overcome to create a centre with CBD-like functions. The extent of continuing disadvantage in Footscray, despite the gentrification taking place nearby, suggests the need for concerted policy action to address the development of Footscray as a CAD
- Employment corridors in the manufacturing and transport sectors are in the process of development in the Outer West linking nodes in the south, focussed on Laverton/Sunshine, with nodes in the north around Melbourne Airport and manufacturing areas of Broadmeadows/Craigieburn. These nodes draw a substantial proportion of their workforce from the Western Region, with linkages enhanced by the Western Ring Road.
- Universities can be effective catalysts of economic development, as the Monash case study illustrates. The JTW data suggests that employment in the Monash cluster is of the order of

15,000-25,000 jobs. However this has been a long process. Monash University began from a greenfields site in the early 1960s. The development of the cluster benefited from consistent public investment in related infrastructure over many decades. It is only relatively recently that professional and business services have become a significant employer. Monash has benefited from the development of two complementary labour markets including one located in the inner east providing highly skilled staff. A socioeconomic analysis of Wyndham shows a community with quite high average incomes, but low education levels and a low propensity to seek higher education. However a comparison of Monash employment structure in 1981, by which time the Monash University campus was well established, and Wyndham in 2006 shows that there are many similarities in the two employment structures. This illustrates that significant structural change can be achieved over many decades with the application of consistent government policy.

Two particular themes have emerged from this study. One is the path dependent nature of the continuing evolution of the Western Region and its key institutions, of which the University is one. That is to say the region is, to a large extent, a captive of its history as a manufacturing region, and while the population is diverse, it includes some of the most disadvantaged residents of metropolitan Melbourne. On average, education outcomes, skill levels, occupational status and incomes are lower than the average for Melbourne. The gentrification of the Inner West introduces a more highly skilled, better educated group with higher incomes to the West, which is potentially a labour force to fill professional jobs in the West. However, to date their orientation has been towards jobs in the CBD.

The extent of this disadvantage pervades all strategies to further transform the West and improve its integration with the global knowledge economy. It impacts on the prospects of Footscray to fulfil the ambitions of the State Government for it to become a CAD with an array of CBD-like service functions. Even for the above-average income LGA of Wyndham, the low educational outcomes and relatively poor qualifications of its residents presents an additional challenge to the development of a Monash-type technology cluster developing at the Werribee Employment Precinct.

It also impacts on the nature of what Victoria University has to offer the Region. The University is potentially a powerful institution that can help transform the West. However, its courses reflect the region's historical requirements. Its primary antecedent body was the Footscray Institute of Technology, itself a reincarnation of Footscray Technical College, which had successfully served the requirements of local manufacturers for practical engineers and sound accountants since 1916 (Rasmussen 1989). The University is also a victim of structural change. The demise of manufacturing has adversely affected the demand for the courses it has traditionally provided, although its previous role as an educator of accountants has remained a comparative strength. As argued in Chapter 6, its focus has been on the middle rung of the professions with those in the region seeking the 'higher (income) professions', travelling mainly to Melbourne University. VU's opportunity is to exploit its traditionally close relations with industry to develop courses in emerging areas of demand. While its previous incarnations date back to early in the previous century, its mission as a university is less than two decades old.

The second theme is the fragmentation of the Region's key institutions and facilities. In seeking to place in the West one of the CADs belonging to a future polycentric Melbourne, there are a number of candidates. Footscray's candidature is made more difficult by a number of factors discussed in this

report, but none less so by the dispersed location of key activity centres outside the immediate boundary of the CAD. This includes the Western General Hospital and Highpoint, one of the largest regional shopping complexes in Australia. Sunshine has much to offer, with the Sunshine hospital and two VU campuses nearby, but again these are sufficiently removed from the activity district to reduce the likelihood of complementary service industries developing.

The large tract of government owned land at Werribee offers great potential to be transformed into a significant activity centre in the longer term. The government is investigating a number of options for its development designed to optimise the value of its large landholding. One option incorporates a university-based technology cluster. The development of the Monash technology cluster has been a 50-year project, but it has benefited from a number of factors that would need to be reproduced in some way at Werribee. One is the outward growth of Melbourne that ultimately placed Monash at its geographic centre, a large complementary labour market of well-qualified staff in the inner east, and the consistent addition, by public sector investment, of supporting infrastructure and facilities, the most important of which has been the Monash Medical Centre. The Clayton campus has always been Monash University's principal campus and is itself a significant location of teaching and research jobs. VU's campuses in contrast have been scattered throughout the region, none of them on a scale equal to Monash. An investment in a virtually greenfields site such as Werribee would appear to be a significant distraction to VU's present campus consolidation plans. Nor is VU a strong research university. Its research efforts tend to be small scale and specialised. This is changing however. The Institutes of Sustainability and Innovation, and Transport and Logistics, in particular, could be developed at Werribee in conjunction with local industry at Wyndham LGA and elsewhere in the Region.

This argues for a policy response that acknowledges the path dependant nature of regional development. Although path dependency does not exclude quite rapid change, when multiple factors combine to alter the existing trajectory, it does suggest that policy responses need to be cognisant of the existing path of development and of the market forces which are bearing on that development. In implementing the proposed initiatives for Footscray, Sunshine and Werribee in particular the timeframes may be quite different. Whereas Footscray demands immediate attention with development occurring over the next decade, better integrating the Sunshine activity centre may have a 20-30 year timeframe and given the experience of the Monash technology cluster, the development of the Werribee Employment Precinct may be best regarded as a 50year project.

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