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Introduction

The last issue of Research Matters reported on the first wave of census data released by the Australian Bureau of Statistics (ABS) on 21st June 2012. This issue of Research Matters concentrates on analysing the second wave of data which was released on 30th October 2012. This second wave is of most interest for what it says about the size and structure of the labour force: who works, the hours they work, who is not in the labour force and of course how these characteristics are changing. The data cover the industries and occupations people work in while the journey to work data tells us about that critical relationship between where people live and where they work, and also how they travel to work. The second release data also cover internal migration – who is moving and where from and to - which Research Matters will report on in the first issue of 2013.

Victoria's Labour Force

Australia and many other more developed countries are currently in the fortunate position of having a large proportion of their population in working ages, usually categorised as people aged between 15 and 64. The Australian labour force has been growing by an average 2% per year over the last forty years, mainly due to baby boomers ageing into adulthood and into the labour force and also due to a rising participation rate of women. But, as the Intergenerational Reports point out, labour force growth may be more difficult to sustain as the bulge of baby boomers age into their late 60s and move out of the workforce in the coming years. So what does the 2011 census tell us about the labour force and how it is changing?

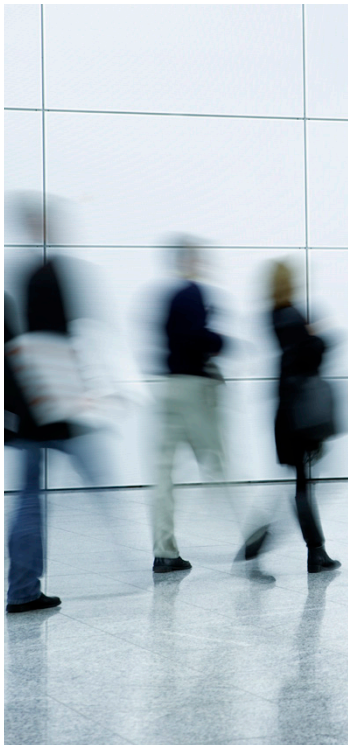
Victoria's labour force is growing strongly. Between 2001 and 2011 Victoria's labour force grew by about 430,000 people or by 19%. This compares with a population growth of 15% over the same period. So the participation rate has been growing despite population ageing and higher rates of attendance in secondary and tertiary education.

Labour force participation rates of older Victorians are increasing. One way to offset population ageing is for people to work later in life. Greater life expectancy and improved standards of health of older Victorians, plus the shift from a 'brawn' to a 'brain' economy, potentially enables more older Victorians to work should they want to or need to. After all, a 65 year old in 2011 was healthier and better educated than a 65 year old was thirty years ago and there are likely to be more job opportunities, particularly for part time work. The 2011 census shows that labour force participation rates for Victorians aged 50-54 increased from 77% in 2001 to 82% in 2011. For 60-64 year olds participation rates increased from 38% to 53%. Part time work now accounts for 40% of employment for people aged 50 and over.

The trend to higher workforce participation among 50-64 year olds was evident at the 2006 Census, before the Global Financial Crisis occurred. These increased participation rates of people aged 50 and over more than offset slight declines of participation rates of people aged under 25 which are due to higher attendance at education institutions. There are also significant gender differences. Almost two-thirds of full time workers are male while more than two-thirds of part-time workers are female. These statistics of course refer to 'formal' work and exclude work sometimes described as 'household duties'.

Despite the Global Financial Crisis, unemployment rates in Victoria have not increased and remain low by international standards. In 2011, 5.4% of Victoria's workforce was unemployed, the same as in 2006 but lower than the rate of 6.8% in 2001. While there were inevitably different unemployment rates in different parts of Victoria, all local government areas in Victoria have unemployment rates lower than the current average rates in the European Community or the USA.

Source: DPCD



State Government Victoria
Department of Planning and Community Development

Spatial Analysis&Research
a branch of the Strategic Planning and Forecasting Division

Social Atlas of Melbourne Maps

Spatial Analysis and Research (SAR) has recently completed a series of maps that are based on the 2011 Census first and second data releases. The map series is based on the Social Atlas product the Australian Bureau of Statistics (ABS) released in 2006.

The maps provide a pictorial representation of key themes by showing the 2011 Census data as thematic maps at the Statistical Area 1 (SA1) level. The smaller area of the SA1s provides a greater level of detail than seen in the past, due to the SA1s containing fewer dwellings (over 200 dwellings for CDs vs. over 100 dwellings for SA1s) and fewer people. Where we used to have over 6,000 Collection Districts (CDs) in metropolitan Melbourne, we now have over 9,000 SA1s.

For the purpose of this map series, the area covered is the urbanised area within metropolitan Melbourne. All data mapped in this Social Atlas series relates to the characteristics of the usual resident population of Melbourne at the time of the 2011 Census.

Each map shows the SA1 boundaries, major roads, Melbourne's Tullamarine Airport and the Melbourne coastline.

The value of these maps lies in their ability to highlight key characteristics of Melbourne's population in relation to economic, social and housing issues. The pattern of geographic distribution provides insight into Melbourne as the place where we live, work and play. Each map shows the diversity that exists within the urban area of Melbourne.

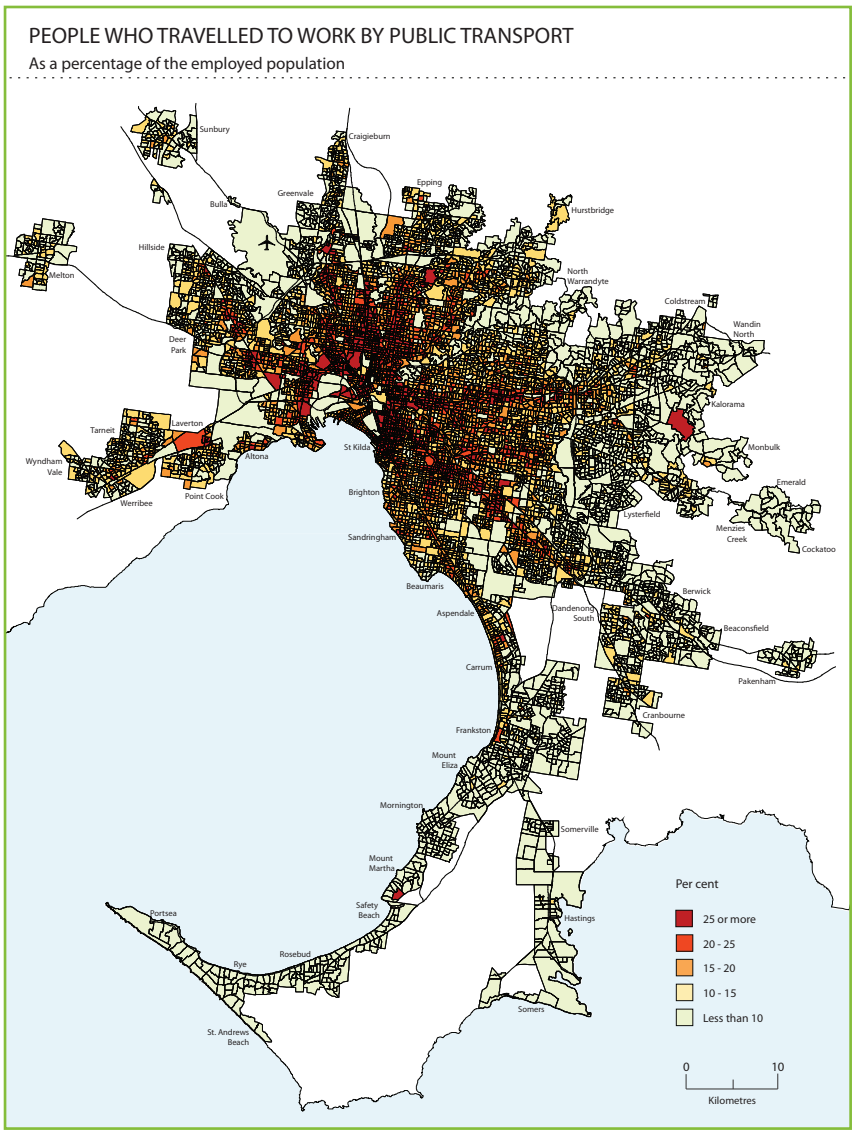
The topics covered by the map series include broad, interrelating themes such as population, cultural diversity, labour force, families and households, income, education and dwellings. The map series currently contains 37 maps.

An example from this map series is shown below in Figure 1, on the theme 'People who travelled to work using public transport'. The map shows the proportion of each SA1s employed population that travelled to work using public transport for all or part of their journey on the 9th August 2011 (Census night).

You can find the data represented in this map series in the Basic Community Profiles provided by the ABS on the 2011 Census (Catalogue no. 2001.0).

You can view the Social Atlas of Melbourne map series on the Department of Planning and Community Development (DPCD) website, under Urban and Regional Research (see back page for details).

Figure 1. Social Atlas map of Melbourne
Source: Data from ABS, 2011 Census



Travelling to work in Melbourne

On Census night, Australians answer the questions "how did you travel to work today?" and, "where was your place of work last week?" Although there is a disconnect between these two questions, at a broad scale they provide an overall snapshot of where people work and how they get there.

Across the whole of metropolitan Melbourne, for those people who stated a method of transport to work, 78% travelled solely by private motorised transport such as a car, 17% travelled by public transport (either on its own or in conjunction with a car), and 5% of people walked or cycled to work (note that across metropolitan Melbourne, around 15% of all workers either didn't go to work, didn't state how they travelled to work, or worked from home on the day of the census. Those people are not included in this analysis). Underlying these numbers, is a large and complex city with varied work locations and transport opportunities. How do travel patterns and work location vary for residents of different parts of Melbourne?

Figure 1 on the previous page gives some indication. It displays the percentage of people living in SA1s that used public transport to travel to work. It shows that rates of public transport use are highest in the inner suburbs of Melbourne and particularly those areas that are located along train and tram lines. Conversely, public transport use is relatively low in the outer areas of Melbourne. Most of those who don't travel by public transport use a car instead.

Why is it that public transport use generally decreases with distance from the CBD? Is it because people living in these areas have further to travel to work? That might be part of the reason. But it may also depend a lot on people's work location and the transport modes they have available to travel there. Most people are aware that Melbourne's rail network is radial, with most lines travelling from outer or middle suburbs and terminating in the CBD. The tram and bus network give additional connectivity particularly across the inner suburbs. Melbourne's walking and cycling network generally converges on inner Melbourne. Therefore, people whose work location is in the CBD or one of the inner Melbourne LGAs are more likely to use public transport, walk or cycle when travelling to work.

The map in Figure 2 shows, for each LGA, the number of residents who work in the inner LGAs of Melbourne, Port Phillip and Yarra, and the type of transport they used to get to work (Note that about 9% of workers across metropolitan Melbourne didn't sufficiently state their place of work on Census. They are excluded from this analysis). The size of the pie indicates the number of people from the LGA that worked in one of the inner LGAs. This number is highest for the residents of those LGAs themselves, with 67 – 74% working in one of the inner LGAs. In middle ring suburbs such as Monash, Manningham and Brimbank, for example, the percentage of workers travelling to one of the inner LGAs is smaller, around 24 – 25%. In the outer east and south eastern Local Government Areas, the percentage is around 5 – 10%.

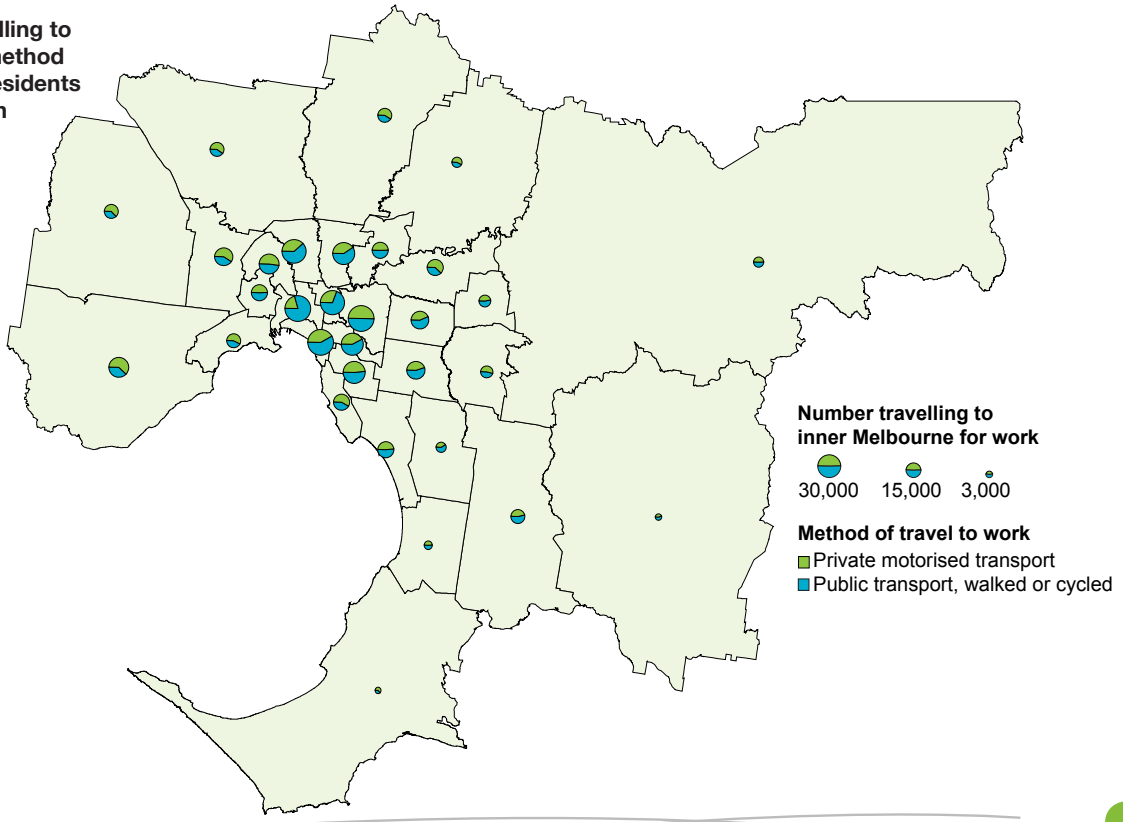
The pie pieces indicate the transport method used to get to work in the inner LGAs. For residents of the inner Melbourne LGAs, those using a car to get to work in that same area are in the minority, with most using public transport, walking or cycling to get to work. The inner to middle LGAs of Moreland, Darebin, Stonnington and Whitehorse all had more than 55% of people travelling via these modes to inner Melbourne.

For LGAs in the outer east and south east of Melbourne, the percentage of people who travelled to work in inner Melbourne by public transport, walking or cycling tended to be lower, but still around 45% or greater (with the Mornington Peninsula, Bayside, and Manningham being interesting exceptions).

In Melbourne's outer north and west, use of public transport, walking and cycling to travel to work in inner Melbourne tended to be slightly lower overall, but still around 35 – 45%.

This brief analysis points to some of the complexity of understanding people's travel to work choices and patterns. With the census providing data about where people lived, where they worked, and how they travelled there, we can start to build pictures of these movements. Work location is likely to be an important driver of the mode of transport people use to get to work, with the availability of public transport, walking and cycling network links into the inner areas of Melbourne, as well the cost and relatively limited availability of car parking in those areas, causing many to use public transport to get to work in those areas. For those who travel to workplaces in the middle or outer suburbs of Melbourne, public transport connectivity is more limited and so they are more reliant on cars for this travel. The census indicates that most people who live in the middle and outer suburbs of Melbourne work in those parts of the metropolitan region.

Figure 2. Number travelling to inner Melbourne and method of transport used for residents of LGAs in metropolitan Melbourne, 2011
Source: ABS Census



How do regional communities adapt to the closure of a major industry?

In the first half of 2012, Spatial Analysis and Research (SAR) was involved in a research project with the Victorian Department of Primary Industries. The project examined the economic, social and demographic impacts of industry closure on nine regional towns (Figure 1). Quantitative data was used to analyse each of the selected towns and three of the towns were chosen for in depth qualitative analysis via semi-structured interviews. Two key themes were integral to the project – the impacts of economic shocks such as a factory closure, and the ways in which communities respond and adapt to such shocks.

Key findings from the project are presented below.

Finding 1: Closure of a major industry does not necessary result in out-migration from a town

A common assumption is that people will move away from an area after the closure of a large employer. Migration is a major decision for many people, especially those with family ties and a strong sense of identity to a particular location. Therefore, in response to an economic shock it was usually only one of several responses and often involved a very small number of households. In the case of Alexandra, out of 44 jobs lost, fewer than five people were identified as having moved away.

From an economic point of view, out-migration may be seen as a positive response as it suggests a high level of labour mobility and therefore market efficiency as labour moves to new centres of growth and production. However, there can be significant social costs of out-migration not only for the individual who is cutting ties with a local community but also for the community as a whole. In small towns like Cann River and Toora, selective out-migration of workers seems to have contributed to a cycle of social disruption and decline.

Finding 2: Commuting is often a viable and preferred alternative to out-migration

Instead of out-migration, commuting to another location may be a preferred adaptation choice. The settlement pattern in many parts of regional Victoria lends itself to the phenomenon of living in one town and working in another. All the case studies considered show this trend, particularly the smaller centres like Dartmoor and Leitchville. One of the positive aspects of commuting is that a community can maintain a degree of stability by avoiding the loss of critical human capital through out-migration.

Finding 3: Impacts from a particular economic shock may be much smaller than those from longer term trends like structural demographic change

Just as people assume population decline following an industry closure, there is an expectation that school enrolments will also fall as workers' families move away. Yet historical data for Orbost Secondary College reveal that economic shocks are not necessarily the largest factor affecting enrolments (figure 3). In fact structural demographic change seems to be a bigger factor. Low enrolments in the 1980s reflect the loss of young adults in the early 1970s. The large baby-boomer generation reached adulthood during the late 1960s and early 1970s. If that generation had stayed, enrolments would have been much higher in 1980s and 90s as their children entered school. Shocks of the early 1990s, such as local government amalgamation, rationalisation of government services and bank closures, hardly register on this graph.

Finding 4: Industry closures do not always result in house prices falling

In many discussions about economic shocks, concern is raised over the potential impact on house and land prices. Data show little evidence of a consistent relationship between economic shocks and house price responses (Figure 4). Despite common expectation or perception that house prices fall after a shock, the determination of price is more complex. Housing is not a standardised commodity and local supply of housing may be subject to shortages and surpluses at different times due to factors around planning, building and construction which can create time lags in provision.

After an economic shock, housing markets may be affected by:

- the nature of adaptive responses (i.e. out-migration or commuting)
- the role of external buyers in local market (eg. Alexandra attracts second home owners)
- the ability for homeowners to sell (eg. Dartmoor showed high vacancy rates even before its sawmill closed, suggesting a limited pool of buyers).

Figure 1. Location and nature of economic shocks reviewed
Source: ABS Census

Town	Year of shock	Nature of shock	Town size	Jobs lost	Resident workforce
Alexandra*	2011	Closure of sawmill	2,046	44	877
Cann River*	2008	Closure of sawmills	242	9	100
Camperdown*	2000	Closure of dairy factory	3,028	35	1206
Orbost	2002	Closure of sawmills	2,055	35	693
Myrtleford	2008	Closure of sawmill	2,646	29	1018
Dartmoor	2008	Closure of sawmill	264	130	130
Toora	2000	Closure of dairy factory	481	70	165
Tongala	2005	Downsizing of dairy factory	1,623	147	462
Leitchville	2010	Closure of dairy factory	271	80	110

Figure 2. Commuting patterns to the Dartmoor sawmill prior to closure in 2008 (no. of persons)
Source: Data from Parliament of Victoria 2010

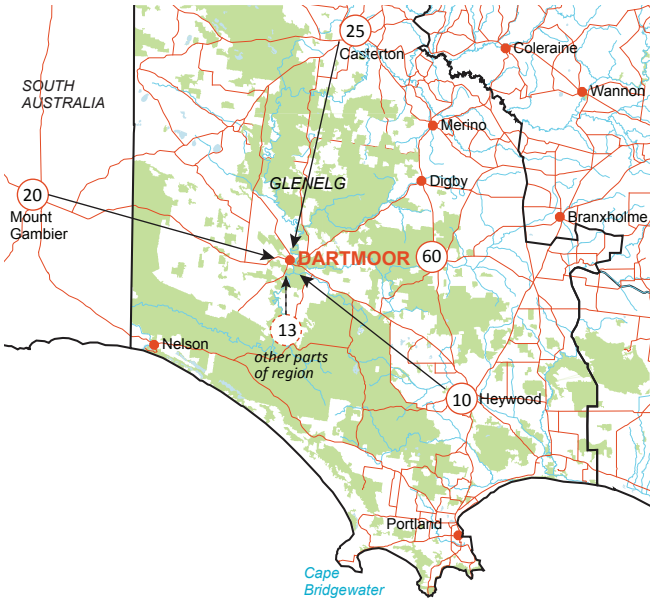


Figure 3. Secondary school enrolments in Orbost, 1950 to 2012
Source: Phillips 2012

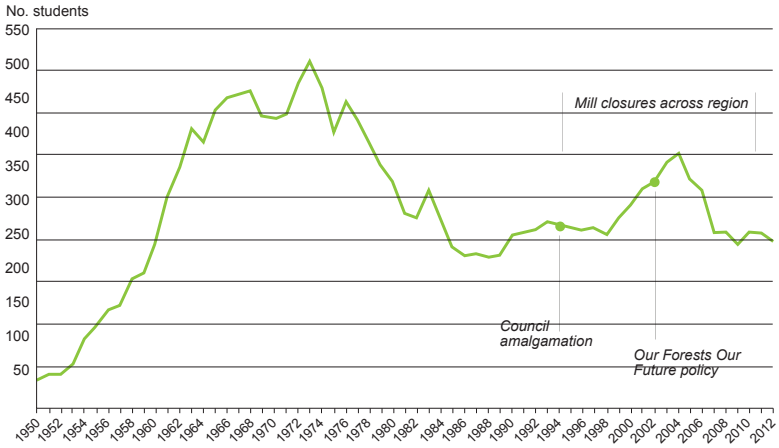
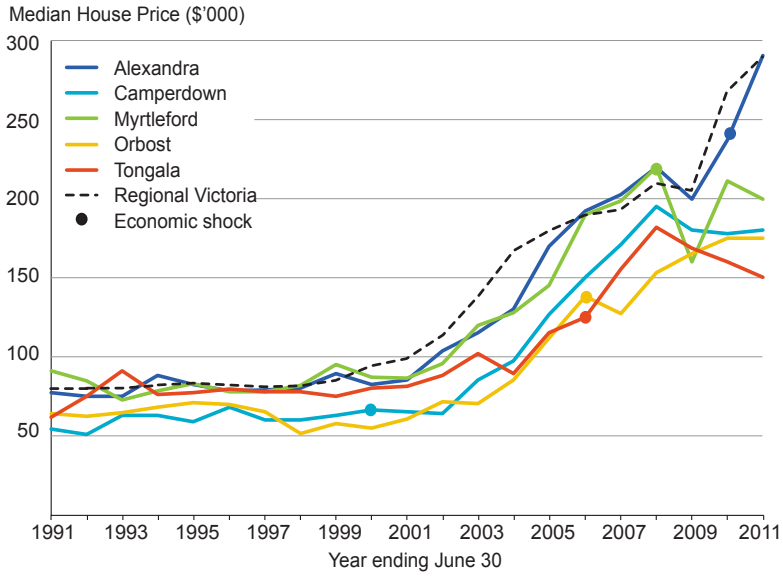


Figure 4. Median house prices in selected Victorian towns 1991 to 2011
Source: Victorian Office of the Valuer General



Unoccupied dwellings in Melbourne: How many and where?

The 2011 Census is a snapshot of Australia from the 9th of August 2011, and every dwelling in Australia is included in the collection of the Census data. On census night, a large number of dwellings are vacant for a range of reasons: the owners might be elsewhere on the census night; some are second homes or vacant rental properties; and some have been abandoned. This article will examine the spatial distribution of unoccupied homes in Victoria and consider some of the reasons for the trends and differences between areas.

In Figure 1, you can see the proportion of dwellings in metropolitan Melbourne and Regional Victoria that were unoccupied on the last three census nights.

Regional Victoria tends to have a greater proportion of unoccupied dwellings than Melbourne, partly due to the larger number of holiday houses in regional areas. Local Government Areas (LGAs) that contain popular tourist spots tend to have particularly high proportions of unoccupied dwellings. For example, Bass Coast (46% of dwellings unoccupied on Census night 2011), Mansfield (43%), Queenscliffe (52%), and Surf Coast (42%). The decrease in population of some regional areas is also likely to be a factor, because some dwellings are left unoccupied when residents depart, such as in the dry-land farming areas of western Victoria.

Figure 1 also shows that the overall proportion of dwelling stock that is unoccupied has increased since 2001 throughout Victoria. Census data also shows that this varies across different types of dwellings. For example, throughout Victoria, apartments are more likely to be unoccupied compared to houses and attached dwellings. This difference is particularly pronounced in Melbourne, as shown in Figure 2.

This may be because apartments are particularly popular with investors, and rental properties are more often empty than owner-occupied dwellings. It is also likely that apartments and attached dwellings are popular with people who use more than one dwelling and move between homes.

The three LGAs in Melbourne with the highest number of unoccupied dwellings on Census night are Melbourne and Port Phillip (12%) and Stonnington (10%). A large proportion of the dwelling stock in these LGAs is apartments and attached dwellings, compared to other LGAs.

The LGAs with the lowest proportion of dwellings that are unoccupied tend to be in areas with mostly detached dwellings. For example, on the fringes of Melbourne, Brimbank, Casey, Greater Dandenong, Hume, Knox, Maroondah, Melton, Monash, Nillumbik, and Whittlesea all had between 5 and 6% of their dwellings unoccupied on Census night 2011.

Figure 1. Percentage of Dwellings Unoccupied on Census Night

Source: ABS Census

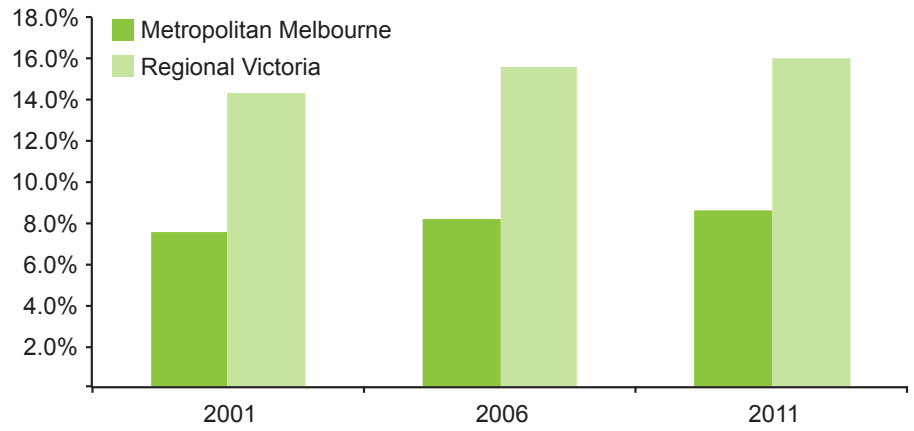
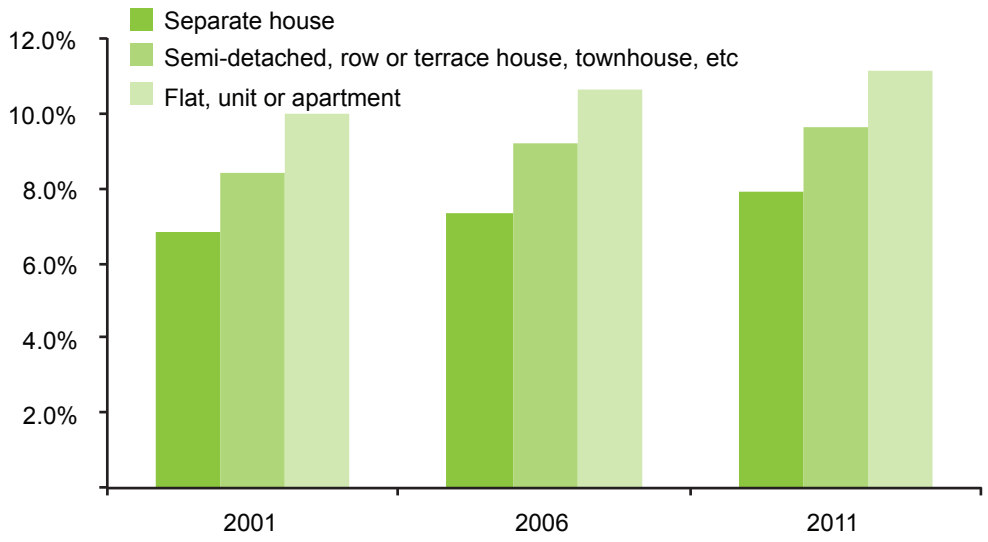


Figure 2. Percentage of Unoccupied Dwellings on Census Night By Dwelling Type - Melbourne

Source: ABS Census



Overseas Born: GCCSA and Regional Victoria

The origin of recent migrants has changed in the last 10 years. Figure 1 shows the birthplace of Victorians as recorded in the last three Censuses.

The Time Series data released recently by the Australian Bureau of Statistics (ABS) allow us to see what has been happening over the decade 2001-2011. Time Series data use the Census Enumerated Population – that is, the people in Victoria on Census night – rather than the Usually Resident Population. Nevertheless, the enumerated population does not usually differ significantly across Victoria from the usual resident population in characteristics such as birthplace. Current visitors to Australia from overseas have been removed from calculations in this table.

The table uses the new ABS labour catchment area of Melbourne, called the Greater Capital City Statistical Area (GCCSA) and is referred to as Greater Melbourne in this article. The remainder of Victoria - that is, the area outside the GCCSA - is referred to as Regional Victoria.

In this article, 'Other' countries are those countries which, on their own, have not generated enough inbound population to make the 35 in the ABS list of most commonly reported in 2006. They include various African, South American and other locations.

Figure 1 shows that:

- in 2011, almost one in three of Greater Melbourne's population was born overseas; in Regional Victoria (other), the figure was one in seven;
- over the decade to 2011, the percentage born in Australia has shown little change, with a slightly greater decrease in Greater Melbourne (from 66.0% to 63.2%) than in Regional Victoria (other) (from 85.1% to 84.4%);
- the percent born in Main English Speaking Countries has also remained relatively steady over the decade at around 7% of the total population for Greater Melbourne and 5% for Regional Victoria;
- the most significant change has been in the proportion of people from 'Other' countries going to Regional Victoria, where by 2011 they made up a quarter of the incoming population from non-English speaking countries, up from a fifth a decade previously;
- whilst most people said that they either speak English only or speak it well, in Greater Melbourne, 5% of people indicated that they did not speak English well compared with 1% in Regional Victoria. These percentages also remained steady over the decade.

Figure 1. Place of Birth of Victorians^

People in Victoria on Census night - where born	Greater Melbourne (GCCSA)			Regional Victoria outside GCCSA		
	2001	2006	2011	2001	2006	2011
% born in Australia	66.0	64.4	63.2	85.1	84.5	84.4
% born in Main English Speaking countries #	7.2	6.9	7.1	4.9	4.9	5.1
% born in Main Other countries *	16.8	17.0	19.0	4.0	3.9	4.2
% born in Other countries	4.3	4.7	5.3	1.0	1.1	1.4
% who spoke English only, well or very well (Total)	90.2	89.5	90.3	95.1	95.3	95.2
% who spoke English only	69.7	68.4	66.2	90.9	91.2	90.4
% who spoke another language but spoke English well or very well	20.5	21.2	24.1	4.3	4.1	4.8

Source: ABS, Census of Population and Housing 2011, Table T8 and Table 11; calculations exclude overseas visitors from denominator.

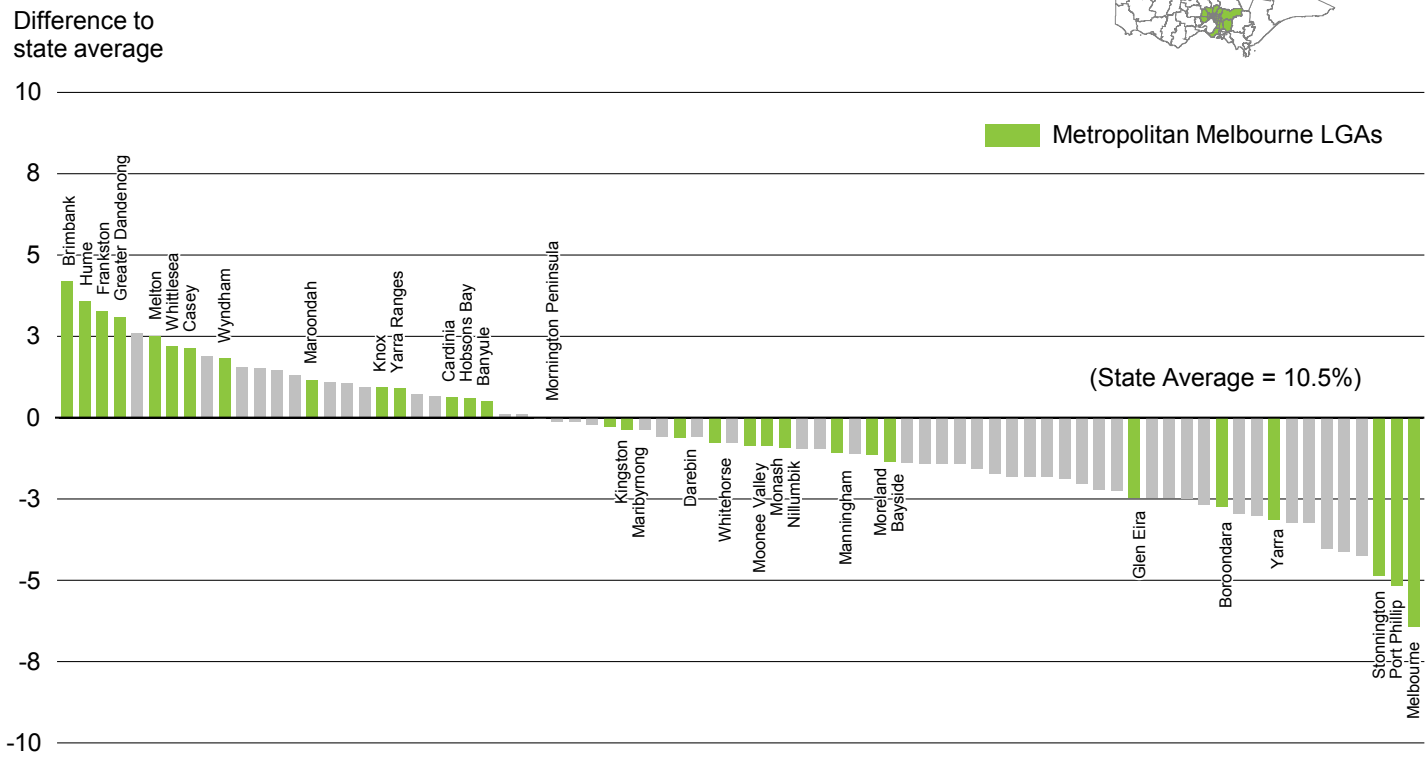
^ Time Series data use enumerated Census night population, so this table counts in a small percentage of residents who do not usually live in Victoria and leaves out a small percentage who do usually live in Victoria but were absent from the State on Census night . Overall, these differences do not usually amount to any significant change to figures such as birthplace.

Main English Speaking countries: Canada, Ireland, New Zealand, South Africa, UK and USA.

* Main Other countries: Bosnia & Herzegovina, Cambodia, China excluding SARs and Taiwan, Croatia, Egypt, Fiji, Former Yugoslav Republic of Macedonia, Germany, Greece, Hong Kong, India, Indonesia, Iraq, Italy, Japan, Republic of South Korea, Lebanon, Malaysia, Malta, Netherlands, Philippines, Poland, Singapore, other South Eastern Europe, Sri Lanka, Thailand, Turkey or Vietnam.

Xylophone charts from the 2011 Census

Figure 1. Single parent and children households in total households in 2011, metropolitan Melbourne.
Source: 2011 Census data



Following the publication of the 2006 Census, Spatial Analysis and Research (SAR) published a series of Xylophone charts to show diversity within Victoria. The charts are a visual means of showing how a Local Government Area (LGA) compares to the State average or to other LGAs in a specified region or group.

The Xylophone charts rank the 79 LGAs in Victoria for selected variables, showing the difference from the State average. LGAs within the selected group are highlighted. The groups are not necessarily of adjacent LGAs, for example 'the 10 regional cities'.

The example above in Figure 1 shows the proportion of single parent with children households in total households in metropolitan Melbourne. The chart demonstrates the diversity of metropolitan Melbourne, with LGAs at both the high and low end of the chart. For example, Brimbank has the highest proportion of single parent with children households above the state average and the City of Melbourne the lowest.

SAR has now updated and expanded the range of charts with 2011 census data.

52 different variables derived from the first and second releases of the 2011 census are presented, including age, ethnicity, education, labour force and employment. 2 different geographical groupings are displayed, including the Victorian Government regions or regions covered by each of the regional growth plans which are under preparation.

Urban and Regional Research online

View Spatial Analysis and Research (SAR) products online by visiting the Urban and Regional Research section of the Department of Planning and Community Development (DPCD) website. Read other news bulletins (including the Residential Land Bulletin and the Victorian Population Bulletin), view 2011 Census facts and figures and find the current Victoria in Future (VIF) Population and Household Projections online.

These products, the Social Atlas maps, the Xylophone charts discussed above and our contact details can be found by visiting the following URL:

www.dpcd.vic.gov.au/research/urbanandregional

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