

# POPULATION CHANGE AND INTERNAL MIGRATION IN AUSTRALIA

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## INTRODUCTION

The paper attempts to explore short-distance and long-distance migration in Australia. Typically short-distance moves are regarded as motivated by housing preference while longer-distance migration primarily by employment considerations. Longer-distance migration typically between regions or states as well international migration is widely researched and discussed in policy formulation. Short-distance migration has not received much attention and it is a relatively neglected field of research. Relocation of a household to a neighbouring suburb involves change of location of housing but it does not always involve change of employment and thus it is a partial migration. On the contrary, longer-distance migration invariably involves change of employment and housing and it is not taken lightly.

Short-distance migration may not change the population of a city or a region but it is an important element in city planning and policies for housing. Short- and longer-distance migration by definition is the movement that occur 'within' or 'across' geographical areas. For example, the Census of Population and Housing conducted by the Australian Bureau of Statistics every five years collect household address of the usual place of residence five years ago. People who have lived in the same address five years ago did not move. For people who have lived in a different address five years ago, the change of usual address is computed based on the Statistical Local Area (SLA) from where they moved to the current address. Move to a different address within the same SLA does not involve move in or out to a different SLA and thus treated as short-distance migration where the move occur within SLA. This type of mobility of households within the SLA is important for provision of services, physical and social infrastructure. Longer-distance migration includes move out of one SLA into another. The destination could be a few kilometers away from the previous address within the same city or few hundred kilometres away within the same state or territory or to a different state within Australia. Depending on the location of previous and current address, mobility could be categorised into two major types and they differ from each other on several grounds. Longer-distance migration is the major source of population growth and decline of regions and states and it has received attention of demographers and urban and regional planners. International migration is another type of migration that affects net population in cities and regions. This paper attempts to bring out the nature and extent of short- and longer- distance migration in Australia between 2001 and 2006. It highlights the nature and quantum of internal migration rather than the final state of net population. It argues for a nuanced understanding of mobility at different scales and its consequences for urban and regional planning.

## METHODOLOGY

The objective of this paper is to investigate the population structure of Australia at a disaggregated scale and its' linkages with internal migration and demographic change. The framework is based on a 'migration path' relationship, which captures the direction of internal migration leading to demographic growth or decline. This issue is important because the interdependencies between regional areas and cities are major factors affecting the growth prospects of Australia.

The information used in this investigation consists of census data collected and published by the Australian Bureau of Statistics (ABS) on five-year intervals. Starting with 1996 Census of Population and Housing, the ABS has continued to publish census tables and associated geographies in a spatial format, which facilitate spatial analysis of population statistics in a Geographical Information System (GIS). The demographic change analysis reported in this paper is based on the analysis of Australian Bureau of Statistics (ABS) Census of Population and Housing data for 2001 and 2006.

## POPULATION CHANGE

Australia is a highly urbanised country with about 80% of the population living in urban areas. Australians in general enjoy a high quality of life. The average life expectancy of men is 79 years and women 84 years,

with the average life expectancy of the population at 81.4 years. Australia has the second highest life expectancy in the world (ABS, 2009). About one-third of South Australia's population live in towns and regional areas outside the capital city (ABS, 2007). This proportion has remained approximately the same for the last 20 years. While some towns and regional areas rich in natural resources and minerals grew faster than the rest of the state during the last 10 years, the population of many regional areas is gradually declining. This is partly due to demographic changes, ageing and declining opportunities in farming, grazing and other traditional employment sectors in regional areas (Baum et al., 2010; Bill et al., 2008; Newman, 2005; O'Connor, 2001).

While the primary impact of demographic change may be focussed in a region, its effects might also be felt in other regions and metropolitan cities. The population growth in Australia currently stands at 1.3% and is among the highest in OECD countries. It is also equal to the overall rate of global population growth (Hugo, 2005, 2006). While the focus of government policies and deliberations have been mainly about cities and international migration as a source of growth, internal migration and economic prospects of small- and mid-sized towns and regional areas play a significant role in achieving balanced growth. The population of Australia has been growing at 1.3% per annum and international migration over the recent years has contributed to about half of the net population growth (Government of Australia, 2010). Excluding international migration, the annual rate of growth of population will be about 0.7 percent per annum, which is just about at the replacement level.

Freeing the labour market and operating an effective immigration, as well as the economic reforms of the past two decades have created a cosmopolitan society. In 2006, over a quarter of the population were born abroad and an increasing proportion of migrants are from non-European countries. Australia is among the very few developed countries that successfully managed to avert the recent global financial crisis (The Economist, 2011). Though the rate of economic growth has marginally dipped, the unemployment rate in Australia has remained at about 5.0%, which is an enviable record compared to double digit unemployment levels in the U.S and several European countries.

The optimum size of the population of Australia is a contested issue. A notional of 50 million people by 2050 advocated by former Prime Minister Kevin Rudd was perhaps the beginning of the prolonged debate on the population target. It led to a series of government reports and policies. In 2010, the Federal Government released an issues paper on 'A Sustainable Strategy for Australia'. The primary objective of this report was to ensure changes in Australia's population (size, growth rate, composition and location) are compatible with the sustainability of our economy, environment and communities (Government of Australia, 2010). Several other reports on closely related issues were released soon after, including the National Urban Policy (Government of Australia, 2011), and the Intergenerational Report (Government of Australia, 2010). In general, large companies in mining and finance sectors favoured a steady growth of population through immigration to maintain a supply of labour. The public opinion on the 'large' Australia is divided and it continues to influence public policy.

Consider Figure 1, which presents the population of states and territories in 2001 and 2006. The statistics are compiled from the estimated resident population by the ABS for 2001 and 2006. It excludes temporary visitors, but includes Australians temporarily out of their usual place of residence and hence, is more accurate data (ABS, 2006). Over the five years to 2006, the population of Australia has increased by 1.284 million. This amounts to 1.32 percent growth per annum. About half of that growth is attributed to immigration (Baum et al., 2010; Hugo, 2006). However, the rate of population change across states and territories vary significantly. Queensland recorded the highest growth of 12.73% over the five years. Western Australia, Victoria and Northern Territory recorded above 5% growth over the same period, whereas New South Wales, South Australia and the National Capital Territory gained less than 5% population increase. The general obsession with the overall population masks enormous variation within the country. Why such notable differences occurred will not be addressed within the scope of this paper, but it is worth taking note of the variations that affect several states. The table also presents the percentage of population in states and territories by age groups, namely 0-64 and 64 and over. At the national level, a marginal decline of 0.5% in the 0-64 age group resulted in the increase of the older age group by 0.5%. The proportionate decline of the 0-64 age group is more even across the states, than the population change between 2001 and 2006. Northern Territory and ACT, however, are exceptions.

The higher rate of population increase in some states, notably in resource rich Western Australia and Queensland, has in part resulted in a dramatic increase in average house prices (Dusansky and Koc, 2007; Hansen, 2006; Murphy, 2011; Willams, 2009). It should be noted that the subprime loans which triggered the financial crisis in the U.S. in 2008 did not occur in Australia, even though house prices in almost all major cities in have increased steadily since 2002 (Hansen, 2006; Murphy, 2011; Murphy and Watson, 1995;

Schiller, 2007; Shiller, 2007, 2009). An uneven population growth leads to high cost of housing and general deterioration of housing affordability.

Table 1. Population change of States and Territories, 2001-2006.

State/Territory	Population			Population ages 0-64 (%)		Population ages 65 and above (%)	
	2001	2006	Change (%)	2001	2006	2001	2006
New South Wales	6,575,217	6,816,087	3.66	86.9	86.5	13.1	13.5
Victoria	4,804,726	5,126,540	6.70	87.0	86.6	13.0	13.4
Queensland	3,628,946	4,090,908	12.73	88.4	87.9	11.6	12.1
South Australia	1,511,728	1,567,888	3.71	85.4	84.9	14.6	15.1
Western Australia	1,901,159	2,059,381	8.32	89.0	88.2	11.0	11.8
Tasmania	471,795	489,951	3.85	86.2	85.4	13.8	14.6
Northern Territory	197,768	210,627	6.50	96.3	95.4	3.7	4.6
Australian Capital Territory	319,317	334,119	4.64	91.4	90.5	8.6	9.5
Other Territories	2,584	2,379	-7.93	96.3	94.6	3.7	5.4
<b>Australia</b>	<b>19,413,240</b>	<b>20,697,880</b>	<b>6.62</b>	<b>87.5</b>	<b>87.0</b>	<b>12.5</b>	<b>13.0</b>

Source: Author's analysis of Census of Population and Housing 2006, Australian Bureau of Statistics.

The population in several developed countries is ageing, with the literature on ageing is vast (Smith et al., 2008; United Nations, 2009). Ageing in Australia and its' impact on housing and age care support facilities has been extensively studied by researchers and the Federal Government (see for example, ABS, 2009; AHURI, 2008; Golob and Hensher, 2007; Green and Sawyer, 2010; Hugo, 2006; Hugo et al., 2009; Maestas and Zissimopoulos, 2010; Productivity Commission, 2011). The cost of the Government budget to fund age care facilities and social support for the ageing population has become a policy issue, with serious financial and welfare implications. The percentage of population of the age 65 and above has increased from 0.5% to 13.0% in 2006 and this trend is likely to continue into the foreseeable future. For example, a recent estimate by the Government put the percentage of population aged 65 and above at 25% by 2030 (ABS, 2008; Government of Australia, 2010).

Australia's population is ageing because of the combined effects of increased longevity and decreased fertility. These demographic changes are producing economic, social, and personal challenges for Australian society, for families and individuals. This is causing a number of issues for the Government. The implications of an ageing society have increasingly become a focus of research, policy and debate in Australia and in many other countries: developed and developing. At international, national and state levels there have been policies and strategies developed that focus on the "challenges and opportunities" facing the country in relation to its ageing population.

The majority of this focus has centered on the fiscal implications of providing retirement incomes and projected increasing costs to the healthcare system. Astonishingly, less attention is paid on other aspects of ageing, such as planning, housing and factors contributing to ageing healthily. Ageing is a critical issue for the states' housing systems as it affects the level of demand for housing and the unique nature of the demand. In addition, the suitability or unsuitability of housing as the population ages influences the demand for support services and care in the community.

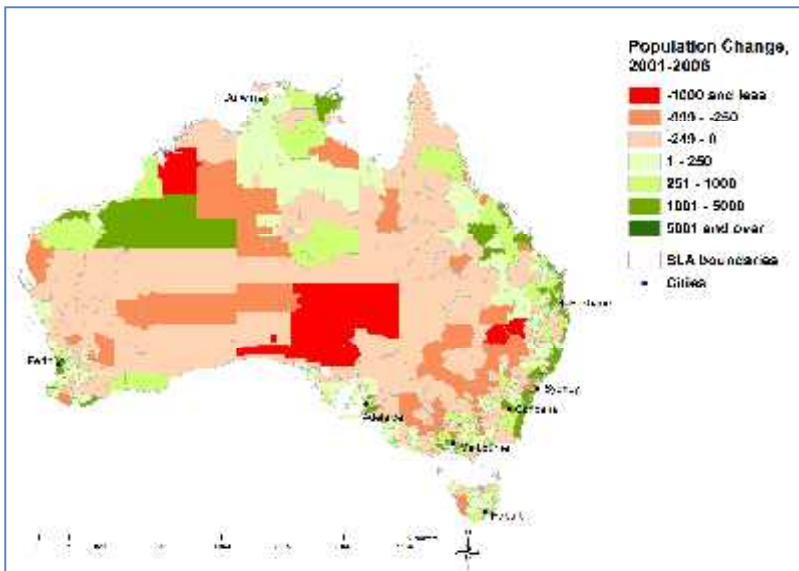


Figure 2. Population change in Australia by Statistical Local Area (SLA), 2001 - 2006.  
Source: Author's analysis of Censuses of Population and Housing 2001, 2006.

The baby boomer generation will enter older age with different aspirations and high expectations (National Strategy for an Ageing Australia 2001, Beer, et al 2006). They are likely to demand for greater services and various housing options. Beer, et al (2006) argued that previous generations had relatively modest aspirations in retirement, whereas baby boomers are expected to have higher aspirations with respect to their quality of housing, use of services, travel and recreation. The leading edge of the baby boomer generation will pass the age of 65 in 2011 (Beer, et al 2006). The housing preferences of this group will differ from earlier generations, as will their capacity to achieve them. There is another argument that this generation has to sell their family homes in order to fund living after retirement (McKinnon 2005). Baby boomers have been strongly associated with the 'Sea Change' and 'Tree Change' phenomena (Burnley and Murphy 2004, Salt 1994). Their aspirations will also either have a direct and/or indirect impact on housing and urban development policies.

The net population change by states and territories presented above masks significant regional variations across Australia. Figure 2 illustrates population changes at the Statistical Local Area (SLA) level, aiding in understanding the spatial patterns of population change. Most of the SLAs located on the coastal belt from Melbourne through to New South Wales, Brisbane and further north, have mostly gained population over five years from 2001 to 2006. This is the same case with SLAs located closer to Perth, Adelaide, Darwin and Hobart. In other words, large urban centres and regions surrounding urban areas have also gained in population. The highest rate of gains over 5000 in population indicate a sharper spatial pattern along the eastern coastal regions.

The most striking finding is the general decline of the inner regions of Australia away from state capitals. Even though the combined population of SLAs outside metropolitan regions in every state constitute smaller proportion of the state's population, the contiguous pattern of this population loss is a matter of serious concern. Very few SLAs in interior parts of the states and territories have gained population. In other words, the net population gain varies enormously where population in regional areas shift to towns and cities. Even the Murray Darling basin, the wheat bowl of Australia, has lost significant population over the five years between 2001 and 2006. Based on the figure alone it is difficult to generalise the cause of such decline in rural and regional Australia. But anecdotal evidence supports the claim that people in regional Australia, especially farmers and grazers, are facing challenging times and are vulnerable to the vagaries of nature. It is worth noting that the prolonged drought in Australia in 2002, which continued for nearly seven years, has created havoc for the survival and prosperity of regional Australia (Draper, 2009; Government of Australia, 2010; Nelson et al., 2010). It is ironic that in the same period, urban Australia experienced a property boom. Minerals rich regions, notably in Western Australia and Queensland, gained economic prosperity (Baum et al., 2010; Newman, 2005; O'Connor, 2001; The Economist, 2011). The continuation of this trend, for example, the rapid and widespread growth of population in regional Australia, has several adverse consequences for the environment. This has also caused problems for people who have left rural parts of the country, and settling in towns and cities where they may not have adequate skills to actively engage in productive economic activities (Semple et al., 2010; Stimson, 2001). 'The Future of Rural and Regional Australia' was one of the themes of the Australia 2020 Summit held in April 2008. How the recommendations

of this summit translate into practical policies for the benefit of rural and regional populations is yet to be seen.

## **INTERSTATE MIGRATION**

The economic incentive to move within the country may well depend on differences in real income. Regardless, this gap is very large. Even if it is presumed that population growth within coastal towns and cities is increasing the disparity within Australia, it seems unlikely that this incentive would significantly change economic opportunities and income levels in the short run.

What causes the current pressures to migrate within Australia and what is the direction of the migration? The job-worthy people who move to towns and cities are hardly to be seen as impoverished created by the sheer pressure of regional areas. It could be argued that the explanation for increased migratory pressure owes in part to the dynamism of urban areas, than to just the declining prospects in regional areas. To try to explain the increase in migration pressures by the growth rate of the urban population in the coastal regions is to close one's eyes to the deep changes that have occurred and are occurring in the Australian economy, as well as ignoring the rapid internationalisation of the production, trade and economies that accompany these changes.

The preceding section provided a general analysis of population change and some of its causes. The direction of migration is important in its own right. The decision to move is a major decision for individuals and families and the direction of the movement is a proxy to the relative opportunities that exist at a given time. The attraction and economic strength and associated costs of living are some of the factors of that choice (UN-Habitat, 2008; UN Population Division, 2008; United Nations, 2011). Almost all states and territories in Australia seek to attract young and economically productive people from within and outside the country.

Figure 3 depicts the observed interstate migration of population across all states and territories. The charts display patterns of domestic migration, for example, the movement of people among states and territories. They show gains or losses only from the people who move from one state to another, and not from births, deaths or movement from other countries, which are the other sources of population change.

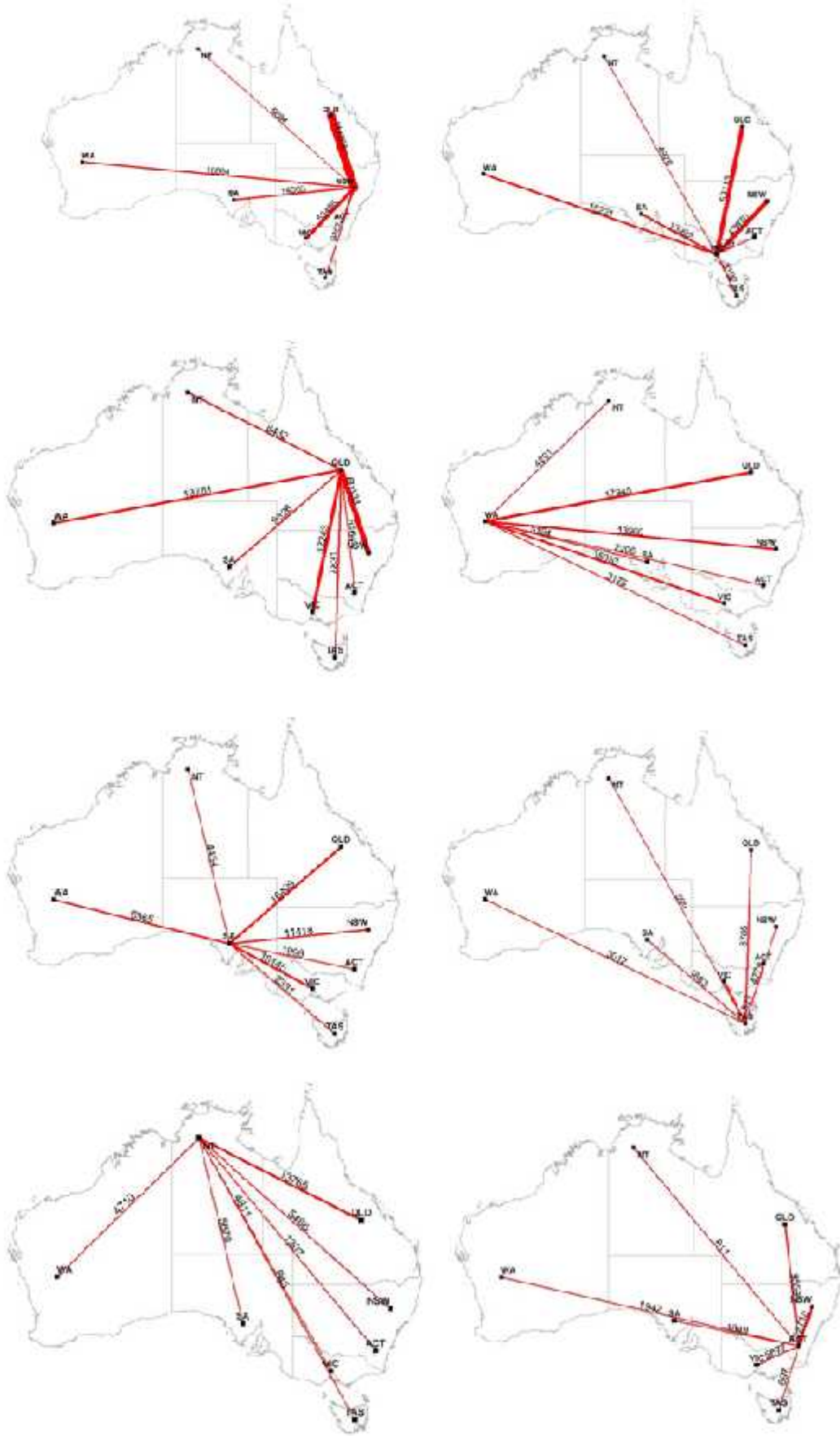


Figure 3. Interstate migration flows to states and territories, 2001-2006. Left to right from top NSW, VIC, QLD, WA, SA, TAS, NT, ACT.  
 Source: Author's analysis of place of usual address five years ago, Census of Population and Housing 2006, Australian Bureau of Statistics.

Even though the causes of migration within a state may be identical to interstate migration, the emphasis of this discussion is to highlight the broader population shift across states and territories. The ABS began recording interstate migration in 1971-72 (ABS, 1998). The results are based on the analysis 'place of residence five years ago' data recorded in 2006 Census. The data is available at the SLA geography that helps to assess migration and derive regional flows as shown above. The figures represent attraction 'to' states and territories from outside the state and thus capture inward migration to respective states and territories.

The aggregation of flows to and from all states and territories is presented in Figure 4. The top left figure depicts inward flows into New South Wales (NSW). Queensland (QLD) is the major source of interstate migration, followed by Victoria (VIC), Western Australia (WA), South Australia (SA), Tasmania (TAS) and Northern Territory (NT). QLD and NSW contribute to nearly an equal number of flows followed by WA and SA (Top right). The highest number of people who move into QLD is from NSW, followed by VIC, WA, SA, NT and TAS. The flow into mineral rich WA is more even, as no one state contributes for an overwhelming dominance. The migration to WA from other states and territories perhaps involves the longest distance within Australia. QLD accounts for about 18,000 people whereas a slightly less proportion (13,900 people), is from NSW. Unlike NSW, WA, though growing at a faster rate than any other state, does not attract a massive number of people from any particular state or territory. A roughly equal number of people migrated to SA from QLD and VIC. Unlike NSW and VIC, no other state or territories seem to have a single dominant source of flows.

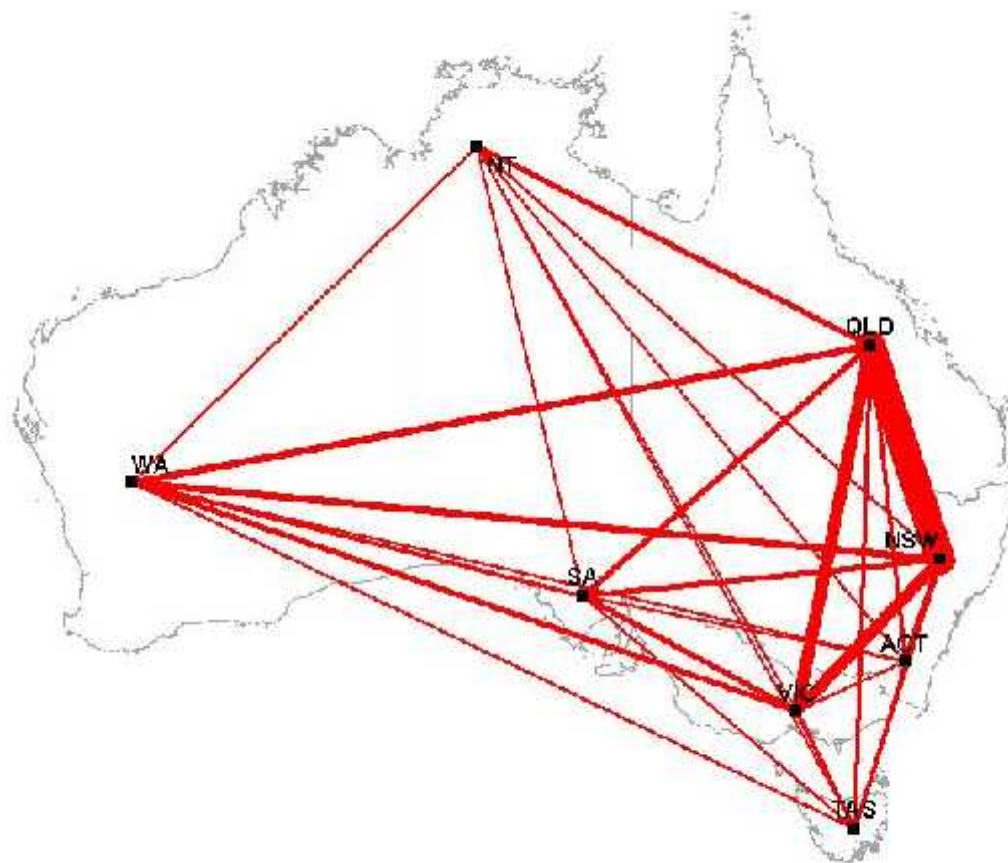


Figure 4. Gross migration flows to and from states and territories, Australia, 2001 -2006.

Note: See Table 2 for detailed statistics on migration flows.

Source: Author's analysis of Census of Population and Housing 2006, Australian Bureau of Statistics.

There are important regional differences in migration that warrant scrutiny for policy development. It should be noted that even the slow growing states like SA and TAS attract a sizable flow of people from other states and territories. The numbers, though small in comparison to larger states, cannot be discounted as insignificant. The mere fact that these states (SA, TAS, and NT), have the capacity to attract people from elsewhere within the country indicate potential for economic development and growth. It could also be

inferred that the warmer climate of QLD as an attractive destination for retired baby boomers, as often portrayed in literature, is less strong than what is believed to be the case. The results presented above beg further investigation into the causes of flows at state and territory level towards the development of state level economic policies.

Figure 4 depicts the aggregate flows of interstate migration, which includes in and out migration. In other words, it indicates the measure of spatial dependency of mobility. Flow to and from QLD and NSW stand as the single largest sector of mobility. Based upon the population size of VIC, one would expect the flow between NSW and VIC to be the strongest sector. This is not the case. Approximately, flows between VIC and the two states of QLD and NSW combined are comparable to the flow over the QLD-NSW axis. The proximity and relative population size of states appear to have significant influence, but this does not explain the fuller picture; WA though furthest from the rest of states has a stronger pull factor.

Table 2 presents the flow of interstate migration depicted in Figures 3 and 4. In addition, it includes migration exclusively within the states and territories. The combination of interstate and intrastate flows help in the understanding of the greater picture of mobility within Australia. The numbers in rows represent migration flows that originate from a state destined to all states and territories, including the state of origin. Thus, it includes flows that occurred exclusively within the state. It is equally significant as the interstate flows as these results cause an impact on the destination are the same as interstate flows.

The figures in the last row indicate the total inflow excluding the flow from within the state. The figures in the column 'Moved Out of the State to Other States' is the sum of interstate flows excluding intrastate flow. To make reading easier, the intrastate flows are shaded. The difference between the row total and the number in the aforementioned column depict the net gain or less shown in the last but second column.

The table presents some interesting patterns. For example, the flow from NSW to VIC (53,456) and the flow in the opposite direction (VIC-NSW at 43,970) is not insignificant. Moreover, intrastate mobility within NSW, (at over a million people), is as significant as the interstate flow from the same state.

Table 2. Intrastate and Interstate Migration Flows 2001 – 2006.

From \ To	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	OT	MOVED OUT OF THE STATE TO OTHER STATES	GAIN / LOSS
NSW	1,056,840	53,456	141,266	14,003	18,864	9,467	5,884	24,845	122	267,907	-105,372
VIC	43,970	864,398	52,113	13,992	15,221	8,192	4,976	5,539	36	144,039	-8,091
QLD	60,134	32,243	957,882	9,326	13,761	7,831	8,432	6,164	62	137,953	121,932
SA	11,418	16,145	16,409	292,202	6,365	2,331	4,454	1,996	7	59,125	-7,593
WA	13,900	15,353	17,945	5,194	397,291	3,175	4,291	2,206	232	62,296	2,066
TAS	4,779	8,233	8,785	1,683	3,012	61,838	699	827	16	28,034	4,717
NT	5,466	4,811	13,765	5,670	4,710	845	30,005	1,207	8	36,482	-6,912
ACT	22,710	5,677	9,559	1,649	1,942	897	811	59,686	33	43,278	-33
OT	158	30	43	15	487	13	23	49	0	818	-302
MOVED INTO THE STATE FROM OTHER STATES	162,535	135,948	259,885	51,532	64,362	32,751	29,570	42,833	516		

Source: Author's analysis of Australian Demographic Statistics 2010; Censuses of Population and Housing 2001, 2006.

The population size of states and territories in 2006 and their relationship to intrastate migration is nonlinear. For example, intrastate migration in VIC, the second biggest state, at 864,398, is much smaller than intrastate migration in QLD, which has about one million less population than VIC. QLD and WA, two states with apparently booming minerals and mining sectors, do not show strong intrastate migration. As stated earlier, the scope of this paper does not extend to identifying the causes of mobility, but it worth acknowledging the differences in intrastate mobility across states and territories.

The net gain/loss shown in the last column of Table 2 is of significant measure. NSW accounts for the largest net loss of people because of interstate flows, with QLD the largest net gainer of population. This finding is reported by several researchers (for example, Bill et al., 2008; Birrell et al., 2005; Hugo, 2005), but this analysis provides details of that final state of population mobility. QLD, WA and TAS are the three states that recorded a net gain of population, with all other states and territories having lost population. Even though both NSW and VIC have lost population, the net loss of population of NSW at 105,372 is staggeringly high



compared to VIC, which recorded a loss of just 8,091 people. With or without immigration from overseas, QLD will continue to grow whereas NSW and to a lesser extent VIC and TAS, will lose population.

## CONCLUSIONS

This paper presented the internal mobility of population within Australia and it does include immigration from overseas. It brought out net migration and flows to and from states and territories. The findings also highlighted the need to distinguish migration and direction of migration instead of merely focusing our attention to population gain or loss. Net gain or loss of population of a city or a state is the outcome of mobility at several levels of geography and each type of migration require scrutiny of causality. Short-distance migration need to be brought into urban and regional planning and policy framework to aid planning and development of sustainable cities and regions and promote quality of living at local level. Findings of migration flows at macro scale depict uneven economic opportunities across the country that warrants long-term spatial population and settlement policy.

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