

Philip S. Morrison<sup>1</sup>

# Residential Sorting and Social Mobility in New Zealand

This article argues that the residential sorting process which confers advantages on those who can choose their residential environments may also deny such advantages to others. The policy question therefore is the degree to which residing in neighbourhoods with relatively high levels of deprivation lowers people's prospects of social mobility.

## The geography of social mobility

Remarkably for a country which has experienced such a marked increase in income inequality over the last three decades, we still have no comprehensive study of social mobility – the movement of individuals between different positions within the system of social stratification. This has been highlighted by the release of the Treasury working paper on social mobility in New Zealand (Gibbons, 2010) in what appears to be the first policy-focused study of social mobility in over 40 years (Robb and Cloud, 1970).

As a research community we have been quite aware of the potential for income inequality to slow social mobility, and a number of these concerns were

discussed over a decade ago in the Institute of Policy Studies volume *Cycles of Disadvantage?* (Boggers, Corcoran et al., 1999). Since then movements in and out of poverty and income dynamics more generally have been investigated (Ballantyne, Chapple, et al., 2003; Maloney and Barker, 2000), along with intergenerational welfare participation (Maloney, Maani and Pacheco, 2003). The Treasury also held a more recent discussion on social mobility at the 13th Conference on Labour, Employment and Work (Treasury, 2008) and the Institute's recent symposium on income inequality touched on some of the same issues.<sup>2</sup> The potential policy value of such enquiry is well illustrated by the lessons learned in the United Kingdom (Smith and Middleton, 2007).

The focus of this article is on the way inequalities become translated into separate residential geographies of the rich and poor. Where one lives in a city, the characteristics of the neighbourhood, matters a great deal to those who can and do exercise choice (Benabou, 1996) and environmental and social externalities of residential locations are often selected with an eye on the generational transmission of privilege (Thorns, 1989). The uneven distribution of positive externalities which results from residential sorting confers a class of advantages known as neighbourhood effects (Lupton, 2003; Durlauf, 2004).<sup>3</sup>

One of the reasons residential sorting has attracted the attention of policy analysts overseas is that the positive tail of the income distribution in many countries has become longer. New Zealand is no exception (Atkinson and Leigh, 2005), and income inequality increased markedly in this country between the mid-1980s and the turn of the century to become one of the highest in the OECD (Gleisner, 2010). Our social geography has become more distinct spatially as a result (White, Gunston et al., 2008; Maré and Mawson, 2001). Increasing spatial separation of socio-economic groups

---

Philip Morrison is Professor of Human Geography at Victoria University of Wellington

is a phenomenon we now share with Australia (Badcock, 1997; Baum, 1997; Biddle, Kennedy et al., 2001; Forster 2006; Randolph, Murray et al., 2007), Canada (Hatfield, 1997; Hulchanski, 2007), the UK (Dorling and Rees, 2003) and, of course, the USA (Abramson, Tobin et al., 1995; Massey, 1996).

The underlying concern with these spatial trends is that access to the positive externalities which accompany spatial clustering of the educated and those with high incomes are denied to the relatively disadvantaged (Frank, 2005). The response in New Zealand has been a number of redistribution mechanisms based on the attributes both of individuals (e.g. progression taxation) and families (e.g. Working for Families) and of the areas in which they live (e.g. differential grants channelled through local health and school boards).

In the discussion to follow, I draw on recent research to consider the impact that residence in neighbourhoods with relatively high levels of deprivation has on the direction and magnitude of social mobility (see Morrison and Nissen, 2010 and Clark and Morrison, 2011). In doing so I connect three dimensions which have remained largely separate in the New Zealand debate: income inequality, residential sorting and social mobility.

Over time, most people adjust to their changing needs and circumstances

by changing their residence. These moves can be upwards or downwards in terms of neighbourhood quality and socio-economic composition. The approach taken by the two studies summarised here involves defining upward social mobility not as an intergenerational change in occupational rank but as a change of address resulting in moves to neighbourhoods with lower levels of socio-economic deprivation.

#### Some empirical findings

The neighbourhood change measure of social mobility we use relies on the New Zealand Index of Deprivation, NZDep06, the fourth iteration of an index originally developed for health researchers from the 1991 census (Salmond and Crampton, 2001, 2002).<sup>4</sup> The deprivation index itself is constructed from nine variables reflecting eight dimensions of deprivation: two income measures, housing tenure, single-parent families, unemployment, lack of qualifications, crowding, and lack of access to a telephone and/or a car. Each variable is measured as the proportion of people in a Statistics New Zealand area unit and is standardised using eight age-gender groups to match the New Zealand population structure (White, Gunston et al. 2008, pp.9, 10).<sup>5</sup> In our two studies area units are used as proxies for 'neighbourhoods'.

When ordered by their index score, all area units within the country can be assigned to a decile: from 1 as the least deprived to 10 the most deprived. Such an assignment is based on rank and therefore is based on relative rather than absolute differences between neighbourhoods. It is also worth remembering that as an ecological measure, the NZDep06 refers only to the area in which people live, and not any one or every individual there (Blakely and Pearce, 2002).

By attaching the deprivation characteristics of the person's area unit to the attributes of the individual mover we can operationalise a neighbourhood-based conceptualisation of social mobility.<sup>6</sup> The focus therefore is on mobility in neighbourhood deprivation terms rather than geographic mobility *per se*. Mobility in neighbourhood deprivation terms therefore can subsume any number of geographic configurations, from short moves next door to long moves the length of the country.

The first set of empirical results draws on those people who changed residence between the census of 2001 and the census of 2006. The second draws on the Survey of Dynamics and Motivation for Migration in New Zealand, which covers a sample of over 5,000 movers over the two-year period 2005–2006. Both data sets were assembled by Statistics New Zealand. The focus in each case is on

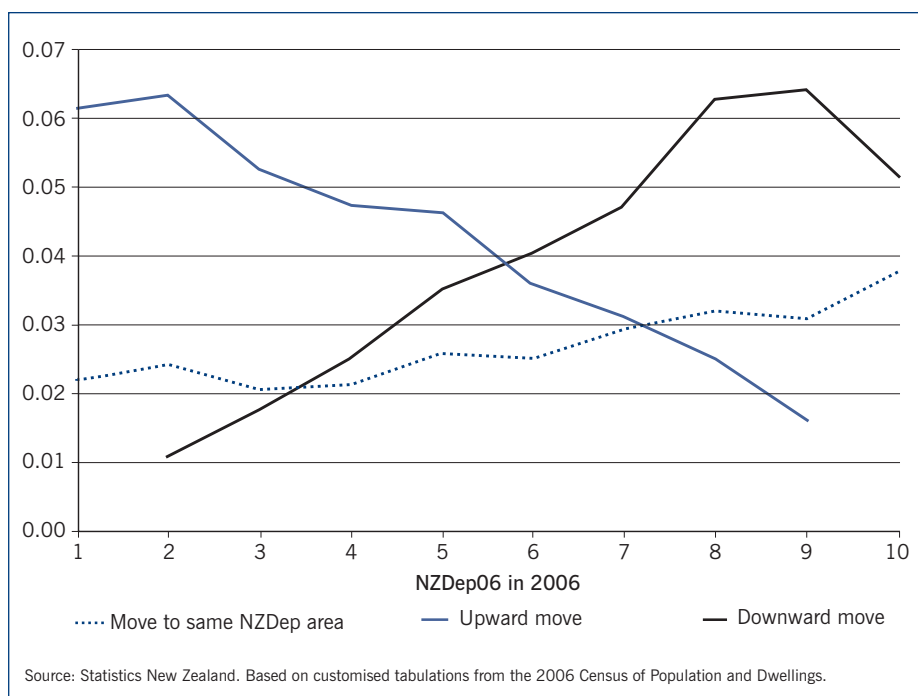
**Table 1: NZDep2006 classification of residents aged 15+ at the 2006 census who lived elsewhere in New Zealand five years earlier**

NZ Dep 2006 at origin 2001	NZ DEP 2006 index at destination 2006										Total
	1	2	3	4	5	6	7	8	9	10	
1	27,840	14,076	9,726	8,823	9,342	7,641	6,939	6,174	5,478	3,153	99,192
2	14,196	30,636	12,693	11,571	11,700	9,687	8,235	8,103	7,251	4,104	118,176
3	11,253	13,476	26,022	11,181	11,724	10,980	9,939	10,176	7,353	4,080	116,184
4	10,281	12,291	10,821	27,150	12,108	10,206	9,672	11,136	8,976	5,043	117,684
5	10,812	13,176	12,486	12,756	32,742	13,278	12,687	13,230	11,088	6,195	138,450
6	7,845	9,747	11,268	10,689	12,996	31,716	12,420	13,377	10,758	7,095	127,911
7	8,451	9,090	10,398	10,137	13,269	12,936	37,071	17,811	12,393	8,169	139,725
8	7,035	9,789	10,335	11,976	14,151	13,635	17,892	40,647	18,321	11,610	155,391
9	5,532	8,334	7,140	9,741	12,141	10,887	13,077	18,615	39,063	16,812	141,342
10	2,958	5,076	4,263	5,463	7,422	8,418	8,997	13,587	20,286	47,700	124,170
<b>Total</b>	<b>106,203</b>	<b>125,691</b>	<b>115,152</b>	<b>119,487</b>	<b>137,595</b>	<b>129,384</b>	<b>136,929</b>	<b>152,856</b>	<b>140,967</b>	<b>113,961</b>	<b>1,278,225</b>

Source: Statistics New Zealand. Customised Tabulations from the 2006 Census of Population and Dwellings

Note: Figures in this table represent those who moved between 2001 and 2006 and where NZDep2006 was identified for each of the two specified addresses.

**Figure 1: Social mobility in neighbourhood terms: the probability of moving to area units in the same, higher or lower deprivation deciles between 2001 and 2006.**



those who change residence over the five- and two-year time spans respectively.

#### Census-based mobility patterns

The origin-by-destination matrix in Table 1 shows the mobility experience of 1.27 million people who changed their residential address within New Zealand over the five-year period 2001–2006.<sup>7</sup> The cells in the table count the number of respondents in 2006 who declared that they lived at another address within New Zealand at the previous census five years earlier. Their addresses at the beginning and end of the period have been sorted according to the deprivation scores of their neighbourhood in 2006. For example, 27,840 people moved from an address in 2001 that was classified as being in a decile 1 neighbourhood to another address in a neighbourhood also classified as decile 1 (the top left cell of the table).<sup>8</sup> Many more people move to area units with a different decile ranking from the one they leave. Flows in and out of deprivation deciles tend to be symmetrical, as some people move up and others move down. For example, a total of 14,196 moved from decile 2 areas to those classified as decile 1 and a very similar total of 14,076 moved in the other direction, from decile 1 to decile 2.

The value of decile-of-origin by decile-of-destination matrices such as

Table 1 is that they allows us to identify three types of mobility. Upward social mobility involves moving to a lower decile – those cells below the diagonal. Downward mobility involves moving to a higher decile – the cells above the diagonal. Those changing residence but making no change to the decile rating of their neighbourhood appear in the diagonal itself and are classified as stable in social mobility terms.

If we calculate the unconditional probabilities corresponding to the counts in Table 1 (by dividing each cell frequency by the grand total) we learn that just over one quarter (27%) of all those changing address within New Zealand between 2001 and 2006 were not socially mobile in neighbourhood terms; they remained in the diagonal. The probability that a person changing their residence would move upwards in decile terms was 38% and move downwards was 35%. There was, therefore, a net aggregate change of residential addresses that was slightly positive in social mobility terms over this period.

Social mobility in neighbourhood terms can be represented graphically through Figure 1, which indicates the probability a person will move to an area unit in the same, higher or lower deprivation decile over the 2001–2006

period. The dotted line refers to those moving neighbourhoods within the same deprivation decile. The fact that the line is upward sloping means that those moving from the more deprived neighbourhood are more likely to remain within their decile of origin rather than moving up or down.<sup>9</sup>

Among those who change neighbourhood deciles when they move, those who move to more deprived areas are more likely to have moved down to an even more deprived (higher decile) neighbourhood than the one they came from – as shown by the black solid line in Figure 1. In contrast, those who moved to least deprived areas were more likely to have improved the decile ranking of their residence, as shown by the blue solid line (i.e. they moved to a lower decile). By virtue of the bounded nature of decile classification, those moving to a different decile who originate in decile 1 and decile 10 neighbourhoods could only move downwards and upwards respectively. However, the chances of residents moving downwards to decile 10 were actually lower than of moving downwards to slightly lower deciles 9 or 8. As we confirm later using survey data, residing in the most deprived neighbourhoods does appear to be associated with constrained upward mobility.

While residents who moved to the least deprived areas were more likely to have improved the decile ranking of their residence, as shown by the blue solid line in Figure 1, the chances were actually highest for those who are in decile 2. For those who are in deciles 3 to 9, the probabilities of having moved to a less deprived neighbourhood diminished.

In summary, the residential mobility we observe in New Zealand over the most recent inter-censal period available shows that the adjustments people make when they change neighbourhoods tend to reinforce or perpetuate the pre-existing distribution of people across neighbourhoods. Of all people who move within the period, those who start in the most deprived areas are the least likely to leave them (for locations elsewhere in New Zealand).<sup>10</sup> However, when people do move out of their decile of origin their chances of moving upwards are

slightly greater than their chances of moving downwards. The result, therefore, is a slight net gain in social mobility experienced by all those who change address.

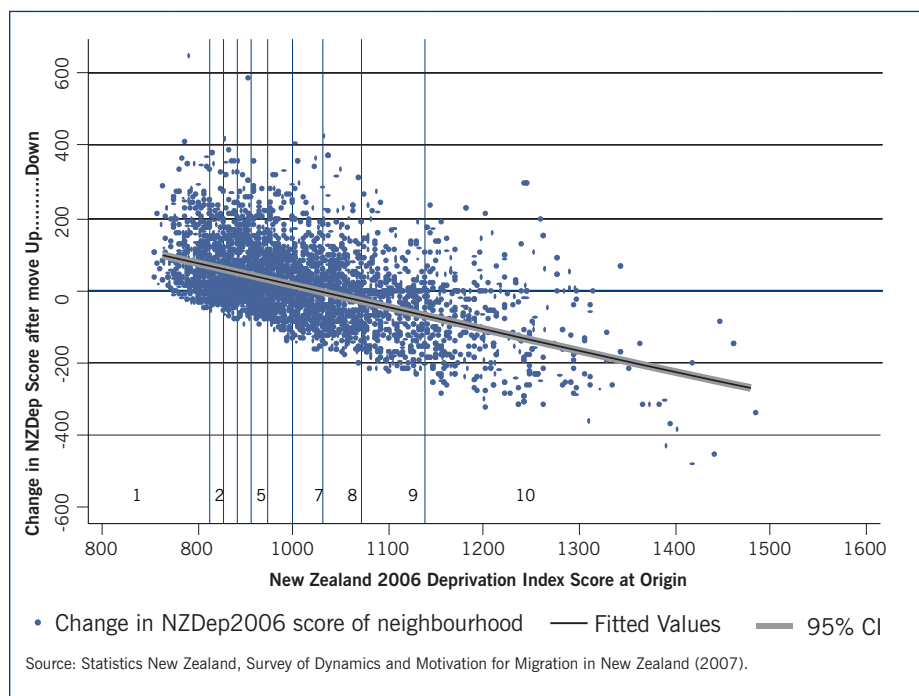
Observing who upgrades and downgrades their neighbourhood is one thing; knowing who these people are is another. All we have shown from the census evidence above is that those who do leave the poorest 10% or 20% of neighbourhoods are more likely to move to a less deprived neighbourhood, however slight the difference may be. Without any knowledge of their demographic or socio-economic characteristics, however, we are unable to say how important or influential the neighbourhood of origin itself might be in constraining mobility as we have defined it. In order to estimate the relative effect of the neighbourhoods on the social mobility of individuals it is necessary not only to establish the kind of neighbourhood they leave and enter but to identify the characteristics of the movers themselves.<sup>11</sup> Taking this step requires access to unit records, which we have accessed in this instance through the Survey of Dynamics and Motivation for Migration in New Zealand (Clark and Morrison, 2011).

#### Survey evidence

The Survey of Dynamics and Motivation for Migration was run as a supplement to the March 2007 quarter of the New Zealand Household Labour Force Survey (HLFS) between 7 January and 7 April 2007. The HLFS routinely collects basic demographic and employment information from around 30,000 individuals in 15,000 private households on a statistically representative basis from rural and urban areas throughout the country. In the March 2007 quarter the HLFS received a sample of 26,756 responses from individuals and all of those individuals were given the opportunity to take part in the supplement. This resulted in a total of 23,465 responses to the additional questions.<sup>12</sup>

Among the advantages of this survey is that it has allowed us to use the continuous form of the deprivation index, the scores. These scores are the weighted sums of the nine variables that

**Figure 2: The change in neighbourhood deprivation scores of movers ( $S_{ij}$ ) over the 2005–2006 period in relation to the deprivation score of their neighbourhood of origin ( $S_i$ )**



account for most of the variation in socio-economic deprivation levels across the country and have been attached to addresses of the surveyed movers. Whereas about half of all individuals change their residential address over the five-year period between censuses, in the case of the survey just under a quarter (24.8%) changed residence, over its two year migration period.

Figure 2 plots the change in the neighbourhood deprivation score experienced by the sample of movers against the score of their neighbourhood of origin. Each point on the scatter refers to someone who changed addresses over the time period. The cloud of points summarises the direction and magnitude of social mobility (in NZDep06 score terms) experienced by movers starting from neighbourhoods with different deprivation scores. The horizontal line crossing the Y axis  $Y=0$  separates those moving up and down in deprivation terms. Superimposed on Figure 2 as vertical lines are the boundaries delimiting the deciles of the deprivation index of the neighbourhood they left. The line running downwards through the scatter itself is the OLS regression fitted through the points:  $\Delta S_{ij} = a + b_1 S_i$ , where  $\Delta S_{ij}$  is the change in score resulting from the

move from the deprivation index score of origin  $i$  to the score of destination  $j$ .

Our estimate of the slope coefficient depicts the average reduction in neighbourhood deprivation experienced by movers starting in successively more deprived neighbourhoods. The maximum decrease in deprivation one can experience for every unit increase in  $S_i$  is  $\Delta S_{ij} = 0 - 1 \cdot S_i$ , a limit which is reflected in the bottom edge of points in the scatter. The slope of the estimated  $\beta$  is  $-0.6$  which is less than  $-1$ , which suggests that upward social mobility as we are defining it decreases the more deprived the neighbourhood of origin.

There are many reasons why social mobility, as measured here, might decline with the deprivation level of the starting neighbourhood. The most important of these are the characteristics of the movers themselves and the way they are sorted by neighbourhood. Highly deprived areas will contain poorer individuals who are likely to exhibit lower levels of education, and who may be younger and therefore at different stages in their life course, and also experiencing higher levels of employment instability. There may also be constraints particular to those identifying with particular ethnicities and the relationships which bind communities spatially. If we want to identify the influence



of the starting neighbourhood on social mobility, therefore, we need to try and control for most of these people-specific influences. Therefore we include in our regression models a range of personal attributes, including age, sex, type of family, the presence of school qualifications and post-graduate qualifications, being employed, level of reported income, and whether the respondent was born in New Zealand together with reported ethnicity (see Clark and Morrison, 2011).

Upon estimation we find that it is the young movers who are most likely to move to neighbourhoods with higher

of deprivation change, ethnicity still exhibits a depressing effect on upward mobility; that is, towards less deprived neighbourhoods.

What we go on to show in the source paper is that while people's characteristics play a central role in redistributing them among neighbourhoods, the deprivation level of the neighbourhood of origin continues to depress upward mobility. Even after we control for the age, sex, household type, education, employment and income of movers, as well as whether they were born in New Zealand and their ethnicity, the deprivation level of

find that high levels of neighbourhood deprivation lowers the average degree of improvement. The chance of Māori upgrading appears particularly sensitive to their neighbourhood, especially in the most deprived areas of the country.

#### Conclusions and policy implications

Local housing and educational markets are closely aligned and the positive externalities which the socio-economic segregation of households confers on those who can exercise choice means that people are not randomly distributed across neighbourhoods. The most highly clustered are the affluent, because they have most to gain from the benefits of clustering. By that very process, however, the poor, who end up in residual neighbourhoods, are denied such advantages. The resulting sorting patterns, we argue, result in reduced chances of upward mobility for those living in more deprived neighbourhoods regardless of the demographic and socio-economic characteristics of the individuals involved.

These conclusions serve to highlight the importance of *place* in, and raise important questions about the role the spatial clustering of socio-economic groups might be playing in, social mobility. The policy implications are potentially significant because they suggest that focusing attention solely on individuals and families may not be sufficient to address uneven chances of social mobility in New Zealand. While spatial clustering may benefit those who have the means to select where they want to live and have the human capital to build on the advantages of their proximity to each other, those whose choice is considerably more limited may be unable to exploit such advantages and may be faced with conditions and interactions which actually retard their mobility, over and above any specific characteristics individuals and families might bring to the process.

'Place' policy in modern public policy agendas, international commentator Professor Duncan Maclennan wrote for an Auckland planning audience recently, is not primarily about 'where are the poor, where are the problems'

## Local housing and educational markets are closely aligned and the positive externalities which the socio-economic segregation of households confers on those who can exercise choice means that people are not randomly distributed across neighbourhoods.

levels of deprivation. This is particularly the case if they head a one-parent or one-person household and have relatively lower levels of education. Much of this downward adjustment in the neighbourhood is due, of course, to their lower probabilities of employment and lower incomes. Not being employed is strongly associated with moving to areas with higher levels of deprivation, while income has a major positive effect in permitting moves from neighbourhoods with high to neighbourhoods with lower levels of deprivation. Being born in New Zealand amplifies the chances of upward mobility as measured.

The single most important attribute of the mover associated with the degree of improvement in deprivation terms is ethnicity - identifying not only with Māori or Pacific but also Chinese and Indian. Members of each of these ethnicities show a lower level of upward neighbourhood mobility relative to Europeans. Even with the above socio-economic variables included in the model

the neighbourhood of origin decreases the likelihood that people will move to a better neighbourhood.

The estimated slope coefficient in the fully controlled model of neighbourhood deprivation of -0.723 suggests that on average a mover experienced only a 72% chance of social mobility (as defined) for every increase in the deprivation score of their origin.<sup>14</sup> Other things being equal, the likelihood of Māori (n=768) moving to better neighbourhoods not only falls the more deprived their origin but the effect becomes more marked the more deprived their original neighbourhood.<sup>15</sup>

In summary, when it comes to social mobility as represented by movement up and down a scale of neighbourhood deprivation, *where* one begins matters. The chances of people changing residence may not be affected by how deprived their neighbourhood is, but their degree of upward mobility most certainly is. After controlling for those characteristics of movers which normally influence upward mobility we

but about 'how can we use place as a medium to manage better for the bigger objectives.' Place policy is about creative, effective public management and not distortionary, problem palliatives. It is as much concerned with managing growth and prosperity as decline and poverty. (Maclennan, 2008, p.6)

Maclennan's focus on place notwithstanding, the policy debate as it relates to place of residence in New Zealand, on neighbourhoods, has hardly begun even though we have long had programmes designed to spatially redistribute government revenue. The central message of the research reported here, however, is that the degree of redistribution and possibly the specific mix may not yet be sufficient to redress the negative effect of living in highly deprived neighbourhoods as measured by the ability to move to better neighbourhoods.

As Maré and Mawson (2001) suggested a decade ago, any policy initiative designed to address the negative influences of place *per se* would have to be preceded by a careful examination of the particular dimensions of deprivation that are associated with the places involved, as well as the access and labour market characteristics of their geographic location. This is good advice, for we still know too little about how people and places interact for the benefit of both. We still know too little about thresholds and specific mixes of people and place characteristics to recommend ways of increasing social mobility among those who live in deprived communities. We do know that neighbourhoods matter, but still know little about exactly how

they matter and what we can do about making them work positively, especially for individuals and families on low incomes. Hopefully, this latest research on the possible negative social mobility consequences of the way we distribute ourselves spatially will kindle a debate on the relationship between place of residence and social assistance in general in New Zealand.

- 1 This paper was written while Philip Morrison held the Henry Lang Fellowship at the Institute of Policy Studies. A number of the issues discussed here were introduced at the IPS workshop on residential sorting, neighbourhood effects and employment held as part of the 14th Conference on Labour, Employment and Work at Victoria University of Wellington, 30 Nov–1 Dec 2010.
- 2 Institute of Policy Studies, 'Does Inequality Matter? A policy forum', Wellington, 16 November 2010.
- 3 The dominant focus of those who write about social differentiation in the city is deprivation, the location of the poor. Yet, as Jane Jacobs has argued, in her prescient way, 'To seek the "causes" of poverty is to enter an intellectual dead end because poverty has no causes. Only prosperity has causes' (Jacobs, 1961, p.118, cited in Piachaud, 2002, p.1).
- 4 The following paragraph draws heavily on the description offered by White, Gunston et al. (2008), p.9. For references to the history and development of area-based indices see the references in White, Gunston et al. (2008), p.7.
- 5 Technically speaking, the index is the first principal component extracted from the eight measures, which is then scaled to have a mean score of 1,000 index points and standard deviation of 100 index points.
- 6 By the same argument it is possible for the deprivation decile of the area unit to change from one census to the next as a result of differential flows of individuals into and out of the area, as detailed in Morrison and Nissen (2010). The majority of area units do not change, however, and those that do move up or down one decile only. In other words, on a deprivation scale neighbourhoods (area units) are relatively stable over time and it is people who move.
- 7 Not included here are those individuals who could not provide their previous address in sufficient detail to allow a deprivation score to be attached. This inability is positively related to the respondents' deprivation score in 2006 leading to their systematic under enumeration in the above tables.
- 8 Technically this could be the same neighbourhood but such instances are relatively rare in this matrix.
- 9 This result is partly a function of decile 10 being an end state. While those originating in decile 10 can move to a lower decile, they cannot move any further 'downwards' in socio-economic terms. It is important in evaluating Figure 1, however, to recognise that the range of scores within decile 10 is actually wider than the range over all the other deciles combined and therefore that there is considerable scope for movement within decile 10.
- 10 We recognise the possibility that another origin-by-destination matrix exists documenting the behaviour of those who emigrate and immigrate. Although potentially discoverable, we do not yet know who leaves deprived neighbourhoods in New Zealand for better neighbourhoods in Australia, for example, or what the reverse pattern might look like when Australians settle in New Zealand. It is not impossible to imagine, for example, that by confining our analysis to New Zealand we may in fact be underestimating social mobility in neighbourhood mobility terms among those

- originating in New Zealand's more deprived neighbourhoods simply because we do not track their international mobility.
- 11 We show in the source research that the probability of moving *per se* is largely independent of the neighbourhood deprivation level.
  - 12 A full set of tabulated results from this survey are downloadable from the Statistics New Zealand web site: <http://www.stats.govt.nz/>. Search on: Survey of Dynamics and Motivations for Migration in New Zealand. Also see the complementary paper that also uses the unit records from this survey: Morrison and Clark (2011).
  - 13 A comparison of the averages of movers and stayers combined shows that movers are typically younger (37 < 46.6 years), less likely to be couples or one-person households but correspondingly more likely to be one-parent households and other households. They are more likely to have left school with at least one qualification and have post-school qualifications; however, they are less likely to be among the higher-income groups. They are also less likely to be New Zealand-born or identify as European and are correspondingly more likely to identify as an ethnic minority. Finally, most variables are measured at the point of interview (hence Xj) but because dates of moves are scattered randomly over the two-year window there is unlikely to be a systematic bias resulting from this timing.
  - 14 The results are almost completely independent of the physical distance people move when they change neighbourhoods.
  - 15 Technically, when we enter Si as a quadratic in the Māori-only regression we find that Sij declines at a diminishing rate with increases in Si. Both coefficients are statistically significant. Interestingly, such non-linearity could not be identified in the case of Pacific movers, raising the possibility that the more deprived neighbourhoods affecting M ori mobility are those located outside the major cities.

### Acknowledgements

I wish to acknowledge the support of the Hodge Fellowship awarded by the Institute of Policy Studies and the ongoing support of the directors who served over the tenure of the award. The census data reported here was kindly prepared by Kirsten Nissen, Department of Statistics, who co-authored the census paper. I have also appreciated the encouragement of Professor William Clark, University of California Los Angeles, who co-authored the survey paper. The outcomes of the Hodge Fellowship project as a whole are dedicated to Emeritus Professor Harvey S. Franklin, whose own work as a geographer remains an inspiration.

### References

Abramson, A.J., M.S. Tobin et al. (1995) 'The changing geography of metropolitan opportunity: the segregation of the poor in U.S. metropolitan areas 1970–1990', *Housing Policy Debate*, 6, pp.45–72

Atkinson, A.B. and A. Leigh (2005) *The Distribution of Top Incomes in New Zealand*, Canberra: Centre for Economic Policy Research, ANU

Badcock, B. (1997) 'Recently observed polarising tendencies and Australian cities', *Australian Geographical Studies*, 35, pp.243–59

Ballantyne, S., S. Chapple, D. Maré, J. Timmins (2003) *Movements Into and Out of Child Poverty in New Zealand: results from the Linked*

*Income Supplement*, Motu working paper 03-13, Wellington: Motu Economic and Public Policy Research

Baum, S. (1997) 'Sydney, Australia – a global city? Testing the social polarisation thesis', *Urban Studies*, 34, pp.1881–902

Benabou, R. (1996) 'Heterogeneity, stratification and growth: macroeconomic implications of community structure and school finance,' *American Economic Review*, 86, pp.584–609

Biddle, N., S. Kennedy et al. (2001) *Neighbourhood Income Inequality in Australian Capital Cities*, Ottawa: Statistics Canada Workshop

Blakely, T. and N. Pearce (2002) 'Socio-economic position is more than just NZDep,' *New Zealand Medical Journal*, 115, pp.109–11

- Boggers, S., M. Corcoran et al. (1999) *Cycles of Disadvantage?*, Wellington: Victoria University Press for the Institute of Policy Studies
- Clark, W.A.V. and P.S. Morrison (2011) 'Residential sorting, neighbourhood effects and social mobility: evidence from a large scale survey,' submitted to *Urban Studies*
- Dorling, D. and P. Rees (2003) 'A nation still dividing: the British census and social polarisation 1971-2001', *Environment and Planning A*, 35, pp.1287-313
- Durlauf, S.N. (2004) 'Neighbourhood effects', in J.V. Henderson and J.F. Thisse (eds), *Handbook of Regional and Urban Economics 4*, Amsterdam: Elsevier
- Forster, C. (2006) 'The challenge of change: Australian cities and urban planning in the new millennium', *Geographic Research*, 44 (2), pp.174-80
- Frank, R.H. (2005) 'Positional externalities cause large and preventable welfare losses', *American Economic Review*, 95 (2), pp.37-141
- Gibbons, M. (2010) *Income and Occupational Intergenerational Mobility in New Zealand*, working paper 10/6, Wellington: The Treasury
- Gleisner, B. (2010) 'Trends in income inequality and other socio-economic outcomes', paper presented at 'Does Inequality Matter? A policy forum', Institute of Policy Studies, Wellington, 16 November
- Hatfield, M. (1997) *Concentrations of Poverty and Distressed Neighbourhoods in Canada*, Hull, Quebec: Applied Research Branch, Strategic Policy, Human Resources Development Canada
- Hughes, M.A. (1987) 'Moving up and moving out: confusing ends and means about ghetto dispersal', *Urban Studies*, 24, pp.503-17
- Hulchanski, J.D. (2007) *The Three Cities within Toronto: income polarization among Toronto's neighbourhoods, 1970-2000*, Centre for Urban and Community Studies research bulletin, Toronto: University of Toronto
- Jacobs, J. (1961) *The Economy of Cities*, New York: Vintage Books
- Lupton, R. (2003) *Neighbourhood Effects: can we measure them and does it matter?*, London: Centre for Analysis of Social Exclusion
- MacLennan, D. (2008) 'Housing, economic change and the governance of metropolitan areas', presentation to CHRANZ, 2007, Institute for Governance, Ottawa
- Maloney, T. and G. Barker (2000) *Final Report on the Income Dynamics of Families in the Christchurch Health and Development Study*, Wellington: The Treasury
- Maloney, T., S. Maani and G. Pacheco (2003) 'Intergenerational welfare participation in New Zealand', *Australian Economic Papers*, 42 (3), pp.346-60
- Maré, D. and P. Mawson (2001) *Deprivation in New Zealand: regional patterns and changes*, Treasury working paper 01/09, Wellington: The Treasury
- Massey, D.S. (1996) 'The age of extremes: concentrated affluence and poverty in the twenty-first century', *Demography*, 33, pp.395-412
- Morrison, P.S. and W.A.V. Clark (2011) 'Internal migration and employment: macro flows and micro motives', *Environment and Planning A*, 43 (in press)
- Morrison, P.S. and K. Nissen (2010) 'Moving in and out of areas of deprivation: evidence from the New Zealand census', *New Zealand Population Review*, 36 (in press)
- Piachaud, D. (2002) *Capital and the Determinants of Poverty and Social Exclusion*, London: Centre for Analysis of Social Exclusion
- Randolph, B., D. Murray et al. (2007) *Defining Social Exclusion in Western Sydney: exploring the role of housing tenure*, research paper 10, Sydney: City Futures Research Centre, Faculty of the Built Environment, University of New South Wales
- Robb, J.H. and J. Cloud (1970) 'Occupational mobility in a New Zealand provincial borough', *Australian and New Zealand Journal of Sociology*, 6 (1), pp.49-51
- Salmond, C. and P. Crampton (2001) 'NZDep96: what does it measure?', *Social Policy Journal of New Zealand*, 17, pp.82-100
- Salmond, C. and P. Crampton (2002). 'Heterogeneity of deprivation within very small areas', *Journal of Epidemiology and Community Health*, 56, pp.669-70
- Smith, N. and S. Middleton (2007) *A Review of Poverty Dynamics Research in the UK*, London: Joseph Rowntree Foundation
- Thorns, D.C. (1989) 'The impact of home ownership and capital gains upon class and consumption sectors', *Environment and Planning: Society and Space*, 7, pp.293-312
- Treasury (2008) *Summary of Panel Discussion on Skills and Social Mobility*, proceedings of the 13th Labour, Employment and Work conference, Victoria University of Wellington
- White, P., J. Gunston et al. (2008) *Atlas of Socioeconomic Deprivation in New Zealand NZDep2006*, Wellington: Ministry of Health