

Paper delivered at the 10th Biennial Conference of the
Australian Population Association
POPULATION AND GLOBALISATION:
AUSTRALIA IN THE 21ST CENTURY
Melbourne 28th November to 1st December 2000
Melbourne Australia

Sydney: Its labour market, housing market and internal migration between 1986 and 1996

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Abstract

Many factors influence the decision of a person or household to migrate from one place to another. Previous research and migration theory suggests economic motives, such as search for employment and improvement in housing conditions are key factors that drive people to move. Therefore labour and housing markets play an important role in the migration process. The reasons for migration can be inferred from the characteristics of migrants. Hence the individuals and households migrating to and from Sydney Statistical Division in the 1991-96 inter-censal period were compared to highlight the pull and push effect of Sydney's labour and housing markets respectively.

This paper also reports on the changing relationship between internal migration to and from Sydney and the city's labour and housing markets between the late 1980s and early 1990s. Analysis of unpublished Census data revealed that the net internal migration loss of people from Sydney in the early 1990s was half of what it was in the late 1980s.

When looking at the labour force status and income of individual migrants it is evident that this decline in net loss was not uniform. A stronger labour market in Sydney, relative to the rest of the country, resulted in a substantial decline in net losses of employed people and of individuals on low weekly incomes. In addition, net losses of people on higher incomes in the 1986-91 period changed to net gains in the 1991-96 period.

As Sydney lost fewer people to the rest of the country through internal migration, the city also lost fewer households in the 1990s. Changes in type of migrant households showed that smaller households were leaving Sydney between 1991-96 compared to the previous inter-censal period, as there was a large decrease in out-migration of households comprising couples with children. These changes may be linked to the fact that housing in Sydney became more affordable in this period, due to a lower rate of increase in house prices and a drop in housing loan interest rates. Therefore both improved labour and housing markets in Sydney influenced changes in internal migration flows to and from the city between the 1986-91 and 1991-96 periods.

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1. Introduction

The relationship between Sydney's labour, market, housing market and internal migration is complex. This first half of the paper explores the influence of the two markets on migration, especially the pull effect of Sydney's labour market and push effect of the housing market. Analysis of unpublished Census internal migration data on the 1991-96 inter-censal period was expected to show that the differential components of migration inflows and outflows of individuals would reveal the attraction of certain migrants to the Sydney's labour market. Similarly, differences in the characteristics of in-migrant and out-migrant households would show that those moving out are more likely to be pushed out of expensive housing in the city.

Temporal changes in labour and housing markets also affect internal migration flows. The second half of the paper looks at how this may have contributed to the substantial retention of people and households in Sydney between the late 1986-91 and 1991-96 inter-censal periods. In particular the paper examines whether the city retained a large number of people and households in the early 1990s due to a stronger pull of the labour market as well as a weaker push of the housing market.

The results reported in the paper are part of a two-year project on the role of housing in internal migration to and from Sydney. The Commonwealth Government and NSW Landcom must be thanked for funding this project as part of the 1999 Strategic Partnership with Industry Research and Training Scheme. A research report on intra-national migration of individuals to and from Sydney between 1986 and 1996 has been published, and may be consulted for more detailed findings from the first stage of the project (Mukherjee 2000).

2. Population retention in Sydney in the early 1990s

In the 1991-96 period, the population in Sydney Statistical Division (SD) increased by 208,000, which was not much different to that in the previous inter-censal period. Natural

increase (births minus deaths) accounted for almost 70% of total population increase in Sydney in the late 1980s and early 1990s (Table 1). While total population change and natural increase were similar, the composition of total net migration (net overseas migration plus net internal migration) was quite different in the two periods.

Table 1 : Components of population change in Sydney Statistical Division, 1986-96

Inter-censal period	Natural Increase	Net migration			Total population increase
		Overseas	Internal	Total	
1986-91	132,000 66%	211,000 103%	- 139,000 -68%	72,000 35%	204,000 100
1991-96	143,000 69%	132,000 63%	-67,000 -32%	65,000 31%	208,000 100

Sources: Burnley (1996b), McKracken (1999), NSW DUAP (1997)

In the 1986-91 inter-censal period, high overseas immigration and comparatively lower migration out of the country meant that net overseas migration to Sydney was quite high. Although overseas migration continued to be the main cause of population increase in Sydney in 1991-96 as in 1986-91, its contribution in terms of numbers was about one third lower. The other significant change was a decline in net migration loss from Sydney to the rest of Australia.

Table 2 shows that net internal migration from Sydney declined by more than half between the two periods. This was the result of a small increase in arrivals to the capital city and a substantial decline in departures from the city. Therefore more people chose to remain in Sydney in the early 1990s rather than move out. The change in internal migration from the city meant that Sydney's average annual growth rate remained constant at about 1.1 per cent between the 1986-1991 and 1991-1996 inter-censal periods, and grew at a faster rate than the remainder of New South Wales in the latter period (Nugent 1999).

Table 2: Internal migration flows of individuals, Sydney Statistical Division, 1986-96

Internal migration flows	1986-91	1991-96	Change
Arrivals	156,000	169,000	+8%
Departures	295,000	235,000	-20%
Net	-139,000	-67,000	-52%

Figures rounded up to the nearest thousand and may not add up due to rounding
Sources: ABS, 1991 and 1996 Census of Population and Housing, customised tables

While supply and demand in the labour market is related to the number of individuals, the number of households determines housing demand and supply is according to the number of dwellings. Analysis of internal migration at the individual and household level can provide a clearer picture of the influence of both Sydney's labour and housing markets on migration.

Since there was a substantial decline in the number of people leaving Sydney between the two periods, it was expected that Sydney would have retained a large number of households. In the Census a household is defined as a group of two or more related or unrelated people who usually reside in the same dwelling and make common provision for food or other essentials for living. A household can also include a person living in a dwelling who provides for his/her own self, without combining with any other person (ABS 1996: 172). Migration of households is identified by the change in usual place of residence of the household reference person (the household member who forms a relationship with other members of the household – discussed in more detail at a later stage). Changes in internal migration flows of household reference persons shows that the net loss of households between 1991 and 1996 was much smaller than that in the earlier inter-censal period (refer to Table 3). However the drop in the net internal migration loss of households was smaller than that of individuals.

Table 3: Internal migration flows of households, Sydney Statistical Division, 1986-96

Internal migration flows	1986-91	1991-96	Change
Arrivals	34,000	38,000	+15%
Departures	76,000	62,000	-17%
Net	-42,000	-24,000	-43%

Figures rounded up to the nearest thousand and may not add up due to rounding
Sources: ABS, 1991 and 1996 Census of Population and Housing, customised tables

A marked change in both population and household internal migration flows over a ten-year span suggests that there may have been changes in Sydney's labour and housing markets between the late 1980s and early 1990s which affected the relative attractiveness of living in Sydney compared with elsewhere in Australia. This will be investigated at a later stage, but first, the fact that more people and households migrated from Sydney than to the city in both the late 1980s and early 1990s indicates that there are strong push factors as well as some weaker pull factors at work in city. The paper now looks at what these pull and push factors are, with a particular focus on the pull of Sydney's labour market and push of housing market.

3. The push-pull model of migration

The push-pull model of migration sees people being driven out of some areas by low wages, unemployment and pulled to other areas by their superior opportunities (Goodrich 1936). Push factors (or negative factors) are situations or factors at the origin that give rise to dissatisfaction with the present location of an individual or household, precipitating a decision to move. Pull factors (or positive factors) are factors at the destination attracting migration. The push and pull factors are different for every individual and also vary with time frame under examination.

A similar concept of the push-pull model was of 'attractors and attracted', proposed by Maher and Stimson (1994). Attractors are the particular characteristics of regions that attract population. They include an appealing environment at the destination, differential economic opportunities related to employment, cost of living and access to services, social networks and lifestyle. It is proposed that each location will have a mix of these attractors that may appeal differently to different types of individuals and households, and can act either to bring people into the region or to retain the existing population.

The attracted are individuals who make decisions about moving long distances and can be divided into two groups, initiators and reactors. Initiators actively seek change in their personal circumstances, usually relating to employment, housing and lifestyle, amenity or social contacts. They are also referred to as being footloose and attracted by opportunities at the destination (pull factors). Reactors respond to events or processes that prompt or necessitate a move. They may be migrants who are moving involuntarily, such as those who

have been transferred in their job, whereas initiators are more likely to be voluntary movers. Typically reactors respond to deteriorating or changing circumstances at the origin (push factors).

Within a push-pull framework, Burnley (1988) suggested a modified paradigm for migration from Sydney to coastal areas in New South Wales between 1976 and 1981. He proposed that negative economic factors and environmental dis-amenity at the origin (Sydney) encourage migration to the coastal zone, while employment growth and cheaper housing are pull factors, in the case of people of labour force age. Older people are more likely to be attracted to aesthetic, environmental and recreational factors in coastal areas. He also mentioned that the migration process depends on the characteristics of migrants. For example migrants in the labour force place a higher value on certain pull factors at the destination (labour market opportunities and high incomes) compared with non-labour force migrants (lifestyle, kin and peer networks).

A push-pull model could be applied to migration between Sydney and the remainder of Australia between the 1991-96 inter-censal period. Firstly, migration to Sydney is hypothesised to be mainly the result of economic push and pull factors. Limited access to education and/or unemployment at different origins may push people out, while a stronger labour market in Sydney pulls people to the city. Initiators are likely to dominate the inflows to Sydney and include young adults, the educated, qualified and people in the labour force.

As Sydney experiences a net loss of population and households to the rest of the country, push factors in Sydney and pull factors at other destinations are also at work. Push factors in Sydney include high housing costs, while a pull factor at the destination could be inexpensive housing and a better lifestyle. A second hypothesis in this paper is that households migrating from Sydney are pushed out of the city and in turn pulled to their destination by cheaper and better quality housing. These households are more likely to be reactors, that is, family households with low incomes, seeking to live in cheaper rental accommodation, to purchase or own their own home. Although the paper focuses on the role of housing in internal migration to and from Sydney, it must be acknowledged that housing may not be the primary factor in a household's migration decision, as lifestyle related reasons have also been shown to be important in previous research.

The pull of Sydney's labour market and push of the city's housing market will be examined in more detail in the next two sections. To test the above hypotheses, this discussion will be followed by an empirical investigation of the characteristics of migrants and their housing conditions.

3.1 The pull of Sydney's labour market

Many researchers have commented on the growing economic divide between cities and regional areas in Australia. A study on country-city differentials carried out by the Productivity Commission (1999) found that by some measures (employment status, level of qualifications and household income), people in country Australia had lower incomes to those in the cities and the difference appeared to be increasing. Secondly educational attainment was lower, although there was a higher proportion of people with vocational training. Thirdly, the majority of country areas appeared to have household incomes below the national average, while most capital cities had above average incomes.

A similar study by Baum *et al.* (1999) rated communities on a opportunity-vulnerability continuum, based on factors such as labour force status, income levels, occupational structure, human capital, presence of socially disadvantaged groups, incidence of housing assistance and financial stress. It provided evidence that the vulnerable communities in Sydney are relatively better off than are those in other cities and that the city's global and national functions are 'pulling up' the performance of communities throughout the metropolitan city region.

Global economic restructuring has resulted in differences in the type of employment offered in Sydney, in relation to other labour markets around Australia. Globalisation of the world economy has led to Sydney becoming a 'command and control' centre (Searle 1996), as indicated by the clustering of head offices of related industries in the city, especially of finance and other specialised firms (O'Connor *et al.* 1996, 1998 and Sassen 1994). Table 4 shows employment in finance, property, business, recreational, personal and other service industries in Sydney has continually increased, while that in the traditional mining and manufacturing industries has fallen. It follows that that there was a strong growth in the well paid managerial, professional, and associate professional occupations in Sydney between

1981-96, followed by weaker growth in clerical, sales and service jobs. On the other hand, the number of blue-collar jobs fell during that period (Forster 1999).

Table 4: Employment by industry type, Sydney, 1986-96 (000s)

Industry type	1986	1991	1996	% Change	
				1986-91	1991-96
Agriculture, forestry, fishing	11.6	10.0	11.3	-14	+13
Mining	5.3	4.4	3.4	-17	-23
Manufacturing	243.6	219.0	214.8	-10	-2
Electricity, gas & water	27.8	19.0	11.0	-32	-42
Construction	88.7	94.7	107.0	+7	+13
Wholesale & retail trade	285.0	303.4	331.8	+6	+9
Transport & storage	88.2	84.8	86.6	-4	+2
Communication	33.9	29.5	40.6	-13	+38
Finance, property & business	208.7	241.0	311.7	+15	+29
Public administration & defence	80.0	77.3	66.0	-3	-15
Community services	238.7	262.7	259.1	+10	-1
Recreation, personal & other	89.4	109.4	180.0	+22	+65
Not classifiable/Not stated	54.7	108.0	52.3	+97	-52
Total	1,455.6	1,563.3	1,675.6	+7	+7

Source: NSW DoP (1995: 130), ABS (1996b)

It is likely that young adults are more likely to migrate as a result of differences in access to education or employment opportunities at the origin and destination. The human capital theory of migration states that in order to benefit from future returns, people voluntarily acquire education, training, spend time searching for a job with the highest possible rate of pay and/or migrate to take advantage of better employment opportunities (Becker 1993, Blaug 1980). The theory suggests that people have more to gain by moving when younger. McKenzie (1994: 46) also outlined that in Australia “perceived disparities between urban and rural living are an important factor in rural out-migration, especially for young people. Facilities for secondary, technical and tertiary education are concentrated in urban areas”, and “limited access to local educational facilities may lead to lower attainment of tertiary or trade qualifications for rural residents”.

3.2 The push of Sydney's housing market

It is well known that housing in Sydney is more expensive than elsewhere in Australia and differences in the cost of housing between an origin and destination can drive migration. Median rents in Sydney are high compared to most other areas in Australia. A survey of public and private rental tenants in 1994 revealed that renters in Sydney, with a median weekly rent of \$152, paid the highest median rent of any of the other capital cities (ABS 1994). Median house prices in Sydney are also higher than prices in the other capital cities. The presence of housing cost differentials across Australian cities has been related to the broader structural change occurring in Australia, such as that mentioned in the previous section Maher (1994).

Many researchers have implied that there is a relationship between high housing costs in Sydney and the net internal migration loss from the city, especially the large out-migration from Sydney between the mid-1980s and early 1990s. Flood (1991, 1992) related high migration from Sydney between 1985-86 to the exceptionally high housing costs in Sydney. Wulff and Bell (1997) attributed the large net internal migration loss of low-income households and unemployed from Sydney between 1986 and 1991, to the relatively cheap housing available in non-metropolitan locations. Burnley (1996b) also noted that a consistent trend in the 1980s was the association between net internal migration, median house prices and median rents. Net internal migration losses from Sydney were higher in Statistical Local Areas (SLAs) with elevated house prices and rents, which indicated that persons migrating from the more affluent areas may have capitalised on their property assets as they migrated.

The importance of housing in the migrant decision-making process was explored by Walmsley *et al.* (1995, 1998), through a survey of 75 households that had migrated to Ballina and Coffs Harbour. Firstly over half of the adult household members questioned had migrated to these areas from Sydney. Secondly, families with children and the retired dominated the inflows to these areas. The findings also indicated that households had traded up to better housing conditions as 44% of the respondents ended up in a bigger dwelling and there was an increase in the proportion of households purchasing and owning homes after they had migrated. The latter was related to “the fact that many migrants came from the more expensive Sydney housing market and were thus able to increase their housing equity as a result of the move” (Walmsley *et al.* 1998: 113). The improvement in housing, that is a move

to better value-for-money housing in a cheaper real estate market, was especially evident among migrants who had originated from Sydney.

Stimson *et al.* (1996) carried out a similar survey of 299 households that had migrated to the Gold Coast. The majority of these in-migrant households was from other parts of New South Wales and was couples with or without children. Over a third earned below \$20,000 per annum, about half had annual incomes below \$30,000 while a comparatively lower proportion of households had incomes above \$55,000 when resident in the Gold Coast. Household structure by dwelling tenure of migrant households revealed that over 50% of couples with or without children were purchasing a home in the study area and almost 30% were outright owners of their home. The presence of elderly retirees who were outright owners of property in the Gold Coast was also evident. Thus it is clear from the above studies of migration that the cost and quality of housing in Sydney is likely to be an issue for people migrating from the capital city.

However there are certain limitations of using this micro-level approach to looking at migration, as conclusions are drawn from population sample surveys. One problem is accurately defining migration flows. Using the 1984 and 1991 electoral rolls, Walmsely *et al.* (1998) considered people to have migrated if new names appeared at an address where the same surname had not previously appeared. This may also have occurred due to marriage dissolution in a household. The female partner may have been at the same address during both elections, but her name on the 1991 electoral roll would be different to the earlier one because of the change over from her married to her maiden surname.

The cost of housing is likely to be an issue for households migrating from Sydney if their characteristics reflect a bias towards those whose housing demands are highest. Differences in the characteristics of households that migrate to and from the city are expected to show that families and the less affluent households are largely represented among out-migrants. Furthermore comparisons of the housing conditions of in-migrant and out-migrant are likely to show that the latter group live in cheaper and better quality housing at their destination than the former.

3.3 Methodology

The first part of the paper tests the broad hypotheses that while Sydney's labour market pulls certain migrants to the city, the housing market pushes others out. Customised internal migration matrices derived from the Census of Population and Housing were used as supporting evidence. Although Census data did not provide information on why people migrate, the reasons for migration could be inferred from the type of people that moved.

The analysis of differences in the characteristics of in-migrants and out-migrants was expected to show that people migrating to Sydney take advantage of the better employment opportunities, higher wages and perhaps a better lifestyle offered in the city, than at the migrant's existing place of residence. The time frame under investigation is the 1991-96 inter-censal period. To examine the pull of Sydney's labour market, tables on internal migration flows to and from Sydney SD, cross-classified by the age, labour force status and income of individual migrants, were purchased from the Australian Bureau of Statistics.

On the other hand, the difference in components of gross in-migration and out-migration flows of households the characteristics of households was examined to look at the push effect of Sydney's housing market. It was presumed that out-migrants were more likely to consider access to low cost housing and a better lifestyle to raise children to be important when migrating from Sydney, than access to labour markets. Data on the demographic characteristics of households, such as age of the household reference person and household type, was expected to show that the majority of households migrating from Sydney were at the stage of their lives where housing needs or requirements were the greatest. In addition, the income of migrant households would show if the economically disadvantaged households were more likely to be moving out of the city.

The comparison of the characteristics of dwellings that in-migrant and out-migrant households lived in (that is, housing tenure, weekly rent, monthly housing loan repayment and number of bedrooms in a dwelling) would reveal that the latter group lived in cheaper and better quality housing at their destination. This would suggest that households leaving Sydney were pushed out of the city's housing market by the limited access to affordable and good quality housing.

There are some points that need to be taken into account when interpreting the results. Firstly, migration of people was identified in a different way to that of household migration. For an individual, migration occurred if there was a change of the person's usual place of residence compared with that outlined five years prior to the Census date, that is migration is according to census counts based on place of usual residence. For example, in-migrants (or arrivals) in the 1991-96 inter-censal period were people with their usual place of residence in Sydney Statistical Division in 1996 but who lived elsewhere in Australia in 1991. Out-migrants (or departures) included people with their usual place of residence in Sydney SD in 1991 but who lived elsewhere in the country in 1996.

Migration of households occurs when there is a change in the residence of the household reference person. In the Census, the family/household reference person indicator identifies the household member who forms a relationship with other members of the household. This person is then used as the basis for determining familial relationships between the usual residents of the household. Familial relationships are defined in terms of the relationship between all other family members and the family reference person. A family reference person must be over the age of 15 years (ABS 1996). In this study if the primary family reference person or the non-family reference person lived in a different residence compared to that outlined five years ago, the household they lived in was assumed to have moved.

It must also be noted that the internal migration flows of household reference persons, characteristics of the reference persons and dwellings they lived in, were based on census counts by place of enumeration (include overseas visitors). These counts are based on the location of these household reference persons on Census night, irrespective of their place of usual residence. Usual residence counts can only be provided for people, not households or dwellings. This is not of major concern as census counts for households and dwelling attributes are effectively based on usual residence criteria (Bell 1996).

Finally, when interpreting the results it must be taken into account that the characteristics of people reported are those at the end of the five-year inter-censal period when the migrants were resident at their destination. These characteristics may not be the same as those that applied at the time migration occurred and may have changed by the time of the Census. Other caveats of Census data include under-enumeration (Bell 1998), non-response or inaccurate responses to questions on change of place of usual residence (Bell and Stratton

1998), the presence of processing errors and introduced random errors (used to protect the confidentiality of individuals).

3.4 Results: Differences in the characteristics of in-migrants and out-migrants

There were differences in the age, labour force status and income of in-migrants and out-migrants in the 1991-96 period. In order to show the relative importance of these differences, characteristics of the migrant population were compared to the population resident in Sydney in 1996 (shown in Table 5). Three-way comparisons help to highlight disparities in the type of people that migrate to Sydney and from the city (in-migrants compared with out-migrants), and the characteristics of migrants compared with people resident in Sydney (in-migrants and out-migrants compared with Sydney residents).

Firstly, as expected, people that migrated to Sydney were younger and of workforce age than those that migrated from the city were as well as residents of the city. Greater proportions of in-migrants were aged between 15-24 (27%), compared with out-migrants and the resident population (13% and 11% point difference respectively). This was also the case in the 25-44 age group, but the difference between in-migrants and out-migrants was not as large as that between the former group and Sydney residents.

Table 5: Proportional comparisons of the economic characteristics of in-migrants, out-migrants and population resident in Sydney, 1991-96 (%)

Characteristics	In-migrants	Out-migrants	Residents
Age group	(n=168,700	(n=235,200)	(n=3,457,700)
5-14)	16	15
15-24	13	14	16
25-44	27	43	34
45-64	44	19	22
65+	12	8	13
Total	5	100	100
	100		
Labour force status	(n=144,500	(n=195,300)	(n=2,862,500)
Employed)	51	58
Unemployed	68	10	5
Not in the labour force	6	38	37
	24		
Weekly income	(n=142,400	(n=192,200)	(n=2,746,900)
<\$200)	41	27
\$200-399	28	22	16
\$400-599	18	15	21
\$600-799	21	10	14
>\$800	16	12	21
	18		

Source: ABS, 1996 Census of Population and Housing, customised tables and Cdata96
Columns may not add up to 100% as figures have been rounded to the nearest whole number
See detailed Tables 4-5 in Appendix

In contrast to the above, a greater proportion of people that migrated from Sydney were older adults (45-64 years old) and the elderly (over 65 years old) compared with in-migrants. This could have been the outflow of the retired elderly from Sydney to other alternative destinations within NSW or interstate. The greater proportions of Sydney residents in the older age cohorts, compared with migrants, demonstrate the relatively low mobility of these people. A further observation was that there was a slightly greater proportion of young children aged 5-14 leaving Sydney, compared with the proportion of in-migrants and Sydney residents in this age group, perhaps due to the out-migration of families with children from the city.

In the 1996 Census, the labour force included people aged 15 years and over who were employed or unemployed. A greater proportion of people that migrated to Sydney and were in the labour force in the city (74%) compared with out-migrants and residents (61% and 63% respectively). This was due to the substantial difference between the proportion of in-migrants and out-migrants that were employed (by 17% points) and the greater proportion of

in-migrants compared with the proportion of Sydney residents employed in Sydney (by 10% points). The relatively young population of workforce age among in-migrants and the greater employment opportunities in Sydney compared to some other areas in Australia could explain these differences.

Those who are not employed, or unemployed, are classified as not in the labour force. This includes people who are retired, pensioners and people engaged solely in home duties (ABS 1996: 184). The substantial out-migration of the elderly retired is confirmed from the results on differences in the proportion of in-migrants and out-migrants that were not in the labour force. While almost 40% of out-migrants were not in the labour force, less than a quarter of in-migrants fell in this category. The very small difference between out-migrants and Sydney residents who were not in the labour force is linked to the large proportion of people in the older age cohorts among both groups.

The second economic characteristic of migrants analysed was the gross weekly income of individual migrants and residents who were aged 15 years and over. This variable includes the various forms of social security payments and allowances, pensions, wages, salary, overtime, dividends, rents and interest received. It is the income before tax, superannuation, health insurance and other deductions are made (ABS 1996: 176).

The Census does not ask people to state their exact income but only to indicate the range into which their income falls. In 1996 the median income in Sydney was between \$300-399 per week. Income comparisons between in-migrants and out-migrants showed that while the former group had incomes over the median range when resident in Sydney, the latter earned lower incomes at their destination. A larger proportion of in-migrants had weekly incomes greater than \$400 per week (55%) compared with the proportion of out-migrants (63%). This was due to the substantial proportion of people that migrated to Sydney and were either employed full-time or part-time in the city. It also related to the relatively well-paid nature of occupations and industries located in Sydney.

In contrast there was a marked difference in the proportion of in-migrants and out-migrants with weekly incomes less than \$399. Over 60% of people that migrated from Sydney earned less than \$399 per week at their destination, while 46% of in-migrants and 43% of residents had weekly incomes in this range (17% and 20% point difference respectively). These results

are a parallel to Birrell's (1999: 41) findings on the differences in weekly income of men migrating to and from Sydney in the 1991-96 period. He concluded "those moving out of Sydney were predominantly drawn from the less affluent. A strikingly high 35% of all men aged 25-64 who left the city earned less than \$300 per week at their destination in 1996 (25,700). By contrast, only 19% of those who moved into Sydney were earning such low amounts in 1996 (9,100)."

Finally, it is evident in Table 5 that the income distribution of people that migrated to Sydney and that of residents in the city was similar, while that of out-migrants largely varied from these two groups. This would have been because of differences in the wage or salary scale and income earned from rents in Sydney compared with the rest of the country, particularly that in the non-capital city parts of the Australian States.

Employment and income differentials across Australia are therefore likely to have an effect on internal migration flows to and from Sydney. The fact that more people that migrated to Sydney were employed and earning greater incomes than people that migrated from the city is related to differences in the type of employment available in Sydney compared to other areas across Australia. The reasons for migration were also likely to have differed across in-migrants and out-migrants as their characteristics were dissimilar. The results certainly suggest that people migrating to Sydney were attracted to the education facilities and employment opportunities in the city. In contrast people migrating from the city were likely to consider cheaper housing at their destination to be important in their decision to migrate from Sydney. The latter point will be discussed in more detail in the next section.

3.5 Results: Differences in characteristics of in-migrant and out-migrant households and their dwellings

The demographic characteristics of migrant and resident households (except for age) and their income levels are shown in Table 6. Firstly, differences in the age of in-migrant and out-migrant households were similar to that of individual migrants. A greater proportion of households that migrated to Sydney had young reference persons (aged 15-24 years) and those in the family forming stage of the life cycle (25-44), compared with those that migrated from the city. Surprisingly, the difference in the former category was more marked (by 12% points) than the latter, indicating out-migration of families from Sydney did not significantly outweigh in-migration. In contrast, there was a larger proportion of older reference persons

over 45 years old in households leaving Sydney than migrating to the city, confirming that the elderly retired are more likely to sell off their property in Sydney and move elsewhere.

A second observation is that, compared to the households resident in Sydney, a small proportion of migrant households comprised couples with children while a large proportion of migrant households were lone person households. This is an indication of the lower mobility of large families and higher mobility of small households, which has been referred to by Bell (1996) and found in the 1991 Housing and Location Choice Survey (HALCS) (National Housing Strategy 1992).

Lone person and other family households (comprising other family and multiple family households) made up a larger proportion of total households migrating to Sydney (53%) compared to the proportion of these type of households migrating from the and Sydney residents (43% and 26% respectively). Other family is defined as a family of other related individuals residing in the same household. These individuals do not form a couple or parent-child relationship with any other person in the household and are not attached to a couple or one-parent family in the household (ABS 1996: 195). Multiple family households included in the 'Other family household' category, are when more than one family is present in one household on the Census night. The greater proportion of young households migrating to Sydney and perhaps living on their own when resident in the city could explain the bigger proportion of single person households migrating to the city. It is also possible that the relatively high cost of housing in Sydney forces migrant families to share accommodation, resulting in a comparatively large proportion of other family households among in-migrant households.

Rather than the relatively substantial out-migration of large families (or couples with children) from Sydney, a greater proportion of couples without children migrated from Sydney (29%) compared to the proportion of this type of household migrating to Sydney and those resident in the city (19% and 22% respectively). According to Maher and Burke's (1991) housing career ladder, these results indicate that potential home purchasers were largely represented among out-migrants while households that were more likely to live in rental accommodation moved to Sydney. This will be discussed in more detail when examining the dwelling characteristics of migrant households.

Table 6: Proportional differences in the characteristics of in-migrant, out-migrant and households resident in Sydney, 1991-96 (%)

Household characteristic	In-migrants	Out-migrants	Resident
Age of household reference person	(n=61,500)	(n=93,000)	Published data not available
15-24	20	8	
25-44	57	55	
45-64	17	25	
65+	6	12	
Household type	(n=38,300)	(n=61,700)	(3,441,100)
Family Household			
Couple with children	17	18	37
Couple without children	19	29	22
One parent family	8	8	10
Other*	19	11	4
Non-family household			
Lone person	34	32	22
Group	3	2	5
Gross weekly income	(n=15,700)	(30,600)	(1,156,600)
<\$299	11	22	18
\$300-499	16	26	15
\$500-699	11	14	13
\$700-999	17	14	17
\$1,000-1,499	21	14	18
>\$1,500	25	10	18

Source: ABS, 1996 Census of Population and Housing, customised tables and Cdata96

Note: Columns for each household characteristic may not add up to 100% as figures have been rounded to the nearest whole number

See detailed Tables 6-8 in Appendix

The third household characteristic analysed was household income, the sum of the personal incomes of each resident household member aged 15 years and over. If any household member did not state their income, or was temporarily absent, household income is not calculated. These households fall into the 'Partial income stated' category (ABS 1996: 173). In 1996 the median household income in Sydney was between \$700-999 per week.

On the one hand, of the households that migrated to Sydney, 46% were earning over the median range when resident in the city (>\$1,000 per week), compared with 24% of out-migrant and 36% of resident households. Such disparity in the proportion of in-migrant and resident households with high incomes in Sydney (by 10% points) was not evident when comparing incomes of individual migrants in the previous section. This shows the greater

capability of households that migrate to Sydney to be able to afford the high housing costs in the city perhaps due to the presence of two-income earners in the household or single person households with very high incomes.

On the other hand, while 62% of out-migrant households had incomes below \$699 per week at their destination, much smaller proportions of in-migrant and resident households had incomes at this level in Sydney (38% and 46% respectively). These results highlight that low-income households are largely represented among outflows from Sydney, similar to the results on income of individual migrants mentioned in the previous section.

Table 7 shows a comparison of the characteristics of private dwellings occupied by in-migrant, out-migrant and households resident in Sydney. Firstly, the tenure type variable describes whether households are renting, purchasing or own a dwelling in which they were enumerated in on Census night. The larger proportion of households migrating to Sydney with young reference persons (aged 15-24 years) and living in lone person households could explain the larger proportion of in-migrant households living in rental housing in Sydney (60%) compared with both out-migrant and resident households (39% and 30% point difference respectively).

This inter-relationship can be explained by the fact that rental housing is the most common tenure of choice among young migrants who leave their parental home to embark on independent living (Wulff *et al.* 1993). Secondly, the marked difference in the proportion of in-migrant and out-migrant households living in this form of tenure suggests that the relatively high house prices in Sydney may constrain home purchase, forcing people to rent in the city. However it is also possible that young adults choose to live in this form of tenure, especially if they are high-income earners.

The greater proportion of out-migrant households owning a home at their destination (38%) compared with in-migrant households (19%) could be linked to the relatively large proportion of older households and empty nesters (couples without children) leaving Sydney. The over 40% of resident households who were outright owners of their home in Sydney reflects the relatively aged population present in the city, reinforcing the age comparison of individual migrants and residents in Section 3.4.

Among the in-migrant households living in rental accommodation in Sydney, over 40% paid over \$197 per week in rent, while over 10% of out-migrant households and a third of households resident in the city paid this level of rent at their destination. The fact that even tenants in Sydney were paying lower rents compared with in-migrant households is linked to the large disparity in income of in-migrant and resident households. Households migrating to Sydney not only had higher incomes than those that migrated from the city had at their destination but also households living in the city. This relative affluence of in-migrant households means that they are capable of paying high rents in the city and internal migration may be exacerbating the differences in rent levels between Sydney and the rest of Australia.

There were also stark differences in the proportion of in-migrant and out-migrant households paying low rents. Almost 60% of households that migrated to Sydney paid less than \$197 per week in rent at their destination, compared with 67% resident households and 85% of out-migrant households (9% and 29% point difference respectively). Therefore even though almost three-fifths of in-migrant households paid less than approximately \$200 per week in Sydney, households that migrated from the city paid much lower rents at their destination.

Table 7: Differences in the characteristics of dwellings occupied by in-migrant, out-migrant and households resident in Sydney, 1991-96

Dwelling characteristic	In-migrants	Out-migrants	Resident
Tenure	(n=38,800)	(n=62,900)	(n=1,289,400)
Fully owned	19	38)
Being purchased	20	21	41
Rented (private & public housing)	60	39	23
Other/not stated/not applicable	3	3	30
Other/not stated/not applicable			6
Weekly rent	(n=22,800)	(n=24,500)	(n=397,800)
<\$107	18	37	23
\$108-197	40	50	44
\$198-307	29	11	23
\$308-397	8	1	7
>\$398	5	1	3
Monthly housing loan repayment	(n=7,100)	(n=11,900)	(n=292,100)
<\$400	7	12	9
\$401-550	6	11	11
\$551-775	12	18	14
\$776-1,000	17	21	15
\$1,001-1,200	14	14	15
>\$1,200	45	25	35
Number of bedrooms	(n=38,300)	(n=61,800)	(n=1,242,000)
0-1	15	9)
2	32	25	7
3	35	44	28
4	15	18	43
5+	4	3	18
			4

Source: ABS, 1996 Census of Population and Housing, customised tables and Cdata96

Note: Columns for each household characteristic may not add up to 100% as figures have been rounded to the nearest whole number

See detailed Tables 9-12 in Appendix

Table 7 showed that there were very minimal differences in the proportion of in-migrant, out-migrant and resident households purchasing a dwelling. However the level of monthly housing loan repayments made by the three groups varied. Compared with households that migrated to Sydney and were resident in the city (13% and 20% respectively), a larger proportion of out-migrant households paid less than \$550 per month towards their loan (23%). Similarly, while almost 40% of out-migrant households made monthly repayments between \$551 and 1,000, less than a third of both in-migrant and resident households paid an amount in this range each month.

This can be linked with the fact that a greater proportion of households migrating from Sydney had low incomes at their destination (that is, <\$699/week) compared with in-migrant households. This would mean that these households could comfortably pay \$250 or more per week (or <\$1,000/month) towards their housing loan, given the relatively low house prices at their destination. Furthermore, it is known that the out-migration of households in the family forming stage of their lifecycle from the city (that is childless couples and couples with children) outweighed the proportion of these types of households migrating to the city. Despite having lower incomes at their destination, these households were likely to be able to afford purchasing a dwelling, especially since the proportion of purchasers making low repayments was comparatively large among out-migrant households.

At the higher end of the scale, almost 60% of households that migrated to Sydney and were purchasing a home in the city paid more than \$1,000 per month in housing loan repayments compared with a half of Sydney residents and 39% of out-migrant households. Once again the relatively substantial proportion of in-migrant households with incomes greater than \$700 per week (or >\$2,800 per month) in Sydney suggests that these households would comfortably be able to afford purchasing a home in the city.

Finally an indicator of the quality of a dwelling is its size, measured by the number of bedrooms in a dwelling. In-migrant households lived in smaller dwellings in Sydney while out-migrant households lived in larger dwellings at their destination. A greater proportion of households that had migrated to Sydney lived in dwellings with two or fewer bedrooms when resident in the city (47%), compared to out-migrant and resident households (34% and 35% respectively). In contrast, 65% of households that migrated from Sydney lived in dwellings with three or more bedrooms at their destination but less than 55% of in-migrant households lived in dwellings of this size in Sydney.

In summary, differences in the characteristics of in-migrant and out-migrant households indicated that out-migrants were more likely to consider housing to be important in their decision to move from Sydney. The results coincide with the findings of Stimson *et al.* (1996) and Walmsley *et al.* (1998). They do suggest that migration is a response to housing differentials across Australia and that migration from Sydney may be driven by the inability to afford housing in Sydney. The fact that households that had migrated from Sydney paid less for their housing and lived in larger dwellings, in comparison to in-migrant households,

highlights the push of Sydney's housing market and the pull of cheaper and better quality housing at the destination.

It must be noted that the economic characteristics of individual migrants and the housing conditions of migrant households was in a time period when both Sydney's labour and housing markets were in a relatively favourable position compared to the rest of the country. The fact that Sydney's labour market was performing well compared with most other labour markets around Australia, and compared with that in the late 1980s, may have resulted in the greater proportion of in-migrants and residents employed and on high incomes in Sydney compared with out-migrants. The relevance of changes in Sydney's labour and housing markets between the 1986-91 and 1991-96 to changes in internal migration flows to and from the city will be mentioned in the next section.

4. The changing influence of Sydney's labour and housing markets on internal migration

The earlier part of this paper mentioned that Sydney retained a substantial number of people and households in the early 1990s due to the large drop in net internal migration loss from the city. Changes in economic conditions Australia-wide resulted in a more favourable labour and housing market in Sydney compared to the late 1980s, and relative to elsewhere in Australia. It is possible that this contributed to the change in internal migration flows to and from the city.

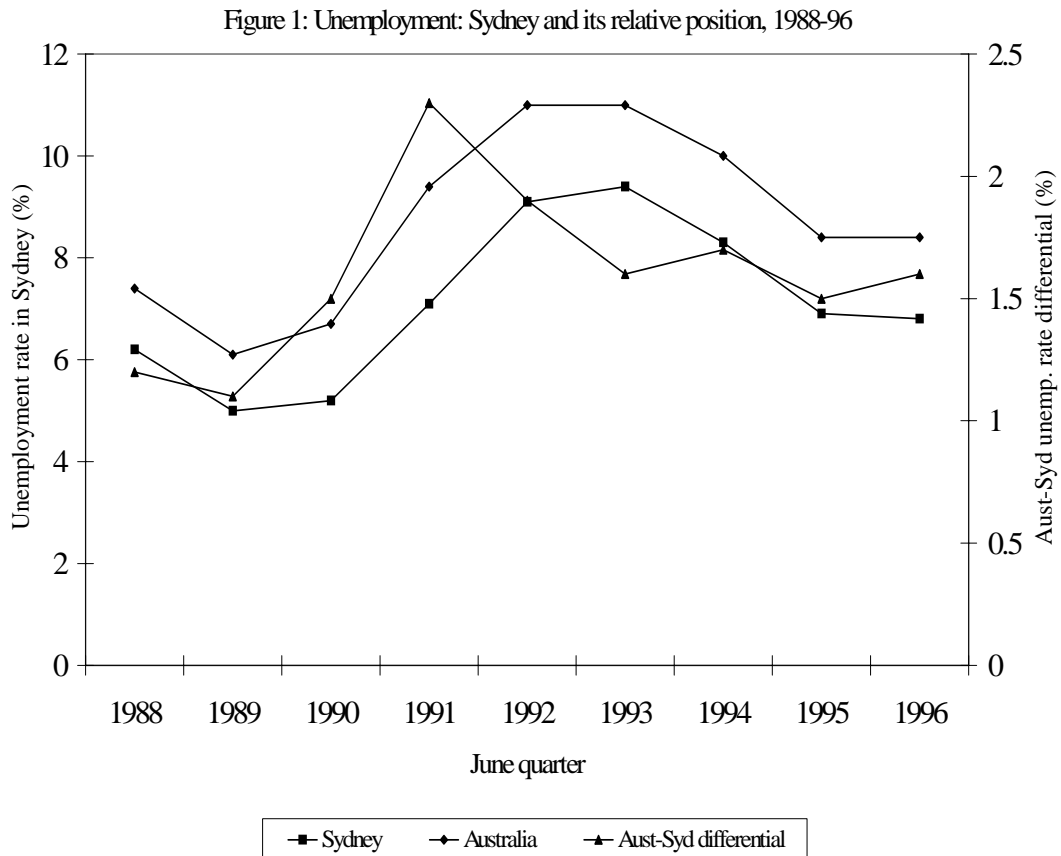
Both theory and empirical research indicate that economic upturns and downturns affect migration flows. Lee (1966) extended one of Ravenstein's (1885) laws of migration by hypothesising that "the volume of migration varies with fluctuations in the economy, with business cycles affecting the volume of migration". During boom times, the usual areas of destination, that is the great centres of commerce and industry, expand rapidly and relatively few persons, either return migrants or others, make the countermove. In times of depression, however, many migrants return to the area of origin, and others move towards comparatively "safer" non-industrialised areas" (Lee 1966: 56).

Thus the level of a migration stream to and from large cities varies with economic conditions, being high in prosperous times and low in times of depression. A strong labour market and the ready availability of jobs (that is, low unemployment) will result in large aggregate

migration flows but when jobs are scarce due to a weak labour market (that is, high unemployment), aggregate migration flows tend to be small. Milne (1993) and Greenwood *et al.* (1986) confirmed this pro-cyclical relationship between business cycles and migration flows in Canada and the United States, respectively. One of Milne's conclusions was that when "economic growth slows, potential migrants are less sure about obtaining employment should they move and, therefore, are more likely to stay in the region in which they currently reside" (Milne 1993: 372).

The state of the Australian economy and Sydney's labour market between 1991 and 1996 was quite different to that in the 1986-91 period. Australia went through a transition from an economic boom to the Great Recession between 1986 and 1996. The rate of unemployment, one indicator of the strength of a labour market, fell in the country for much of the late 1980s and this was also the case in Sydney (see Figure 1). However, the national unemployment rate began increasing rapidly from December 1989, and peaked at 11.2% in December 1992. For much of the early to mid-1990s, the rate of unemployment in Sydney increased and despite the downward trend after 1992, the rates were higher than those in the previous intercensal period were. Therefore the upturn in Sydney's labour market in the late 1980s may have encouraged migration but the tightening of the labour market in the early 1990s would have discouraged people to migrate from Sydney.

The state of Sydney's labour market, in relation to other labour markets in Australia, also varied between the two periods. At an aggregate level, the rate of unemployment in Australia was higher than that in Sydney throughout the 1986-96 period, as illustrated in Figure 1. The difference between unemployment rates in Sydney and Australia were narrow for much of the late 1980s, meaning that Sydney's labour market was in a relatively worse position compared to most other NSW Statistical Divisions (SDs) and most interstate areas (See

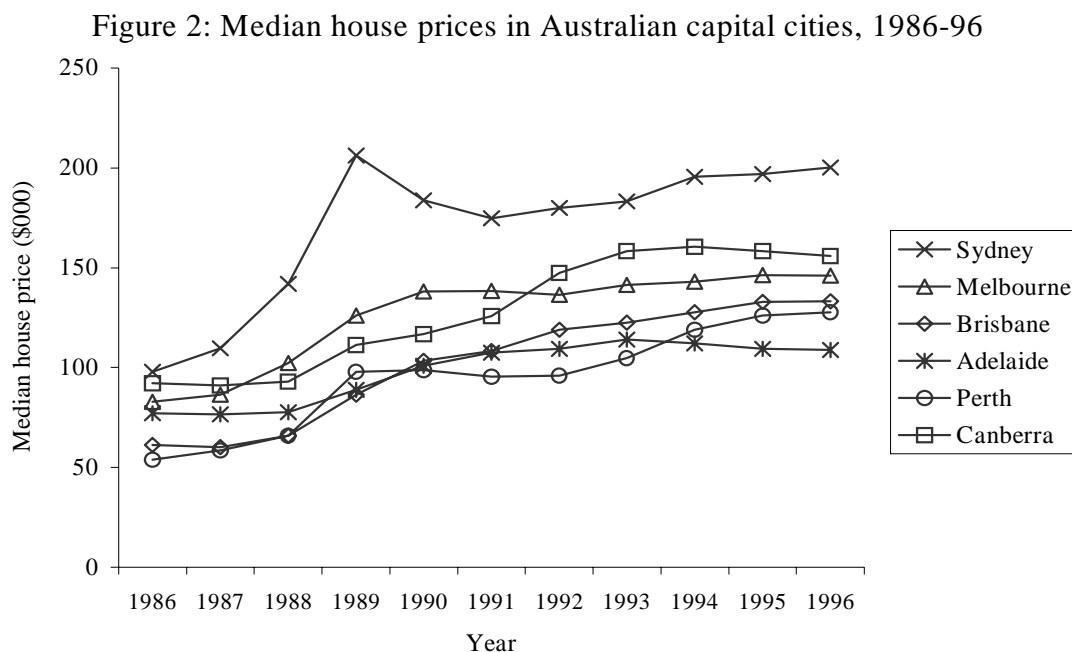


Source: ABS, Ausstats

Tables 1-2 in Appendix). This may have driven out-migration from Sydney.

However between 1989 and 1991 the difference between the unemployment rate in Australia and Sydney increased, with higher unemployment rates in most other areas in Australia compared to that in Sydney. By 1996, Sydney's labour market had vastly improved in relation to the non-capital city part of NSW, and NSW was in a better position than some of the other States and Territories. This is another explanation for the marked drop in the departures from Sydney, and hence the net internal migration loss from Sydney between the 1986-91 and 1991-96 periods.

As with Sydney's labour market, the state of the housing market between 1991 and 1996 was quite different to that in the 1986-91 inter-censal period, which would have affected internal migration flows of households to and from the city. In the late 1980s, high overseas migration to Sydney and the influx of overseas capital into the housing market contributed to a massive housing boom. House prices increased sharply during the boom of 1988-89 almost everywhere in Australia, particularly in Sydney (see Figure 2). The gap between median house prices in Sydney and those in the other capital cities also widened between 1986 and 1989. By mid-1989, with tight monetary policy dampening demand and flat house prices, high interest rates were the main factor contributing to deteriorating affordability as they peaked at 17% in 1989 (ABS 1996b). The rapid increase in house prices and high housing finance interest rates during this period were likely to have pushed some people out of Sydney.



Source: ABS (1996c)

From 1991 onwards demand for housing was generally depressed due to higher unemployment, economic uncertainty and low consumer confidence (Robertson 1992). However relatively more favourable conditions in Sydney's housing market may have encouraged people to stay in Sydney in the 1991-96 inter-censal period. Although median house prices in Sydney continued to increase in the early 1990s, the rate of increase in some

of the other capital cities was much higher than that in Sydney. In contrast to the late 1980s, housing in Sydney became more affordable in the early 1990s as home loan interest rates rapidly decreased and was as low as 8.8% between 1993 and 1994. As a result the period was characterised by rises in first home-buyer activity (particularly at the bottom end of the market) and sales turnover (ABS 1996c). These conditions would have benefited the economically disadvantaged who were likely to find housing in Sydney to be expensive, but been less of an advantage for the retired who would wanted to have sold off their property and migrated elsewhere. Thus the push factor of expensive housing in Sydney was less likely to be an issue for people, encouraging them to stay in Sydney.

4.1 Methodology

To test whether the depressed economic conditions Australia wide and the relative pull of Sydney's labour market encouraged people to remain in Sydney, the paper examined changes in the type of people that migrated to and from Sydney Statistical Division between the 1986-91 and 1991-96 inter-censal periods. It also looks at changes in net migration flows by migrant characteristics. As above, the variables analysed included the age, labour force status and income of migrants. On the other hand, to see if the downturn in the housing market led to the retention of households in Sydney in the early 1990s, changes in internal migration flows of households and the type of dwellings migrant households were resident were also examined. It was expected that changes in the type of people migrating to and from Sydney would indicate that the push of Sydney's housing market weakened.

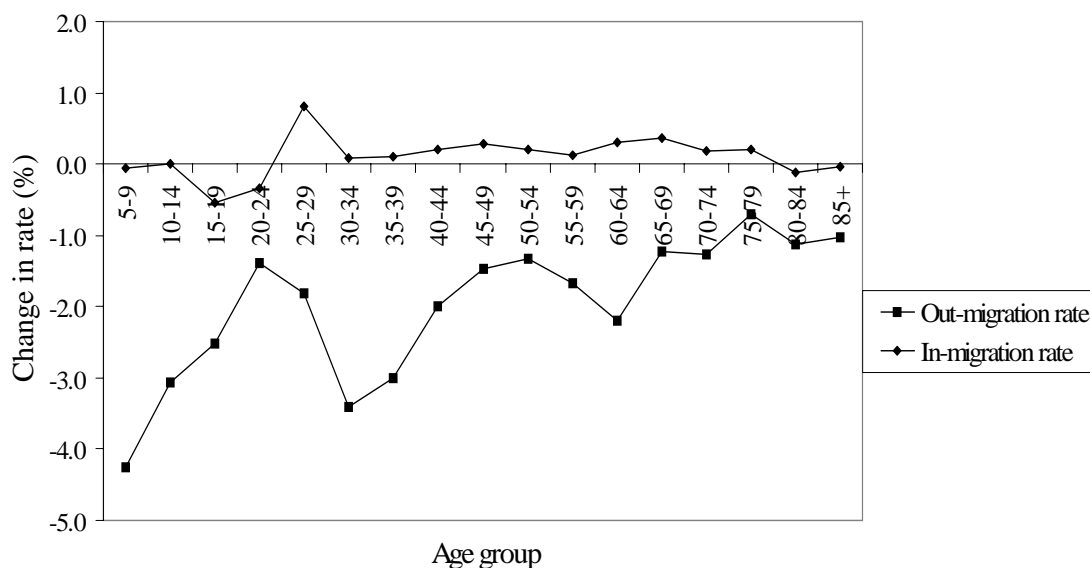
A problem with comparing Census data across two Censuses is changes in the way a variable is classified. It must be noted that income categories varied across the 1986, 1991 and 1996 censuses and have been adjusted to allow inter-censal comparisons. This was also the case with data on household income, weekly rent and monthly housing loan repayment. To allow inter-censal comparisons, some categories for these variables were adjusted and details of this are shown in the Appendix footnotes.

4.2 Results

(A): Changes in the demographic and economic characteristics of migrants

Figure 3 shows that there were minimal increases in the rate of in-migration of people of young adults aged 25-29 and older adults aged 45-49. On the other hand, there were substantial decreases in the rate of out-migration of children (5-19); adults of work force age (25-44) as well as 60-64 years old.

Figure 3: Change in rate of in- and out-migration by age of migrants, 1986-91 to 1991-96



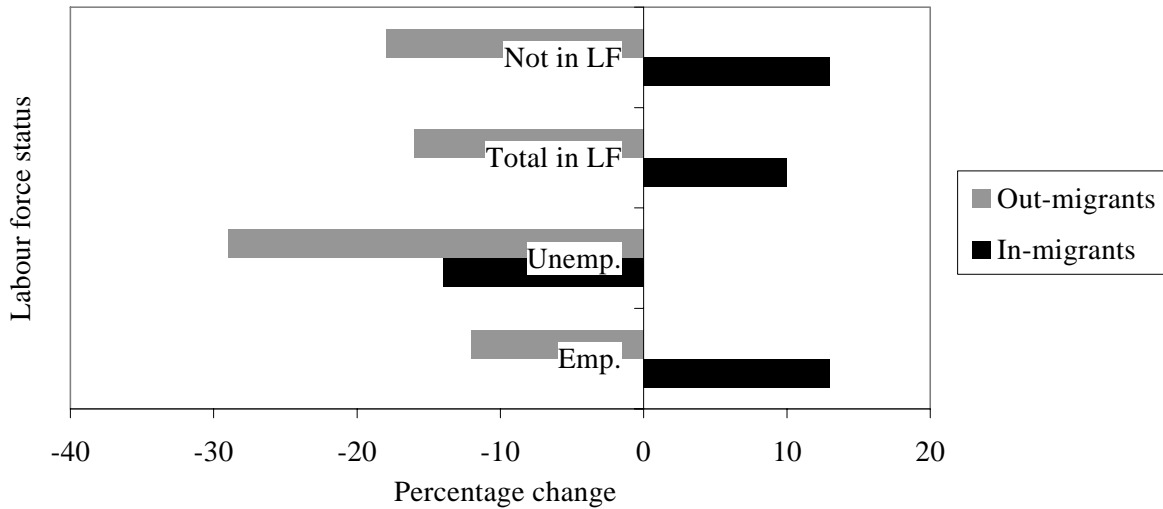
Source: ABS, 1991 and 1996 Census of Population and Housing, unpublished data
See Table 3 in Appendix

Changes in the labour force status of migrants showed that the number of people who had migrated to Sydney from elsewhere and were in the labour force rose by 10% (See Figure 4). This was mainly due to an increase in the number of in-migrants employed in Sydney while the number of in-migrants unemployed in Sydney actually fell by 14%. There was also an increase in the number of in-migrants who were not in the labour force in Sydney between the two inter-censal periods.

Departures of people in all labour-force categories decreased. The percentage decline in the number of out-migrants who were not in the labour force at their destination was larger than the decline in those who were in the labour force at their destination. The decline in departures of the latter group was mainly the result of fewer out-migrants unemployed at their destination.

Figure 5 shows the change in incomes of in-migrants between the late 1980s and early 1990s. There was a substantial rise in the number of in-migrants earning \$600-799/week and greater than \$800/wk in Sydney, and a smaller increase in the number of people earning between \$200-399/week. This can be explained by the strong increase in inflation in Sydney between 1986 and 1996 as the CPI index rose by 63% (from 72.7 to 118.7 at June quarter).

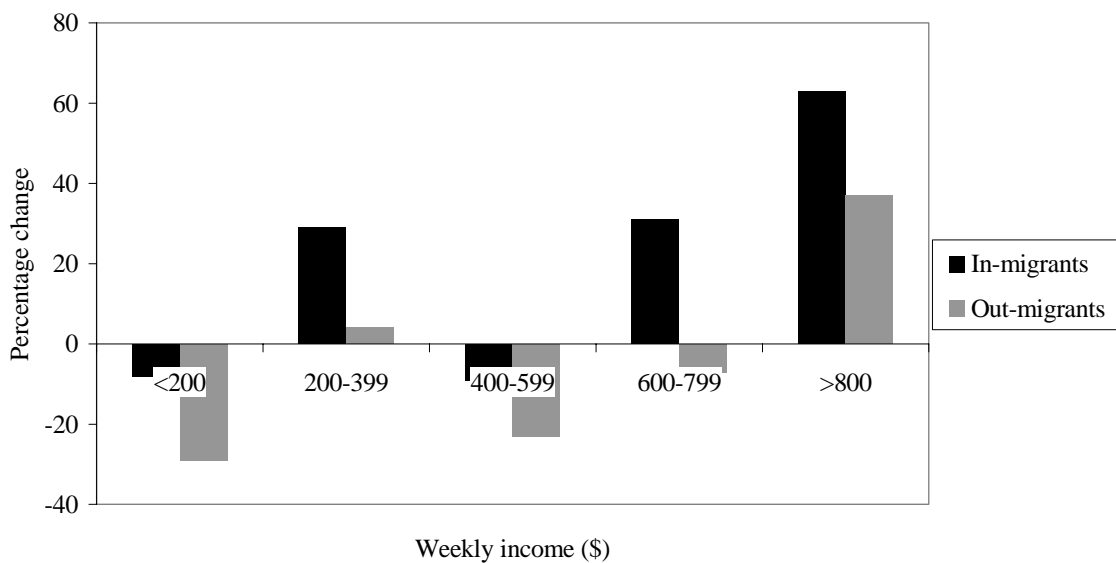
Figure 4: Change in internal migration flows by labour force status of migrants, 1986-91 to 1991-96



Source: ABS, 1991 and 1996 Census of Population and Housing, unpublished data
See Table 4 in Appendix

Changes in the income of out-migrants indicated that by far the largest decrease in departures was of very low-income earners as fewer people were earning less than \$200/wk at their destination. This was followed by an almost equal decrease in out-migrants with incomes between \$400-599/wk, and a smaller drop in out-migrants earning between \$600-799/week at their destination. In contrast, there was a marked increase in out-migrants on very high

Figure 5: Change in internal migration flows by income of migrants, 1986-91 to 1991-96



Source: ABS, 1991 and 1996 Census of Population and Housing, unpublished data
See Appendix for detailed table

weekly incomes (>\$800/week) at their destination.

Therefore the number of people who migrated to Sydney from elsewhere and who were employed in Sydney increased, as did the number of people on high weekly incomes. At the same time, there was an increase in arrivals of in-migrants that were not in the labour force and had low incomes in Sydney. Change in the economic characteristics of out-migrants revealed that there was a marked decline in departures of people employed or not in the labour force at their destination, along with a fall in departures of people on very low incomes and incomes in the middle to high range.

Changes in the net result of migration flows by the characteristics of migrants provide further evidence of the effect of general economic downturn and the relatively good position of Sydney's labour market on internal migration. The net gain to Sydney of young adults aged 15-24 increased from 6,900 between 1986-91 to 12,800 between 1991-96. On the other hand, the substantial decreases in out-migration of people aged 5-14 and 25-44 meant that net losses from Sydney in these age groups more than halved. Similarly, net losses of older adults (45-64) in 1991-96 were a third of that in 1986-91 period.

Net migration losses of people not in the labour force fell by 20,600 between the two periods. Net losses of people who were in the labour force also dropped from -46,700 in 1986-91 to -12,500 in 1991-96 and most of this was attributed to a substantial decrease in net losses of employed people. Net losses of the unemployed also decreased, but not to such a large extent.

Finally the largest decline in net losses from Sydney to the rest of Australia was of people on very low weekly incomes (<\$200/wk), with net losses in this category falling by 27,900, or from -66,000 to -38,135. Therefore people on low incomes increasingly chose to remain in Sydney in the early 1990s. There were also large decreases in net losses of people earning between \$400-599/week and \$600-799/week (6,100 and 6,700, respectively).

A key conclusion here is that there was a divide between the type of people who chose to remain in Sydney in the early 1990s. On one side were the less affluent who were most likely to be unemployed or not in labour force, and had low incomes. On the other side were the relatively well off who were likely to be employed and have incomes in the middle to high range. The fact that the city retained both these groups of people demonstrates that Sydney's economy improved and its labour market became more attractive in the 1990s.

Table 5: Net migration flows by characteristics of migrants, 1986-96

Characteristic	1986-91	1991-96
Age		
5-14	-31,600	-15,200
15-24	6,900	12,800
25-44	-61,200	-28,000
45-64	-36,300	-24,700
65+	-16,500	-11,500
Total	-138,700	-66,500
Labour force status		
Employed	-28,700	-1,600
Unemployed	-18,000	-10,900
Not in the labour force	-59,100	-38,500
Total	-105,800	-51,100
Weekly income		
<\$200	-66,000	-38,100
\$200-399	-20,800	-16,600
\$400-599	-6,300	-300
\$600-799	-4,100	2,600
>\$800	-1,000	2,700
Total	-98,200	-49,700

Source: ABS, 1996 Census of Population and Housing, unpublished data

Note: Totals for age, labour force status and income are not equal

Figures rounded to nearest hundred from actual values

See Tables 4-5 in Appendix

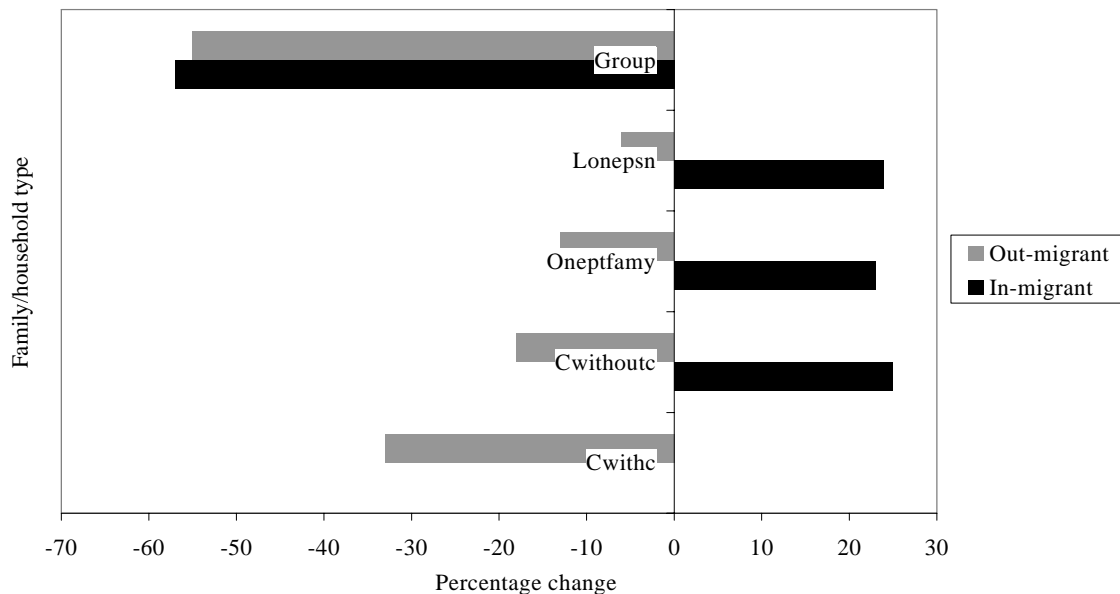
(B): Changes in the characteristics of migrant households

Change in gross migration flows by the first housing variable, age of household reference person, shows a similar picture to that of migration flows of individuals. There was a substantial decline in out-migration of households with reference persons that were aged between 25-34 and 35-44, as departures of persons fell by 19% and 22% respectively (see Table 6 in Appendix). This was also the case for older households with reference persons aged between 55 and 64. Households with reference persons that were 25 to 44 years old also increasing came into Sydney between the two periods as there was large absolute increases in arrivals in these age categories. All this indicates that migrant households with reference persons of workforce age remained in the city possibly due to the pull of Sydney's labour market.

Arrivals of almost all types of households increased between the two inter-censal periods, except for a decrease in arrivals of group households (refer to Figure 6). In terms of actual

numbers, group households only made up a small proportion of in-migrants and this resulted in the large percentage drop. While there was no change in arrivals of couples with children (Cwithc) to Sydney, there were especially large absolute and percentage increases in arrivals of lone person households, and smaller absolute increases in those of couples without children (Cwithoutc).

Figure 6: Change in internal migration of households by household type, 1986-91 to 1991-96



Source: ABS, 1991 and 1996 Census of Population and Housing, unpublished data
See Table 7 in Appendix

Departures of almost all types of households fell. As with the change in arrivals of group households, the substantial decrease in departures was a result of the small number of these households leaving Sydney in both periods. Out-migration of couples with children dropped by more than a third, followed by a smaller drop in departures of couples without children. Therefore families, who would ordinarily consider housing in Sydney to be expensive and perhaps move out, stayed behind in Sydney in the early 1990s.

The change in migration of households by their weekly income at their destination revealed that there were substantial decrease in households migrating from Sydney and with weekly incomes less than \$299, and between \$500 and \$999. Arrivals of these households also fell between the two periods. This highlights the decline in mobility of the low-income households and households with incomes in the middle range, as well as the retention of these households in Sydney in the 1990s. Of less significance were the increases in in-migrant households earning incomes in the low (\$300-499/week) and high range (>1,000/wk) in

Sydney, while there were decreases in out-migrant households with incomes at these levels at their destination.

Changes in net internal migration flows confirmed that couples with and without children, lone person households, households with incomes in the low and middle range remained in Sydney, as there were substantial decreases in net losses of all types of households.

Table 9: Net migration flows by characteristics of households, 1986-96

Household characteristic	1986-91	1991-96
Age of household reference person	3,700	4,600
15-24	-32,400	-15,700
25-44	-19,700	-13,000
45-64	-9,700	-7,400
65+	-58,100	-31,500
Total		
Household type		
Family Household		
Couple with children	-10,600	-4,600
Couple without children	-15,700	-10,400
One parent family	-3,300	-1,900
Non-family household		
Lone person	-10,600	-6,800
Group	100	30
Total	-40,100	-23,700
Gross weekly income		
<\$299	-10,400	-5,000
\$300-499	-8,100	-5,600
\$500-699	-5,000	-2,500
\$700-999	-4,200	-1,700
\$1,000-1,499	-1,600	-1,100
>\$1,500	100	800
Total	-29,200	-14,900

Source: ABS, 1996 Census of Population and Housing, unpublished data

Note: Totals for household type and household income are not equal

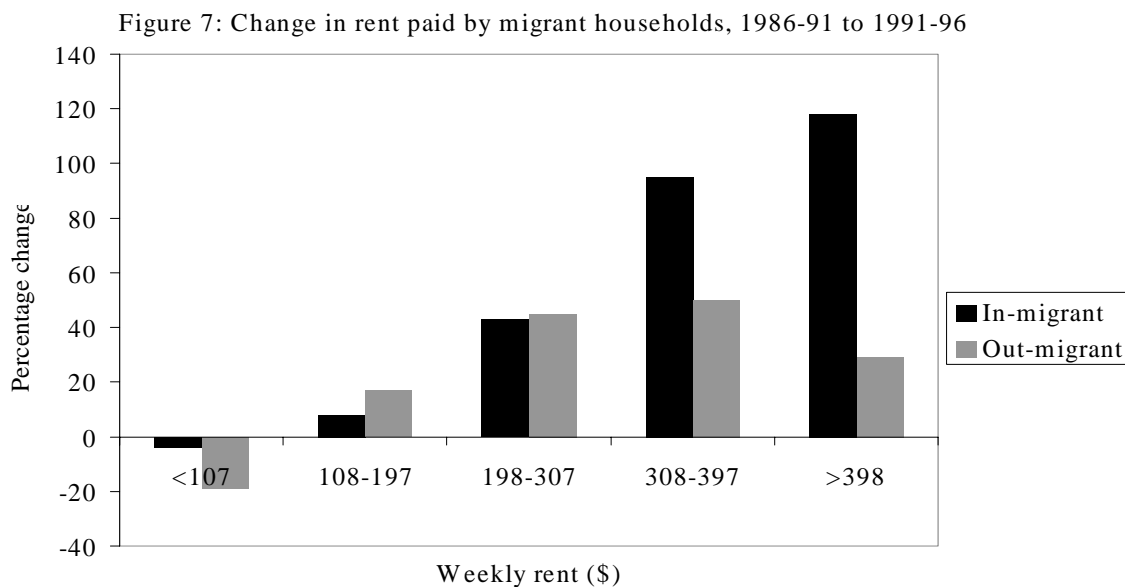
Figures rounded to nearest hundred from actual values

See Tables 7-8 in Appendix

(C): Changes in characteristics of dwellings of migrant households

While there was a small increase in the number of in-migrant households that were outright owners of their dwelling in Sydney (+6%), the number of households that migrated to Sydney and were renting in the city increased by more than 10 per cent (See Table 9 in Appendix). This may be explained by the relatively strong labour market in Sydney in the early 1990s, the increase in small families migrating to Sydney and in-migrant households with quite low to very high incomes in the city. On the other hand, a clear indicator of improved home affordability in Sydney in the early 1990s and a weaker push of Sydney's housing market was the marked decrease in departures of households purchasing or fully owning their homes at their destination (-25% and -27% respectively).

Changes in household migration by weekly rent paid by these households showed that there were increases in both arrivals and departures of households paying high rents. Figure 7



Source: ABS, 1991 and 1996 Census of Population and Housing, unpublished data

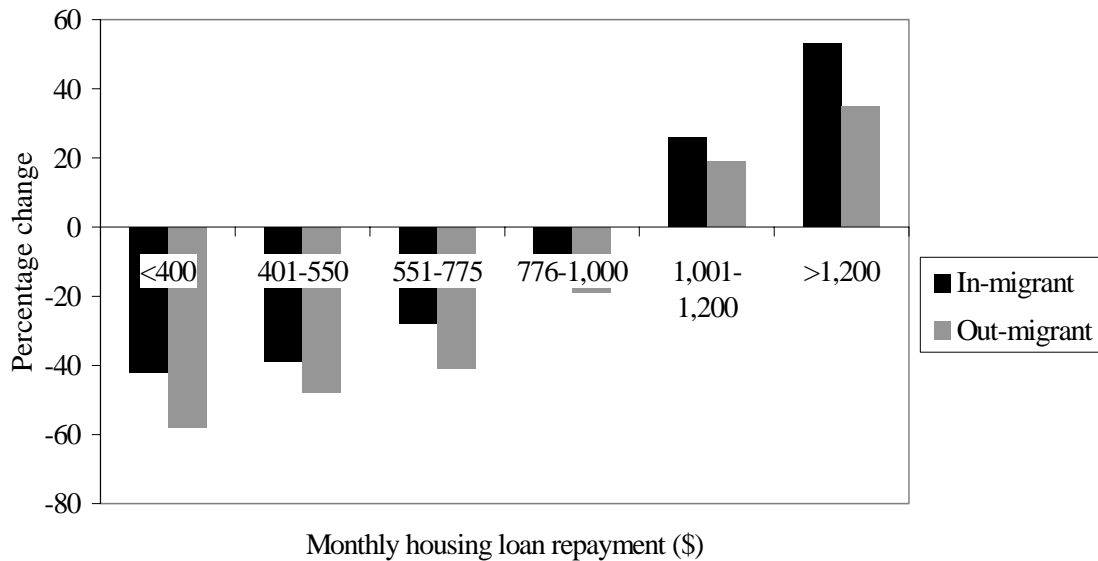
shows that there were especially large increases in in-migrant households paying high rents in Sydney (>\$308 in rent/week), while the increases in out-migrant households paying this level of rent at their destination were comparatively small. This may have been linked to the increase in arrivals of households with high weekly incomes in Sydney.

Despite the large percentage increases in migrant households paying over \$198 per week in rent, these households only made up a small proportion of total migrant households paying rent. There was actually a large absolute decline in out-migrant households paying very low rents (<\$107/week) at their destination, that is, fewer households that migrated from Sydney lived in low rental accommodation at their destination.

A similar pattern was evident with changes in housing loan repayments made by migrant households who were purchasing a home either in Sydney or some other destination. There were large increases in arrivals and departures of households paying greater than \$1,000 per month towards reducing their housing loan. Although Figure 8 shows that there was a larger rise in in-migrant households making this level of repayment in Sydney than out-migrant households making repayments at their destination, in absolute terms it was the latter that was more significant. At the lower end of repayments, both arrivals and departures fell, but the

decline in departures was more substantial. That is fewer out-migrant households were paying less than \$1,000 per month in housing loan repayments for a dwelling at their destination, respectively. The fact fewer households that migrated from Sydney were paying low rents or making low repayments is further evidence of the reduced attraction to alternative housing markets.

Figure 8: Change in housing loan repayments made by migrant households, 1986-91 to 1991-96



Source: ABS, 1991 and 1996 Census of Population and Housing, unpublished data
See Table 11 in Appendix

Change in household migration by the size of dwelling that households lived in, showed that there were increases in in-migrant households living in all types of dwellings, particularly households living in dwellings with less than 3 bedrooms in Sydney (See Table 12 in Appendix). There were also larger decreases in out-migrant households living in these types of dwellings at their destination.

Net household migration to and from Sydney by the dwelling characteristics of migrant households highlighted that the drop in net internal migration of households between the 1986-91 and 1991-96 inter-censal periods was not uniform. Change in net migration by tenure type showed that the largest decline in net losses was of households in rental accommodation. However in absolute terms the decline in net losses of households that fully owned and were purchasing their homes was more substantial, as net losses fell by 28,400 and 24,000 respectively.

Changes in net migration flows by housing costs shows that firstly, the net loss of households paying less than \$107 per week fell by almost a third while the net gains of households paying over \$197 per week in rent increased between the two periods. Interestingly, the net loss of households paying between \$108-197 in rent also increased by more than half.

Secondly, there was a significant drop in net losses of households paying less than \$775 per month.

Finally changes in net household migration flows by the size of dwelling showed that there was significant drop in net migration losses of households living in smaller dwellings, that is with less than two bedrooms. This suggests that households that stayed behind in Sydney were either renting apartments or living in small houses.

Table 10: Net migration flows by dwelling characteristics, 1986-96

Dwelling characteristic	1986-91	1991-96
Tenure		
Fully owned	-25,200	-16,300
Being purchased	-9,400	-5,200
Rented	-4,300	-1,400
Other	-1,600	-600
Total	-38,900	-23,500
Weekly rent		
<\$107	-6,800	-4,800
\$108-197	-2,100	-3,200
\$198-307	2,900	4,100
\$308-397	700	1,400
>\$398	300	800
Total	-5,100	-1,700
Monthly housing loan repayment		
<\$400	-2,700	-1,000
\$401-550	-1,900	-900
\$551-775	-2,500	-1,300
\$776-1,000	-1,800	-1,300
\$1,001-1,200	-600	-600
\$1,001-1,200	-100	200
>\$1,201	-9,400	-4,800
Total	-2,700	-1,000
Number of bedrooms		
0-1	-2,700	-1,000
2	-7,700	-3,500
3	-22,500	-13,700
4	-7,800	-5,500
5+	-1,200	-800
Total	-41,800	-23,600

Source: ABS, 1996 Census of Population and Housing, unpublished data

Totals for dwelling variables are not equal

Figures rounded to nearest hundred from actual values

See Tables 9-11 in Appendix

Thus changes in the characteristics of migrant households clearly show that the push of Sydney's housing market weakened in the early 1990s. The households that Sydney retained were likely to have entered the city's rental, and to a lesser extent, the home purchaser markets. The substantial decreases in net losses of family households, households purchasing or owning a home, and households paying low rent per week or making low monthly repayments, suggests that the attractiveness of cheaper housing at other destinations for households migrating from Sydney had diminished in the early 1990s. Hence the push of Sydney's housing market weakened in the 1991-96 inter-censal period.

5. Conclusion

The results presented in this paper highlight the increasingly important role of intra-national migration in Sydney's growth in the 1990s. The magnitude of internal migration flows to and from Sydney changed substantially between the 1986-91 and 1991-96 inter-censal periods. This contributed to a higher rate of population growth in Sydney than in the rest of New South Wales.

Although the size of migration flows varied, the structure of the flows remained unchanged in the two periods. Sydney continued to lose the young children, adults of workforce age, unemployed, people not in the labour force and on low incomes. Household migration flows also showed that Sydney lost couples with and without children, low-income households, outright owners and home purchasers, households paying low rents, making low repayments and living in large houses in both periods. These findings do suggest that while Sydney's labour market pulls certain people to the city, the push of the labour and housing markets is likely to be more important.

However it is recognised that these markets are not the only drivers of internal migration from the city. Lifestyle related reasons are also likely to be present in the decision to migration from Sydney, as the city lost substantial numbers of the elderly who were also likely to present in households comprising couples without children or lone person households. Older households were likely to have the realised capital from the sale of their property in Sydney and be able to own a home elsewhere upon migrating from Sydney. They may have made up a large proportion of the outright owners that the city lost to the rest of Australia.

Finally, this paper contributes to our understanding of how economic factors influence internal migration. Internal migration flows of individuals and households to and from Sydney were a response to the different circumstances in the Sydney labour and housing market in the 1986-91 and 1991-96 periods. Recovery from economic recession and a relatively more favourable housing market in Sydney in the early 1990s were important factors that contributed to the retention of population in the city.

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APPENDIX (See footnotes)

Table 1: Unemployment rates (%) within NSW and in other States/Territories, 1986-96

Statistical Division	1986	1991	1996	Temporal change*		Spatial differential ⁺		
				1986-91	1991-96	1986	1991	1996
Sydney	8.6	10.3	7.4	1.7	-2.9	-	-	-
Hunter	12.4	11.9	11.3	-0.5	-0.6	-3.8	-1.6	-3.9
Illawarra	13.1	13.7	11.7	0.6	-2.0	-4.5	-3.4	-4.3
Richmond-Tweed	19.1	17.7	15.1	-1.4	-2.6	-	-7.4	-7.7
Mid-North Coast	18.6	17.8	16.6	-0.8	-1.2	-	-7.5	-9.2
South Eastern	8.8	9.7	8.9	0.9	-0.8	-0.2	0.6	-1.5
Northern	11.5	11.9	10.4	0.4	-1.5	-2.9	-1.6	-3.0
North Western	13.0	13.0	10.3	0	-2.7	-4.4	-2.7	-2.9
Central West	10.1	10.9	8.8	0.8	-2.1	-1.5	-0.6	-1.4
Murray	8.7	10.5	8.7	1.8	-1.8	-0.1	-0.2	-1.3
Murrumbidgee	10.0	10.5	7.7	0.5	-2.8	-1.4	-0.2	-0.3
Far West	16.5	15.0	13.5	-1.5	-1.5	-7.9	-4.7	-6.1

Source: ABS, 1986, 1991 and 1996 Censuses (calculated from Cdata96 Time Series Profile)

*Temporal change shows change in rates between two censuses;

+Spatial differential shows difference between unemployment rates in Sydney and Other NSW SDs

Table 2: Unemployment rates (%) in Australian States/Territories, 1986-96

State	1986	1991	1996	Temporal change		Spatial differential		
				1986-91	1991-96	1986	1991	1996
NSW	10.1	11.2	8.8	1.1	-2.4	-	-	-
VIC	7.0	12.0	9.4	5.0	-2.6	3.1	-0.8	-0.6
QLD	11.1	11.3	9.6	0.2	-1.7	-1.0	-0.1	-0.8
SA	9.5	11.7	10.4	2.2	-1.3	0.6	-0.5	-1.6
WA	9.4	12.4	8.1	3.0	-4.3	0.7	-1.2	0.7
TAS	10.0	13.5	11.0	3.5	-2.5	0.1	-2.3	-2.2
NT	10.7	11.4	7.4	0.7	-4.0	-0.6	-0.2	1.4
ACT	4.7	7.3	7.3	2.6	0	5.4	3.9	1.5
Australia	9.2	11.6	9.2	2.4	-2.4	0.9	-0.4	0.4

Source: ABS, 1986, 1991 and 1996 Censuses (calculated from Cdata96 Time Series Profile)

*Temporal change shows change in rates between two censuses;

+Spatial differential shows difference between unemployment rate in NSW and Other States/Territories

Table 3: Change in rate of in-migration and out-migration by age of migrants, 1986-91 to 1991-96

Age (years)	In-migration rate			Out-migration rate		
	1986-91	1991-96	Change	1986-91	1991-96	Change
5-9	4.8	4.7	-0.1	12.8	8.6	-4.2
10-14	4.1	4.1	0	9.3	6.3	-3.1
15-19	6.0	5.5	-0.5	6.9	4.9	-2.0
20-24	10.9	10.5	-0.3	7.7	6.7	-1.0
25-29	8.3	9.1	+0.8	12.5	9.9	-2.6
30-34	6.3	6.4	+0.1	13.0	9.5	-3.5
35-39	5.0	5.1	+0.1	11.2	8.1	-3.1
40-44	3.8	4.0	+0.2	8.6	6.4	-2.2
45-49	3.0	3.2	+0.3	7.0	5.2	-1.7
50-54	2.4	2.6	+0.2	6.8	5.2	-1.5
55-59	1.9	2.0	+0.1	8.2	6.4	-1.8
60-64	1.6	1.9	+0.3	9.4	6.9	-2.5
65-69	1.5	1.8	+0.4	7.7	6.1	-1.6
70-74	1.6	1.7	+0.2	5.6	4.2	-1.4
75-79	1.6	1.8	+0.2	4.4	3.5	-0.9
80-84	1.9	1.8	-0.1	4.3	3.3	-1.0
85+	2.0	1.9	0	4.3	3.3	-1.0
Total	4.5	4.5	0	8.5	6.3	-2.2

Source: ABS, Census of Population and Housing, customised tables
1991 and 1996 Usual resident population (URP) data by 5-year age-groups, unpublished data

Table 4: Change in internal migration flows by the labour force status of migrants, 1986-91 to 1991-96

Labour force status	In-migrants			Out-migrants		
	1986-91	1991-96	% Change	1986-91	1991-96	% Change
Employed	87,800	99,400	+13	114,800	100,700	-12
Unemployed	11,100	9,500	-14	29,000	20,500	-29
Total in labour force	98,900	108,900	+10	143,800	121,200	-16
Not in labour force	31,500	35,600	+13	90,600	74,100	-18
Not stated*	3,500+	1,300+		5,100+	1,500+	
Total	130,400	144,500	+11	234,400	195,300	-17

Source: ABS, Census of Population and Housing, customised tables

*Includes people who were employed but did not state their hours

Table 5: Change in internal migration flows by weekly income of migrants, 1986-91 to 1991-96

Gross weekly income	In-migrants			Out-migrants		
	1986-91	1991-96	% Change	1986-91	1991-96	% Change
<\$200	43,200	39,800	-8	109,200	77,900	-29
\$200-\$399	20,200	26,000	+29	41,000	42,600	+4
\$400-\$599	32,300	29,400	-9	38,700	29,700	-23
\$600-\$799	16,900	22,100	+31	21,000	19,600	-7
> \$800	15,400	25,100	+63	16,400	22,400	+37
Not stated	6,700	4,000	-40	15,600	5,600	-64
Total	134,700	146,400	+9	241,900	197,800	-18

Source: ABS, Census of Population and Housing, customised tables

Note: Income categories have been adjusted to allow inter-censal comparisons (see Footnotes)

Table 6: Internal migration flows of household reference persons by their age, 1986-91 and 1991-96

Age group	In-migrant			Out-migrant		
	1986-91	1991-96	% Change	1986-91	1991-96	% Change
15-24	12,000	12,400	+3	8,300	7,800	-6
25-44	31,600	35,200	+11	64,000	50,900	-20
45-64	8,200	10,500	+28	27,900	23,500	-16
65+	2,600	3,400	+31	12,300	10,800	-12
Total	54,400	61,500	+13	112,500	93,000	-17

Source: ABS, 1991 and 1996 Census of Population and Housing, customised tables

Table includes age of primary, secondary, third family reference person and non-family reference person

Table 7: Internal migration flows of primary household reference persons by their age, 1991-96

Age group	In-migrants	Out-migrants	Net
15-24	4,900	3,700	1,200
25-44	23,900	38,900	-15,000
45-64	7,500	16,600	-9,100
65+	1,900	6,200	-4,300
Total	38,200	65,400	-27,200

Source: ABS, 1991 and 1996 Census of Population and Housing, customised tables

Table includes age of primary, secondary, third family reference person and non-family reference person

Table 7: Internal migration flows of household reference persons by household type, 1986-91 and 1991-96

Family/household type	In-migrant			Out-migrant		
	1986-91	1991-96	% Change	1986-91	1991-96	% Change
One family household	6,700	6,700	+0	17,300	11,300	-35
Couple with children	5,900	7,400	+25	21,600	17,800	-18
Couple without children	2,500	3,000	+23	5,700	5,000	-13
One parent family	600	900	+50	500	400	-20
Other	4,600	5,500	+20	5,600	5,400	-4
Not applicable						
Multi-family household	400	700	+75	900	1,000	+11
Total family households	20,700	24,200	+17	51,700	40,900	-21
Non-family household	10,500	13,000	+24	21,100	19,900	-6
Lone person						
Group	2,200	1,000	-57	2,100	900	-55
Total	33,400	38,200	+14	74,900	61,700	-18

Source: ABS, 1991 and 1996 Census of Population and Housing, customised tables

Table 8: Internal migration flows of household reference persons by household income, 1986-91 to 1991-96

Gross weekly household income	In-migrant			Out-migrant		
	1986-91	1991-96	% Change	1986-91	1991-96	% Change
<\$299	2,300	1,800	-24	12,800	6,700	-47
\$300-499	2,000	2,500	+23	10,100	8,000	-21
\$500-699	2,100	1,800	-15	7,100	4,300	-40
\$700-999	3,200	2,600	-18	7,300	4,300	-41
\$1,000-1,499	3,000	3,200	+7	4,600	4,300	-7
>\$1,500	3,200	3,800	+20	3,100	3,000	-2
<i>Subtotal</i>	15,800	15,700	-1	45,000	30,600	-32
Income not stated	300	3,700	+1,133	1,000	4,000	+300
Not applicable	17,900	23,700	+32	30,300	23,900	-21
Total	34,000	43,100	+27	76,300	58,500	-23

Source: ABS, 1991 and 1996 Census of Population and Housing, customised tables

Note: Income categories have been adjusted to allow inter-censal comparisons (see Footnotes)

Not applicable category includes non-family reference persons, that is lone person and group households

Table 9: Change in internal migration flows of household reference persons by tenure type of dwelling, 1986-91 to 1991-96

Tenure	In-migrant			Out-migrant		
	1986-91	1991-96	% Change	1986-91	1991-96	% Change
Fully owned	6,600	7,000	+6	31,900	23,300	-27
Being purchased	7,300	7,500	+2	16,800	12,700	-25
Rented	20,200	22,500	+11	24,500	24,000	-2
Being occupied	-	900	-	-	1,400	-
<i>Subtotal</i>	34,200	37,900	+11	73,100	61,400	-16
Other*	1,600	800	-50	3,200	1,500	-53
Total	35,800	38,700	+8	76,300	62,900	-18

Source: ABS, 1991 and 1996 Census of Population and Housing, customised tables

*Other includes tenure inadequately described, not stated and not applicable categories

Table 10: Change in internal migration flows of household reference persons by rent paid by those living in rental accommodation, 1986-91 to 1991-96

Weekly rent	In-migrant			Out-migrant		
	1986-91	1991-96	% Change	1986-91	1991-96	% Change
<\$107	4,300	4,200	-4	11,200	9,000	-19
\$108-197	8,400	9,100	+8	10,500	12,300	+17
\$198-307	4,700	6,700	+43	1,800	2,600	+45
\$308-397	900	1,700	+95	200	300	+50
>\$398	500	1,100	+118	200	300	+29
<i>Subtotal</i>	18,800	22,800	+21	23,900	24,500	+3
Not stated	300	500	+67	600	600	0
Not applicable	14,700	15,500	+5	51,900	37,700	-27
Total	33,800	38,800	+15	76,400	62,800	-18

Source: ABS, 1991 and 1996 Census of Population and Housing, customised tables
 'Not applicable' category includes households owning and purchasing a dwelling

Table 11: Change in internal migration flows of household reference persons by housing loan repayment made by those purchasing a dwelling, 1986-91 to 1991-96

Monthly housing loan repayment	In-migrant			Out-migrant		
	1986-91	1991-96	% Change	1986-91	1991-96	% Change
<\$400	800	500	-42	3,400	1,500	-58
\$401-550	700	400	-39	2,500	1,300	-48
\$551-775	1,100	800	-28	3,600	2,100	-41
\$776-1,000	1,300	1,200	-8	3,100	2,500	-19
\$1,001-1,200	800	1,000	+26	1,400	1,600	+19
>\$1,201	2,100	3,200	+53	2,200	2,900	+35
<i>Subtotal</i>	6,800	7,100	+4	16,200	11,900	-27
Not stated	200	400	+100	600	700	+17
Not applicable	27,000	31,300	+16	59,600	50,100	-16
Total	34,000	31,700	-7	76,400	62,700	-18

Source: ABS, 1991 and 1996 Census of Population and Housing, customised tables
 'Not applicable' category includes households owning and renting a dwelling

Table 12: Change in internal migration flows of household reference persons by number of bedrooms in their dwelling, 1986-91 to 1991-96

Number of bedrooms	In-migrant			Out-migrant		
	1986-91	1991-96	% Change	1986-91	1991-96	% Change
0-1	4,700	5,800	+24	7,300	5,800	-20
2	11,000	12,100	+10	18,700	15,600	-16
3	11,900	13,400	+13	34,400	27,200	-21
4	4,900	5,600	+15	12,600	11,100	-12
5+	1,100	1,400	+22	2,300	2,100	-7
<i>Subtotal</i>	33,500	38,300	+14	75,300	61,900	-18
Not stated/applicable	400	500	+25	1,000	900	-10
Total	33,900	38,800	+14	76,300	62,800	-18

Footnotes

Tables 1-3:

- Change in rates calculated from actual rates and not rounded rates shown in table

Tables 3-12:

- Figures rounded to nearest hundred and as a result, columns may not add up to total
- Percentages calculated from actual values and have been rounded to nearest whole number
- Tables exclude 'not stated', 'not applicable' categories and 'visitors only' households

Tables 7-12

- Migration of family households is based on change of residence of primary family reference person

- Table 5 - As the individual income categories varied between the 1991 and 1996 censuses, they were adjusted to allow inter-censal comparisons. The five income categories listed below are the nearest that could be devised.

1991 Census (income per annum)	1996 Census (income per week)
\$0-10,000	Negative income to \$199 (<\$200)
\$10,001-20,000	\$200-399
\$20,001-30,000	\$400-599
\$30,001-40,000	\$600-799
>\$40,000	>\$800

- Table 8 - As the household income categories varied between the 1991 and 1996 censuses (due to the change in individual income categories), they were adjusted to allow inter-censal comparisons. The six income categories listed below are the nearest that could be devised.

1991 Census (income per week)	1996 Census (income per week)
<\$308	<\$299
\$309-481	\$300-499
\$482-673	\$500-699
\$674-961	\$700-999
\$962-1,346	\$1,000-1,499
>\$1,346	>\$1,500

- Tables 10-12 – The way in which information on housing costs, that is, weekly rent and monthly housing loan repayment, was captured in the 1996 Census differed from that in the earlier Census. To reduce the respondent burden, a single question ‘How much does your household pay for this dwelling?’ in the 1996 Census replaced two individual closed-response questions on rent and housing loan repayments in the 1991 Census (see McDonald S and Majchrzak-Hamilton). The categories used in this paper are according to the 1991 Census to allow comparisons in housing costs incurred by migrant households.