

## THE FUTURE OF POPULATION GROWTH IN VICTORIA

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*The Victorian Department of Infrastructure has recently released a new set of population projections for all Local Government Areas and Statistical Local Areas in Victoria for the period 1996-2021. This article seeks to analyse the population projections at a broad level and evaluate the assumptions chosen. There will be a discussion of the issues surrounding the respective futures of Melbourne and regional Victoria and the factors that may result in a change to those patterns projected by the Department of Infrastructure.*

### INTRODUCTION

Any person who has ever done forecasting knows that there is a great deal of uncertainty. Yet projections are always more robust when they are grounded in reality and the assumptions that are chosen are qualified and supported by empirical evidence. Hence population change should be seen as the result of both socio-demographic and economic trends.

While often births, deaths and migration are talked about in 'demographic isolation' these trends should be linked to the economic and social situation of an area, as population trends are often indicative of broader change. This is certainly the case in Australia and Victoria where changes in birth rates, life expectancy and migration patterns are the result of shifts in the economy and society, which in turn respond to changes throughout Victoria, Australia and the world. Across Victoria, these changes also have an important geographical pattern, with substantial differences in growth rates across the state.<sup>1</sup>

This article will look at the Department of Infrastructure's population projections for Victoria and critique the assumptions chosen at the state level as well as those at the regional level.<sup>2</sup> It also aims to raise some of the issues that might be debated as a result of these projections and some actions that policy-

makers may have to consider in the future.

### POPULATION PROJECTIONS — VICTORIA

#### Assumptions and background

The Department of Infrastructure has recently completed a set of population projections for the 1996-2021 period for Victoria based on the Australian Bureau of Statistics (ABS) Series L projections.<sup>3</sup> This scenario has certain assumptions about mortality and fertility as well as overseas and interstate migration for Victoria. The Department uses a combination of three models for population projections.

These include:

- A cohort-component model — used for determining the population by age and sex as well as births and deaths
- A housing unit model — used to determine the number of dwellings, households and population (a check against the cohort - component model)
- A household type model — used for determining the size of households (Victoria only).

The assumptions for Victoria under the Series L scenario are as follows:

- Low fertility — starting at a Total Fertility Rate (TFR) of 1.76 in 1997, then dropping to 1.53 in 2006, after

- which time it remains steady to 2021
- Standard mortality — this is the only mortality assumption. It assumes greater longevity in older age throughout the projection period
- High overseas migration gain — net gain to Australia is assumed to be 90,000 persons per annum, of which Victoria receives 23.8 per cent or 21,400 persons
- Low interstate migration loss — net loss from Victoria to other states is assumed to be 3,000 persons per annum in the short term then 7,000 persons per annum to 2021

### Results of population projections for Victoria

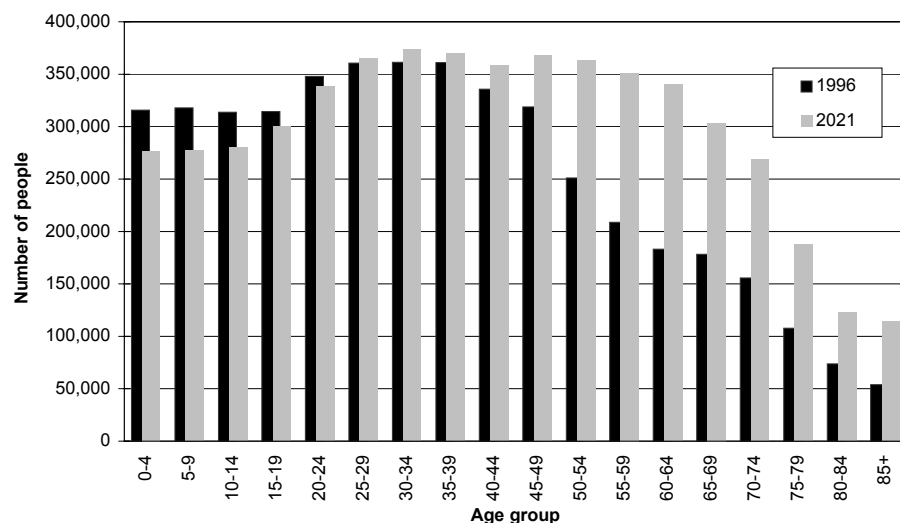
The population of Victoria is projected to grow from 4.56 million in 1996 to 5.36 million in 2021, an increase of 800,000 people. Overseas migration and natural increase will act as positive growth components, while interstate migration will act as a negative growth component. The

growth rate of Victoria is expected to slow during the period. This is a result of an ageing population and the resultant increase in deaths as well as fewer births, due to lower fertility rates. The annual rate of population growth is projected to fall from about 1 per cent in 1999 to 0.4 per cent by 2021.

The effect of this change is an ageing population with more people in the older age groups. The population aged under 18 is expected to fall by about 125,000, while the population aged above 60 is expected to increase by more than 580,000 as baby boomers reach retirement age. See Figure 1.

The increase in the older age groups will create a higher dependency ratio. Yet the increase will only be modest due to an anticipated drop in the numbers of children in the future. The ratio of persons in the non-labour-force age groups (0-14 and 65+) to those in the labour force (15-64) will rise from 0.498 in 1996 to 0.519 in 2021.

**Figure 1: Projected population in Victoria by five year age groups, 1996 and 2021**



Source: DoI, *Victoria in Future: Overview Report*, 2000

There will also be a large increase in households over the 1996 to 2021 period in Victoria. Due to a decrease in average household size from 2.68 in 1996 to 2.34 in 2021, the number of households is expected to rise at a faster rate than population. The number of households is projected to increase by almost 570,000 or an average annual rate of 1.2 per cent over the 25 year period. Nevertheless, like population, household growth is expected to slow. See Figure 2.

### Issues about the population projections for Victoria

There are various issues that are problematic about this set of Victorian projections. An exhaustive analysis of these factors is difficult within this article, but a number of the more important issues are discussed below.

#### *Fertility*

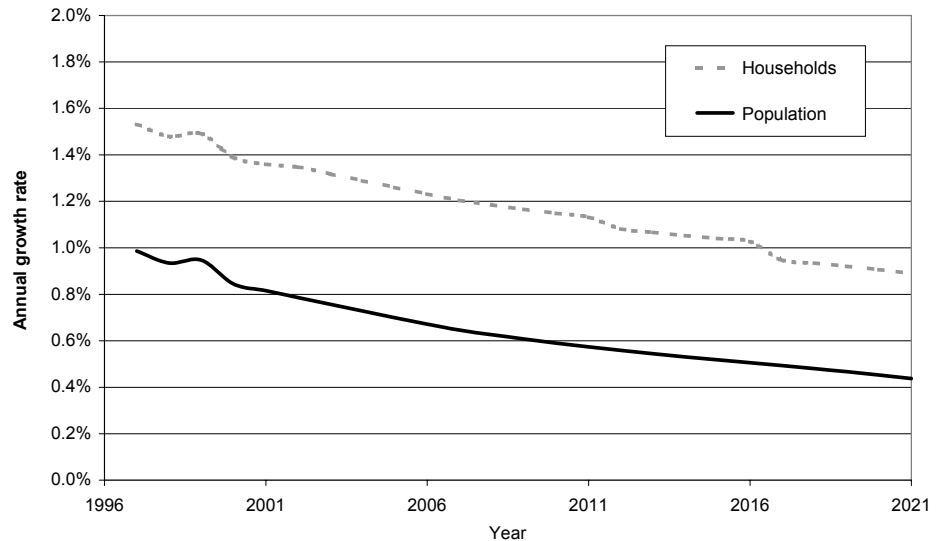
The low fertility rate chosen for the population projections is not the ABS preferred assumption. Yet the lower fertility

rate seems far more likely. There are already indications that fertility rates are decreasing at a faster rate than expected. Indeed recent estimates published by the ABS<sup>4</sup> show that the fertility rate of Victoria has fallen from 1.79 in 1993 to 1.63 in 1998. At this rate, fertility levels in Victoria appear to be nearing the projected figure of 1.53 for 2006 about five years early.

There is also a possibility that the fertility rate will simply continue to fall. Countries such as Italy and Spain have already seen their fertility rates fall to 1.2.<sup>5</sup> This continued drop in the fertility rate seems to be related to greater economic pressures, more informal relationships between couples and higher female work participation, especially in professional employment. Some authors have suggested that more people are now seeking value out of life through work and leisure and less through traditional means, such as family.<sup>6</sup>

Of course there has been some recent and timely interest within the political

**Figure 2: Projected population and household growth rate in Victoria, 1996-2021**



Source: See Figure 1.

arena to address this issue.<sup>7</sup> A number of potential policy changes could occur to facilitate greater stability in the fertility rate. These include greater support for working families, including improved access to childcare, cash and tax incentives, or industrial relations reform to allow longer and more flexible periods of maternity and paternity leave.

#### *Mortality*

The standard mortality rate was the only assumption available. Given the nature of the ageing of the population, more work needs to be done to validate this scenario.

#### *Overseas migration*

High overseas migration seems to be the most likely scenario. While migration levels vary from year to year, the past ten to twenty years has shown a relatively high overseas migration level. Between 1990 and 1995, there was a fall in the numbers of persons coming to Australia, due to a severe recession. A similar recession over the next twenty years can not be dismissed, but it is likely that higher levels of overseas migration during boom periods would compensate for any short-term decrease in migration gain. The projections assume the proportion of migrants coming to Victoria is more consistent with recent periods. See Table 1.

It was thought that net migration gain

to Australia was likely to be lower than in the past due to changes in the migration program, with less focus on family reunion and more on business migration. Yet despite the fact that the Commonwealth Government has sought to limit overseas migration gain in the last few years, the ABS estimates that net migration levels have averaged just over 90,000 per annum during this period.<sup>8</sup>

This may be partly explained by the fact that some people can enter Australia without needing visas, such as Australian residents who have been residing overseas and New Zealand citizens. The increasing number of overseas students coming to study in Australia may also have contributed to higher levels of overseas migration. Yet some doubt has been expressed about the quality of these overseas migration estimates, with some claiming that these figures underestimate and others claiming they overestimate the overseas migration gain to Australia.<sup>9</sup>

Another criticism of both the overseas and interstate migration assumptions is that they use a flat number. Hence state totals for overseas and interstate migration use the same figure throughout the projection period where a rate, based on age and sex components, might be more appropriate. There is also criticism that there is no attempt to model the economic cycle, which is so closely linked to factors such as overseas migration and interstate migration. It is fair to say, however, that this is difficult to model and sometimes even harder to explain and justify.

There are obviously a number of other arguments that suggest either higher or lower overseas migration.

Higher:

- Exposure during the Olympics will promote more business

**Table 1: Historical net overseas migration, Australia and Victoria**

Period	Estimated average annual net gain to Australia	Victoria's share (%)
1995-1999 (last 5 years)	95,000	24.0
1990-1999 (last 10 years)	83,200	25.0
1980-1999 (last 20 years)	94,200	25.7

Source: Australian Bureau of Statistics, *Australian Demographic Statistics, June Quarter 1999*, Cat. No. 3101.0

- and education migrants
- Need for more skilled workers and a potential labour shortage, especially in the long term
- The desire to promote economic growth
- An attempt to offset the process of ageing in the population (Note: this has been shown to be highly problematic.)<sup>10</sup>
- Obligations to international humanitarian relief

Lower:

- Environmental grounds — Australia's carrying capacity is already over-stretched
- Political pressure — including unemployment or a refugee crisis
- Perceived cost of immigration and other financial constraints
- Social cohesion effects of high migration

#### *Interstate migration*

Interstate migration assumptions are always controversial, as they are perceived by the states as an indicator of relative economic and social attraction. The 'low-loss' interstate migration assumption appears to be the most likely based on the current trends in interstate migration. Victoria traditionally loses population in net terms to other states. In the last two years, however, Victoria has actually gained population in net terms from other states. This compares to a net loss of more 29,000 people in the financial year 1993-94.<sup>11</sup> The improvement has been in relation to all states and territories, although Victoria has seen the biggest changes in relation to Queensland and New South Wales. While these changes are linked to the better economic performance of Victoria, it is questionable whether Victoria can maintain this

positive gain of population into the future.

This can be explained by the fact that there are real and perceived differences between states in terms of economic growth and employment opportunities through time. Hence the patterns are likely to change. According to the most recent ABS estimates, Victoria gained almost 4,000 people from other states during the 1998-99 financial year, with Victoria being a net beneficiary of population from five of the seven states and territories. While the relative economic prosperity of Victoria and specifically of Melbourne suggests that this pattern might be sustained, the obvious environmental and lifestyle attraction of Queensland continues. Indeed, despite the recent changes, Queensland has been the fastest growing state in terms of population and economic growth during the 1990s.<sup>12</sup>

#### **POPULATION PROJECTIONS — MELBOURNE AND REGIONAL VICTORIA**

##### **Assumptions and background**

The assumptions adopted for Melbourne and regional Victoria represent an affirmation of the changes that have occurred in population trends in Victoria during the 1990s. These assumptions have the population of Melbourne growing faster than regional Victoria. This is based on the idea that a large metropolis is in a better position to benefit from the further integration of Victoria and Australia into the global economy. The patterns of the 1990s are significantly different to those of the 1970s and 1980s.

The 1970s and 1980s were decades of substantial population growth in regional Victoria. For much of this twenty-year period, regional Victoria's growth rate was faster than Melbourne's. The basis for this growth was higher fertility rates,

significant net gains in intrastate migration and some gain from overseas migration. During the 1990s, regional Victoria's population growth rate has slowed significantly. This must be contrasted against Melbourne's growth rate, which has remained higher and has recently surged to be at its highest level for more than 20 years. See Figure 3.

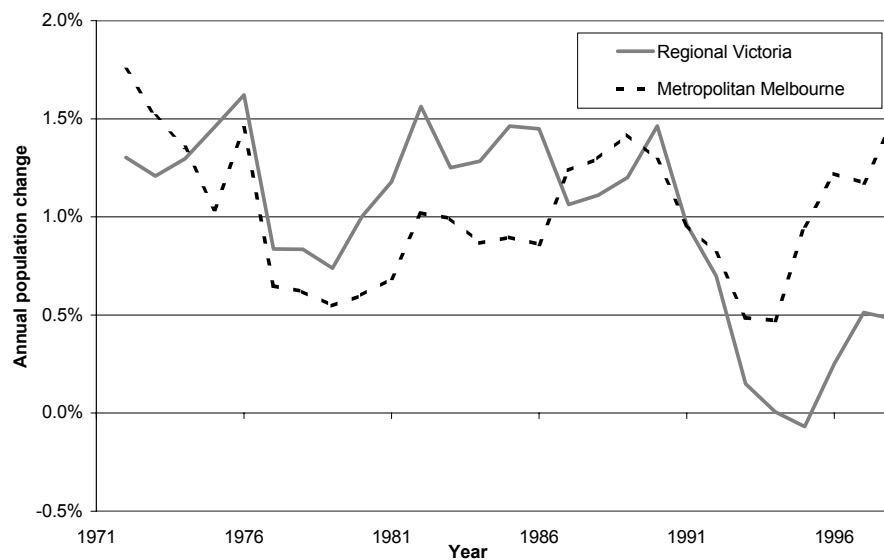
It has become common practice to blame this change on more young people leaving regional Victoria for Melbourne. This appears to be untrue. The major differences between the 1986 to 1991 period and the 1991 to 1996 period is the number of people leaving Melbourne for regional Victoria and the number of people leaving regional Victoria for other states.<sup>13</sup> Of the total difference in interstate and intrastate migration flows between the 1988 to 1991 and 1991 to 1996 periods, 42 per cent can be explained by smaller flows from Melbourne to regional Victoria, with the majority of the change in the family age

groups (0-14 and 30-49 year olds). Thirty-two per cent of this difference can also be explained by greater flows from regional Victoria to other states, which was based on greater out-flows in all age groups under 50. See Table 2.

Regional Victoria's decreased attraction during this period relates to the severe restructuring in its economy during the early to mid 1990s. While many people point to the continued rural restructuring and the historically low commodity prices, there appears to have been a slowing down in the loss of agricultural employment and an increase in manufacturing jobs.<sup>14</sup> This is an issue that has received much attention in the last couple of years, with other authors finding information to the contrary.<sup>15</sup>

The downturn in regional Victoria may relate to the sectors that had provided much of the employment growth in the 1970s and 1980s, such as health, education, business services, retailing and government. These areas had little

**Figure 3: Population growth in Melbourne and Regional Victoria, 1971-1998**



Source: ABS population estimates (various)

**Table 2: Intrastate and interstate migration flows, regional Victoria, 1986 to 1991 and 1991 to 1996**

Area	Arrivals from: 1986-1991	Departures to: 1986-1991	Net migration: 1986-1991
Interstate	42,000	57,600	-15,600
Melbourne	90,910	61,880	+29,030

	Arrivals from: 1991-1996	Departures to: 1991-1996	Net migration: 1991-1996
Interstate	38,740	71,000	-32,260
Melbourne	73,780	69,350	+4,430

Source: 1991 and 1996 Census of Population and Housing, unpublished migration matrices; Bell<sup>17</sup>

growth or decreased during the 1991 to 1996 period.<sup>16</sup> It is important to note, however, that some of these changes relate to specific and perhaps one-off changes in regional Victoria. These include the reorganisation of power production in the Latrobe Valley, the collapse of the National Safety Council in Sale, the movement of an armed regiment from Puckapunyal to Darwin and the amalgamation of regional local government. See Figure 4.

Such radical negative economic changes would not be anticipated in the

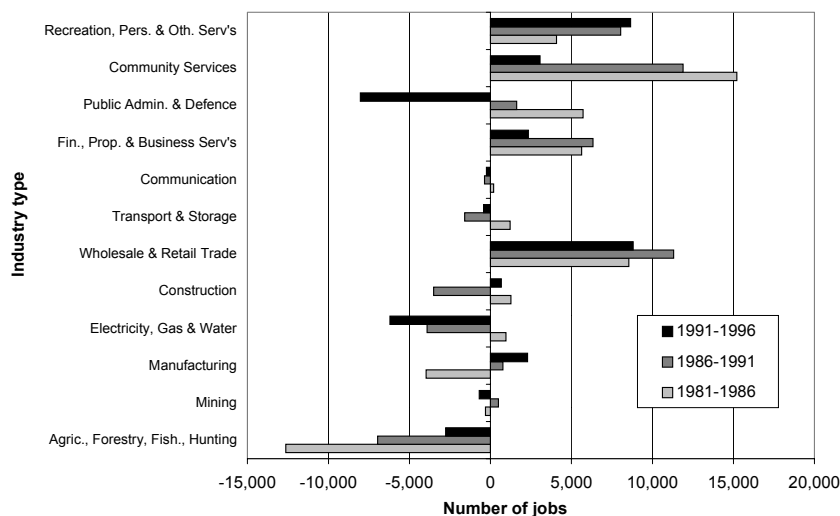
next ten years and hence some increase in regional growth rates can be supported. This would be based on lower rates of interstate migration loss and some increase in the numbers of people migrating to regional Victoria from Melbourne.

### Results of population projections for Melbourne and regional Victoria

Melbourne is projected to have the majority of Victoria's population growth in the future. The population of Melbourne is projected to grow from 3.28 million in 1996 to 3.93 million in 2021, an increase of 650,000 people or an average annual rate of 0.7 per cent. This compares with regional Victoria, which is expected to increase by 150,000 people to 1.42 million in 2021, an average annual growth rate of 0.4 per cent.

Overseas migration and natural increase will drive the population growth of Melbourne, while interstate and intra-state migration are expected to be a

**Figure 4: Change in employment by industry sector, Regional Victoria, 1981-1996**



Source: Department of Infrastructure, 1999

source of population loss. Regional Victoria is likely to grow marginally due to overseas migration (7.4 per cent of total net gain) and to gain population through intrastate migration. Interstate migration is also expected to be a source of population loss for regional Victoria.

Both Melbourne and regional Victoria will be affected by the ageing of the population and the drop in fertility rates, with an increase in deaths and fewer births. Indeed by the end of the period, regional Victoria is expected to have negative natural increase.

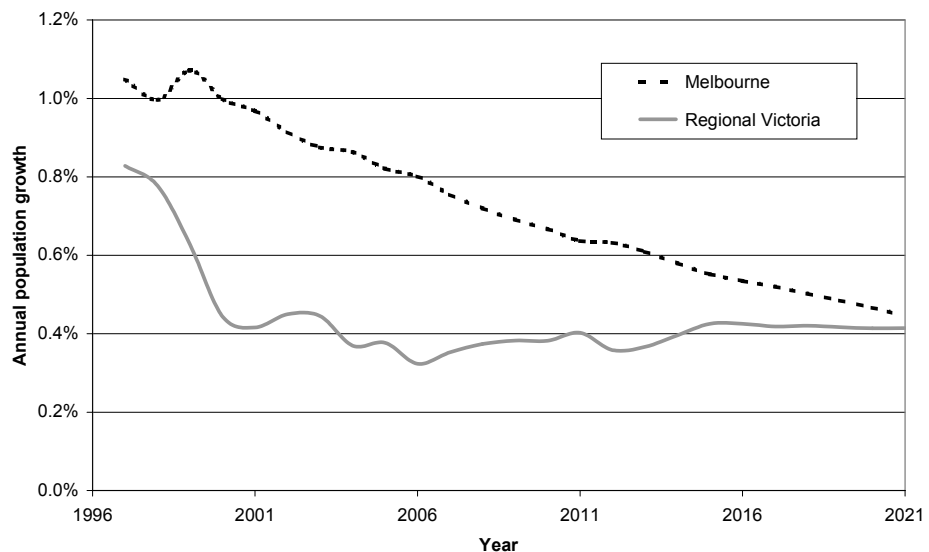
Consequently the population growth rate in Melbourne will be higher than regional Victoria. However, the differences between the rates will diminish through the period. This is due to factors such as increased number of retirees moving to regional Victoria and fewer young people moving to Melbourne from regional Victoria. It is assumed that the

net gain of population to regional Victoria from Melbourne will increase from about 3,000 per annum in 2000 to more than 7,000 per annum by the end of the projection period. It is also expected that areas on the fringe of Metropolitan Melbourne will maintain strong rates of growth as Melbourne expands geographically. See Figure 5.

Regional Victoria will be more affected by ageing than Melbourne. The regional population aged under 18 is expected to fall by about 76,000, while the population aged above 60 is expected to increase by more than 205,000 as the baby boomers reach retirement age.

The greater ageing of regional Victoria compared to Melbourne is mainly a result of the projected intrastate migration patterns. Regional Victoria is expected to continue to lose young people to Melbourne (school leavers and those in their early 20s), while gaining people

**Figure 5: Projected population growth rate, Melbourne and Regional Victoria, 1996-2021**



Source: DoI, *Victoria in Future: Overview Report*, 2000



from Melbourne, aged in their 50s and 60s. The increase in the older age groups will mean a higher dependency ratio in regional Victoria than in Melbourne. The ratio will rise from 0.588 in 1996 to 0.641 in 2021.

Melbourne will also experience loss in the younger age groups, with those aged less than 18 set to fall by about 49,000. The population aged above 60 is expected to increase by more than 381,000. Although a large increase in retirement aged population is expected, the dependency ratio is only projected to rise marginally from 0.466 in 1996 to 0.48 in 2021. This is due to an equally significant increase in the working age population in Melbourne and a drop in the 0-14 age group. See Figure 6.

The nature of demographic change over the 1996 to 2021 period means that there will be more small households. This is likely to be more noticeable in regional

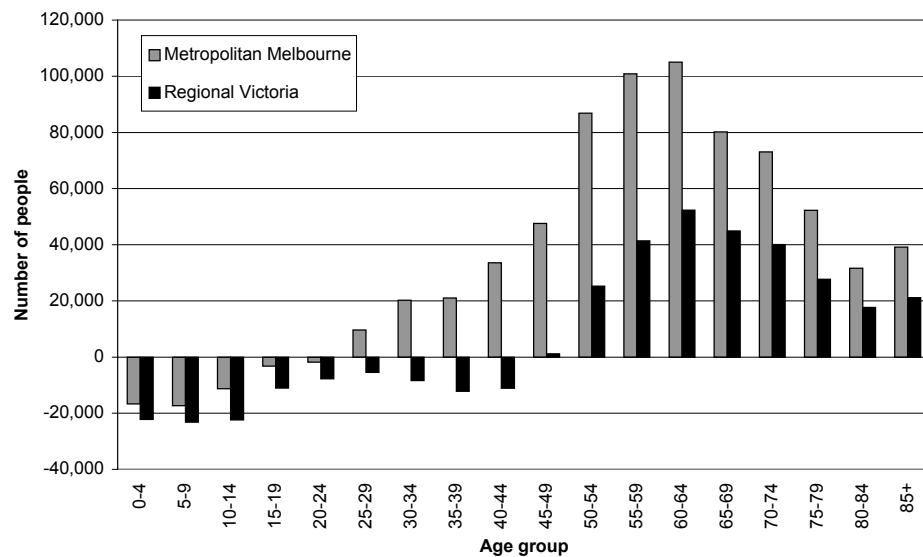
Victoria where the average household size is expected to fall from 2.62 in 1996 to 2.21 in 2021. Melbourne's average household size is also expected to fall from 2.70 in 1996 to 2.39 in 2021.

### Issues of population projections for Melbourne and regional Victoria

The nature of population change means that there could be significant variations to that projected for Melbourne and regional Victoria. Some of these are likely to affect Melbourne and some regional Victoria.

The regional Victorian economy can be highly volatile. In the last few years, several large projects and investments have been announced. These include the establishment of a large aluminium business park at Portland, the opening of the Fulham Correctional facility just outside Sale, a multi-million dollar investment in paper production in Latrobe Valley and a

**Figure 6: Change in age structure, Melbourne and Regional Victoria, 1996-2021**



Source: DoI, *Victoria in Future: Overview Report*, 2000

new call centre at Bendigo. Despite these positive announcements, there has been little to suggest that regional Victoria as a whole has 'turned the corner'.

Significant employment growth would certainly be a major incentive for people to move from Melbourne to regional Victoria. Past trends would suggest that the groups moving would be mainly comprised of people in the family age groups. This change would mean less ageing in regional Victoria than is currently projected, as retirees would be accompanied by more people in their thirties and forties with their children.

Given the recent political backlash at governments at the state and federal levels, there is likely to be government interest in regional investment in the next few years. There are already a number of proposals to invest in infrastructure in regional Victoria, particularly in highways and high-speed rail links, which would provide greater opportunities for people to commute to Melbourne from regional Victoria. The number of people travelling from regional centres to Melbourne to work is relatively small at the moment (with the exception of Geelong).<sup>18</sup> However there could be a significant increase in the future if the speed and frequencies of service are improved and if they can compete more effectively with Melbourne's suburban services.

This point is, however, highly contentious. Greater links in transport and telecommunications provide an opportunity to integrate regional Victoria further into the global economy, which may promote greater employment, investment and wealth generation. Yet greater connections between Melbourne and regional areas may also have adverse effects. Improved access to Melbourne might mean less retail expenditure in regional

Victoria and even a greater opportunity to centralise services in Melbourne.

Unlike regional Victoria, Melbourne's population growth rate is less likely to be affected by such geographically specific economic change. As Melbourne represents more than 70 per cent of Victoria's population and is the major economic focus of the state, population change is more likely to follow the general economic well being of the state. Indeed the State's current economic and population boom seems to be based primarily on the relative strength of Melbourne's economy.<sup>19</sup> The nature of Melbourne in its role as an international and interstate 'gateway' means that any changes to the immigration intake from overseas or the attractiveness of Victoria to such migrants may result in a greater or lesser growth rate.

The price of housing in Melbourne has been rising rapidly over the last two to three years. There is a possibility that more people will be forced to the fringe and to regional Victoria, particularly if interest rates continue to rise from their relatively modest current rate. Indeed many people, especially retirees, may cash in on their housing equity in the inner and middle suburbs of Melbourne and move further into the outer suburbs of Melbourne or to regional Victoria.

If any of these possibilities eventuate, it is likely that internal and international migration patterns will change in both numbers and in age characteristics. As the degree of ageing is expected to be greater in regional Victoria, it is possible that there may be greater population movements than are currently anticipated. For example additional people may be needed to provide for a population that is increasingly out of the labour force and health-care dependent.

## CONCLUSION

Population projections give us a window into the future. They may not always show us what we want to see, but they allow decision-makers to foresee inevitable change. Population projections also provide the opportunity for planners in government and business to act to avert possible negative future outcomes.

One trend which is essentially inevitable over the coming decades is ageing. However the ageing of the population will not be even across Victoria or Australia. Many areas will continue to need new 'young' infrastructure, such as maternal health clinics and primary schools. Yet many more areas will need facilities that cater for middle-aged adults and the elderly. This is an especially important issue for regional Victoria. The process of ageing is likely to be exacerbated by the expected decrease in fertility rates, although this will ensure that dependency ratios do not increase dramatically.

One of the great challenges of this ageing process will be managing the transition from a relatively youthful population to one where older people are more numerous. Obviously the ageing of the population has implications in terms of cost to the community and the ability

to provide services. Yet there is also the probability that older people will have much more electoral power and that policies may change to reflect this situation.

Melbourne is likely to have higher rates of population growth than regional Victoria in the future, based on its large overseas migration intake and higher rates of natural increase. However during the period, increased intrastate migration loss to regional Victoria should close the gap. The lower rates of population growth in regional Victoria have already provoked interest from many in both state and federal governments. The promotion of economic and employment growth in regional Victoria is likely to be the subject of many policy decisions made by government in the immediate future.

## Notes

The views expressed are those of the author and not of the State Government of Victoria.

A range of products and services are available from the Department of Infrastructure. The contact details are as follows:

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## References

- <sup>1</sup> Department of Infrastructure (DOI), *Methodology and Assumptions*, 2000
- <sup>2</sup> The future distribution of population within Melbourne and regional Victoria is obviously very important, but beyond the scope of this discussion.
- <sup>3</sup> *Population Projections: 1997 to 2051*, Australian Bureau of Statistics (ABS), Cat. no. 3222.0, Canberra, 1998
- <sup>4</sup> ABS, Cat. no. 3101.0, *Australian Demographic Statistics: June Quarter 1999*, AGPS, Canberra
- <sup>5</sup> United Nations, *1997 Demographic Yearbook*, United Nations, New York, 1999
- <sup>6</sup> P. McDonald, 'Contemporary fertility patterns in Australia: first data from the 1996 Census', *People and Place*, vol. 6, no.1, 1998, pp. 1-12
- <sup>7</sup> G. McManus, 'ALP package aims to boost birth rate', *Sydney Herald Sun*, 19 December 1999
- <sup>8</sup> *Australian Demographic Statistics*, op. cit.
- <sup>9</sup> The Department of Immigration and Multicultural Affairs in conjunction with the ABS have commissioned a review of category jumping and its impact on net overseas migration and population estimates. Siew-Ean Khoo and Peter McDonald from the Australian National University will be undertaking this work.

- <sup>10</sup> R. Kippen, 'A note on ageing, immigration and the birthrate', *People and Place*, vol. 7, no. 2, 1999, pp. 18-22
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