

# Working Paper A08/02

## Applications & Policy

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James Raymer, Corrado Giulietti, Jamie Goodwin-White

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# White and Non-White Migration between Area Groups in England and Wales

James Raymer<sup>1</sup>, Corrado Giulietti<sup>2</sup> and Jamie Goodwin-White<sup>3</sup>

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## ACKNOWLEDGEMENTS

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## **WHITE AND NON-WHITE MIGRATION BETWEEN AREA GROUPS IN ENGLAND AND WALES**

### **1. INTRODUCTION**

White and non-white populations in England and Wales have very different distributions and growth patterns (McCulloch 2007; Owen 1997), driven by differences in international migration, internal migration and fertility levels. The research contained in this paper is primarily interested in the internal migration factor of ethnic population change and how it contributes to population dispersal or concentration within England and Wales. This research follows, extends and updates the work of several authors who have analysed the internal migration patterns in the United Kingdom during the 1980s and early 1990s (e.g., Champion 1996; Fotheringham et al. 2000; Fotheringham et al. 2004; Owen 1997; Robinson 1993; Stillwell et al. 1992) and, more recently, the dramatic changes occurring in ethnic population distributions and growth patterns (e.g., Dorling and Rees 2003; Rees and Butt 2003), including the exploration of the relationships between recent immigration and internal migration (Finney and Simpson 2007; Hatton and Tani 2005; Stillwell and Duke-Williams 2005). What separates this analysis from earlier ones is the focus on analysing origin-destination-specific flows and the consideration of area groups, rather than the more traditional focus on movements in and out of geographic regions or localities. We believe that both aspects provide further insights into the mechanisms behind the migration patterns and the consequences in terms of population redistribution.

To explore the patterns of white and non-white migration in England and Wales, we first study the aggregate patterns of internal migration over time to see if there have been any major shifts, particularly in areas associated with substantial ethnic population change. We then examine the major differences that exist between white and non-white migration patterns, disaggregated by high / low education groups and employed / unemployed groups. Our aim is to better understand the mechanisms behind white and non-white population redistribution.

The remainder of the paper is structured as follows. In Section 2, we describe the data collected for this study and the area groups we use to analyse population movements. The changes in white and non-white populations in each area group are examined in Section 3 by comparing the 1991 and 2001 population distributions. In Section 4, the aggregate internal migration patterns are described over time, followed by an analysis of the 2001 white and non-white migration patterns by education and employment status. The last section provides a summary and discussion.

### **2. MIGRATION FLOW DATA AND AREA GROUPS**

The migration flow data for England and Wales were obtained from the National Health Service Central Register (NHSCR) and the 2001 Census. An annual time series of flows between local authorities from 1991-2004 was available from the NHSCR for the total population. This time period was chosen for two reasons. First, net immigration increased continually and substantially during this time. And, second,

because it stopped at the time of the European Union enlargement. The 2001 Census provided more detailed migration flows (i.e., by ethnicity, education and employment). All data were aggregated to twelve area groups, defined by the Office for National Statistics (ONS 2005) and described in Table 1 (and discussed in Section 3). The ONS area groups greatly simplified our analysis and allowed us to focus on migration between particular types of places instead of the more usual movement across geographic space. See, for example, Vickers and Rees (2007) for a more detailed discussion of area classifications and methodologies. Examples of migration analyses that have used area groups in the UK can be found in Rees et al. (1996) and Raymer et al. (2007).

The construction of an annual times series of migration between area groups from 1991-2004 required adapting the NHS geography to the 12 ONS groups, which was complicated by three factors. First, the NHS migration data represented flows between Family Health Service (FHS) areas or health authority areas and not local authority districts, which were used by ONS to construct the twelve area groups. Second, the 1991-1998 NHS data were collected at a different geography (i.e., between 98 FHS areas) than the corresponding 1999-2000 (i.e., between 84 combined FHS and health authority areas) and 2001-2004 data (i.e., between 104 health authority areas). Third, both FHS and health authority areas are larger than local authority districts (i.e., in 2001, there were 104 health authorities and 376 local authorities). To obtain migration flows between area groups over time, we used three lookup tables that matched 2001 local authority districts with FHS areas, combined FHS and health authority areas or health authority areas. These lookup tables and 2001 local authority district populations were used to disaggregate the total flows between FHS or health authorities into area groups. The problem occurred when local authority district boundaries crossed two or more FHS or health authority boundaries. For these cases, we used the total flows of in- and out-migration to and from the health authorities to reallocate the population size in the local authority district. Our matching procedure was unable to account for migration between local authorities within a particular FHS area or health authority.

The NHS Patient Register Data (PRD) tables provide migration data at local authority district level but only from 1999 onwards. These data are used in Section 4.1 to examine origin-destination-specific migration flows over time. They were also used to test the accuracy of our matching procedure described above. For example, the number of persons migrating to each destination in 2001 differed by 2.5 percent for Prospering Smaller Towns, 1.7 percent for Prospering Southern England, 1.4 percent for Coastal and Countryside and 1.2 percent for London Suburbs. The residuals for the nine other area groups were smaller than one percent. These errors are largely caused by the relative numbers of local authorities affected in the conversion from a smaller geography into a larger one. Prospering Smaller Towns contain the largest number of local authorities, which explains why it exhibits the largest difference. These errors were consistent over time and, for the purposes of this paper, acceptable. The results of this approximation method are shown in the first part of Section 4.1.

Table 1. Description of area groups in England and Wales

Group	Location and Description	% Non-White 1991	% Non-White 2001	% Pop. Dist. 2001
Regional centres (RC)	Mostly cities in the North West (e.g., Leeds, Liverpool, Sheffield) and along the Southern coast (e.g. Cardiff, Bristol, Southampton, Brighton)	3.8	6.0	9.2
Centres with Industry (CI)	Mainly concentrated in the Greater Manchester Unitary Authority, West Yorkshire and West Midlands	13.8	19.2	10.8
Thriving London Periphery (TLP)	Comprises the Western and Southern outskirts of the Greater London, including cities, such as Oxford, Cambridge and Reading	7.7	12.8	2.9
London Suburbs (LSUB)	Mainly in the Northern periphery but also in the Eastern and Southern boundaries	21.1	31.5	5.4
London Centre (LCTR)	Eastern inner London	21.0	27.5	2.6
London Cosmopolitan (LCOS)	Western inner London and Brent	32.4	42.9	3.2
Prospering Smaller Towns (PST)	The largest group in terms of population and numbers of authorities. Includes part of the Yorkshire and the Humber, most of the Midlands and East Anglia and part of the South	1.5	2.4	23.6
New and Growing Towns (NGT)	Areas outside London (e.g., Crawley, Swindon, Gloucester), part of the Bedfordshire, Herefordshire, East Anglia and Thames estuary.	4.7	6.8	6.0
Prospering Southern England (PSE)	Mostly in the South East but also in some areas of the South West and East Anglia	2.6	4.3	9.3
Coastal and Countryside (CC)	Mostly North England, Wales and Cornwall and other coastal areas in the East	0.7	1.2	9.0
Industrial Hinterlands (IH)	Concentrated in the Tyne and Wear, Durham, part of Cumbria and Merseyside and South Wales	1.4	2.1	9.0
Manufacturing Towns (MT)	South Yorkshire, Derbyshire, Lincolnshire and part of North Wales	1.6	2.4	9.0
Total Population		5.9	8.7	100.0

Note, a UK local authority map of these area groups can be downloaded at:  
[http://www.statistics.gov.uk/about/methodology\\_by\\_theme/area\\_classification/la/maps.asp](http://www.statistics.gov.uk/about/methodology_by_theme/area_classification/la/maps.asp)

White and non-white<sup>4</sup> migration between area groups were obtained from a 2001 Census CD-ROM provided by the Office for National Statistics (ONS 2004, Table MG103). These flows represent changes in local authority residence at the time of the census by local authority residence one year earlier. Persons with origins or destinations outside England and Wales are not included nor are those who moved within the same local authority. Also, for disclosure reasons, migration tabulations of the census data are only available for basic characteristics of the population (e.g., age, sex and broad groups of ethnicity). These data are analysed in Section 4.2.

Finally, the white and non-white migration flows by education and employment of persons aged 16 to 49 years were obtained from the Small Area Microdata (SAM) sample, a 5% public use sample of the 2001 census. The obtainment of a university degree represented the criterion for high education. Unemployed persons are defined as those currently seeking work. Full-time students and other economically inactive people are excluded from the analyses. For sample size reasons, the SAM sample only provides migration between Government Office Regions<sup>5</sup> (GOR) and local authorities, meaning we could only compare the destination choices of the migrants and not the origin-destination patterns. These data are analysed in Section 4.3.

### **3. POPULATION CHANGE, 1991-2001**

This section explores the relationship between foreign and non-white population change in the twelve area groups of England and Wales by using information obtained from the 1991 and 2001 censuses. The corresponding native and white populations are used for comparison. The purpose of this analysis is to set the context for the internal migration patterns described in the next section. We do this by making a comparison between immigration and non-white population change and by identifying the area groups of white and non-white population change. Note, our analysis ignores the diversity of the white and non-white populations, which increased considerably during this time (McCulloch 2007).

As shown in Table 1, almost a quarter of the population in 2001 lived in Prospering Smaller Towns. The least populated area groups were Thriving London Periphery, London Centre and London Cosmopolitan, with each having about three percent of the total population living there. The remaining eight area groups each contained between five and eleven percent of the total population. The percentage distribution of non-whites varied considerably across area groups with high percentages in London Cosmopolitan, London Suburbs, London Centre and Centres with Industry. Between 1991 and 2001, the non-white percentage of the population increased from 5.9 percent to 8.7 percent and the relative distributions remained the same with the greatest percentages found in London Cosmopolitan (32-43 percent), London Suburbs (21-32 percent), London Centre (21-28 percent), Centres with Industry (14-19 percent) and Thriving London Periphery (8-13 percent). Because these areas contained high proportions of non-whites, they played a major role in driving their internal migration patterns (see Sections 4.2 and 4.3).

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<sup>4</sup> Includes Indian, Pakistani and Other South Asian, Chinese, Black, Mixed and Other

<sup>5</sup> England has nine regions: East Midlands, East, London, North East, North West, South East, South West, West Midlands, Yorkshire and the Humber.

Between 1991 and 2001, nearly half of the two million persons added to the UK population were foreign-born. The population that were considered non-white contributed to an even larger proportion of the population growth (a consequence of both net immigration and natural increase). The rates of growth ( $r$ ) for foreign-born, UK-born, non-white and white populations are set out in Figure 1.<sup>6</sup> All areas exhibited foreign-born and non-white population growth, whereas Centres with Industry, London Suburbs and Industrial Hinterlands exhibited both UK-born and white population decline. The white population also decreased in London Cosmopolitan. The growth of the foreign-born and non-white populations were highest in the London area groups and in Centres with Industry, whereas the growth of UK-born and white populations were highest in Prospering Smaller Towns, New and Growing Towns, Prospering South East and Coastal and Countryside.

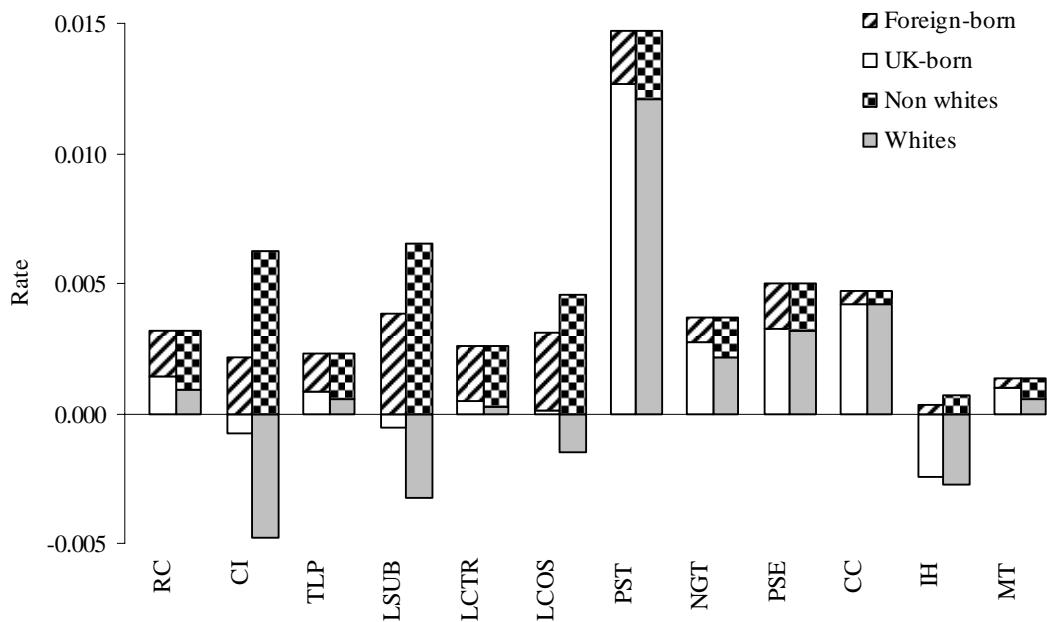


Figure 1. Foreign-born, UK-born, non-white and white population growth rates for area groups in England and Wales, 1991-2001

Source: 1991 and 2001 Censuses.

Note: RC = Regional Centre, CI = Centres with Industry, TLP = Thriving London Periphery, LS = London Suburbs, LCTR = London Centre, LCOS = London Cosmopolitan, PST = Prospering Smaller Towns, NGT = New and Growing Towns, PSE = Prospering Southern England, CC = Coastal and Countryside, IH = Industrial Hinterlands and MT = Manufacturing Towns.

<sup>6</sup>  $r_{ib} = \left( P_{ib}^{2001} - P_{ib}^{1991} \right) / \sum_{ib} P_{ib}^{1991}$ , where  $P$  denotes population,  $i$  denotes area group and  $b$  denotes birthplace (UK-born or foreign-born).

## 4. INTERNAL MIGRATION

The patterns of internal migration over time and across subpopulation groups are described in this section to identify key trends and differences. Our analyses focus on the origin-destination-specific flows between area groups. The analysis in Section 4.1 focuses on the total population and its migration between area groups from 1991 to 2004. Section 4.2 describes the 2000-2001 patterns of white and non-white migration between area groups, which is expanded in Section 4.3 to include education and employment status. Note, although not covered in this paper, there are important age-related migration patterns at work. For example, the migration to and around London, Centres with Industry and Manufacturing Towns is likely to be dominated by young adults moving for work-related reasons, whereas much of the migration to Coastal and Countryside is likely to be return or retirement migration of older persons. These patterns are also affected by the age composition of the populations, with the white population being considerably older than the non-white population.

Origin-destination-specific flows of migration between area groups during the 2000-2001 period are set out in Table 2 for the total population. The area group that received and sent the most migrants during 2000-2001 was Prospering Smaller Towns, accounting for 23 percent and 25 percent of the total in-migration and out-migration flows, respectively. This large amount is not surprising as this area group also represented about 24 percent of the population in 2001 (Table 1). The area group that received and sent the least amount of migrants was Thriving London Periphery, accounting for only four percent of the flows in each case. Again, this is not surprising given its relatively small population size. The patterns of migration between area groups showed that, for example, nearly a third of migrants from Centres with Industry migrated to Prospering Smaller Towns, whereas only about 10 percent of migrants from London Suburbs did so. Twenty-five percent of all migrants from London Cosmopolitan went to London Suburbs, however, only about 1 percent of all migrants from Manufacturing Towns did the same. A simple explanation for the high percentage of migrants from London Cosmopolitan to London Suburbs could be the close geographic proximity. Manufacturing Towns are located in areas relatively far away from London. The much smaller proportion going to Prospering Smaller Towns from London Suburbs is not as clear but could be explored.

### 4.1 Total Migration between Area Groups, 1991-2004

In this subsection, the migration patterns of the total population are described over time. The proportions of migrants from and to each area group from 1991 to 2004 are set out in Figure 2. Here, the shadings in the charts are to remind the reader of the different geographies from which the data were collected, i.e., FHS (1991-1998), FHS / health authorities (1999-2000) and health authorities (2001-2004). Despite our crude method to overcome the inconsistencies in geography over time, which may be responsible for some of the slight "jumps" in the patterns between 1998 and 1999 and between 2000 and 2001, the patterns remained remarkably stable during the entire fourteen-year period. For both origins and destinations, the highest proportions came from Prospering Smaller Towns (20-24 percent) and the lowest came from Thriving London Periphery (4-5 percent).

*Table 2. Migration (in thousands) between area groups in England and Wales, total population, Census 2001*

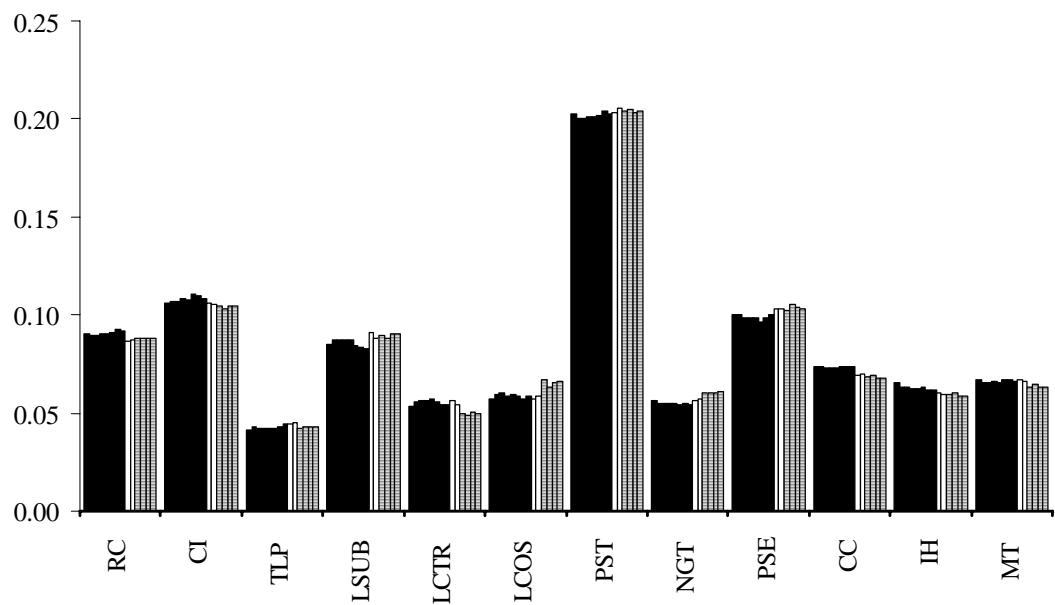
Origin	Destination													Total
	RC	CI	TLP	LS	LCTR	LCOS	PST	NGT	PSE	CC	IH	MT		
RC	17	18	5	7	7	6	59	7	16	21	19	16	198	
CI	18	42	3	6	4	5	64	7	7	12	8	21	197	
TLP	6	3	6	12	8	6	14	5	26	6	1	1	95	
LSUB	9	8	18	23	16	20	19	14	26	8	2	2	164	
LCTR	5	3	9	23	34	30	9	4	11	4	1	1	133	
LCOS	6	6	8	32	22	23	8	8	8	4	1	2	128	
PST	64	54	11	10	10	8	177	33	43	48	25	37	519	
NGT	9	6	4	6	3	3	40	16	24	10	2	5	129	
PSE	22	8	19	14	10	7	59	23	73	21	4	6	265	
CC	26	10	3	3	3	2	43	6	12	46	8	8	170	
IH	19	8	2	2	1	1	28	2	4	10	26	13	117	
MT	16	19	1	2	1	1	38	4	5	10	12	23	133	
Total	217	184	90	141	119	113	558	127	255	198	109	136	2,246	

Note: RC = Regional Centre, CI = Centres with Industry, TLP = Thriving London Periphery, LS = London Suburbs, LCTR = London Centre, LCOS = London Cosmopolitan, PST = Prospering Smaller Towns, NGT = New and Growing Towns, PSE = Prospering Southern England, CC = Coastal and Countryside, IH = Industrial Hinterlands and MT = Manufacturing Towns

The time trends found in the proportions from each area group (or "origin proportions") resembled those to each area group (or "destination proportions"). The main differences were that the origin proportions for London Centre, Coastal and Countryside and Industrial Hinterlands steadily declined (see Figure 2A), whereas they increased in London Suburbs, London Cosmopolitan, New and Growing Towns and Prospering Southern England (particularly since 2000). As for the destination proportions (Figure 2B), there were small declines in Centres with Industry, London Suburbs, London Centre and London Cosmopolitan, a large drop between 2000 and 2001 in Prospering Southern England and increases in Prospering Smaller Towns, New and Growing Towns, Industrial Hinterlands (since 2000) and Manufacturing Towns (since 1995).

The proportions of migration from each origin to all destinations exhibited considerable stability for the 1999-2004 period (for which we have data consistently collected at the local authority district level provided by the NHS PRD tables), as illustrated for the migration proportions from and to London Suburbs (i.e., areas with high proportions of non-whites) in Figure 3. Here, over 50 percent of migrants to London Suburbs came from local authorities in other London Suburbs (16-18 percent), London Centre (15 percent) and London Cosmopolitan (24-26 percent). General increases were found in the out-migration proportions from London Suburbs and London Cosmopolitan, with corresponding declines from Prospering Smaller Towns and Prospering Southern England. The proportions of migrants from London Suburbs to each area group destination (Figure 3B) were different from the origin proportions in Figure 3A. First, the overall patterns were more evenly distributed. Second, unlike the proportions from each area group origin, there were no major changes exhibited over time, with the (slight) exceptions of migration to other local authorities in London Suburbs, Industrial Hinterlands and Manufacturing Towns.

A. Proportions from each origin



B. Proportions to each destination

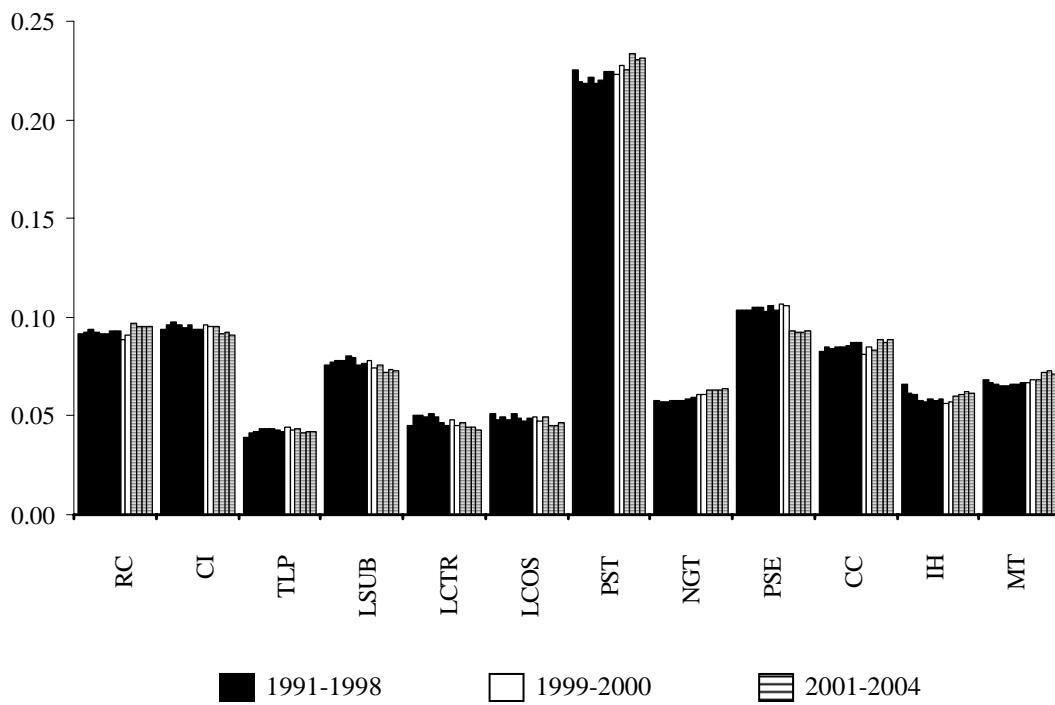
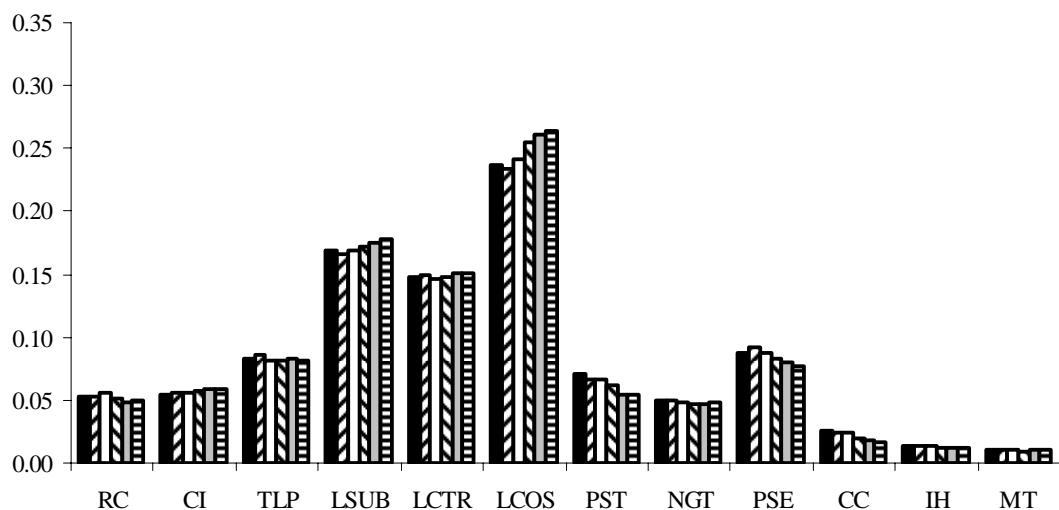


Figure 2. Origin and destination proportions for area group migration in England and Wales, 1991-2004

A. Proportion from each origin to London Suburbs



B. Proportion from London Suburbs to each destination

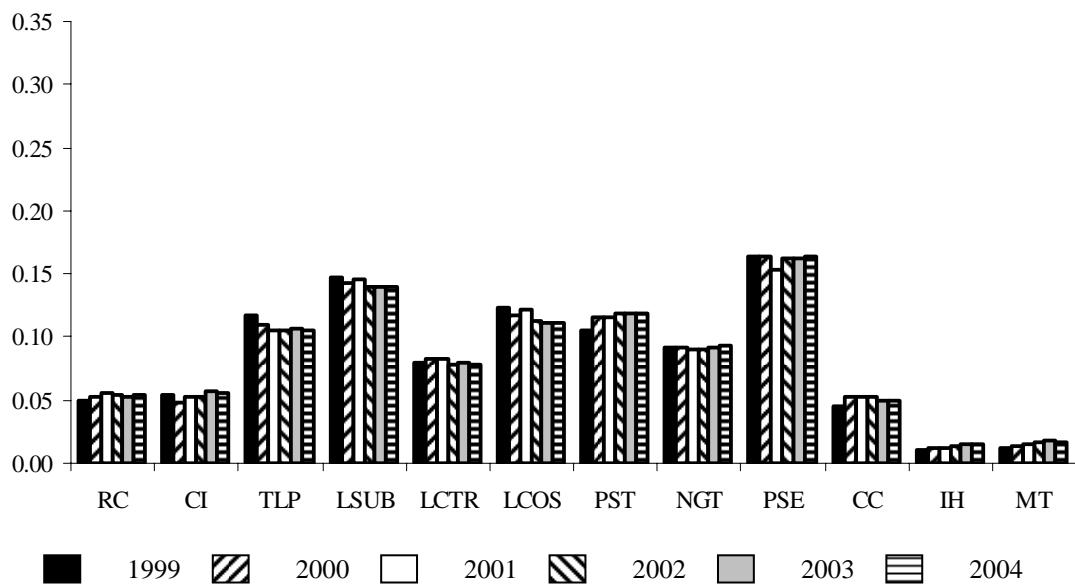
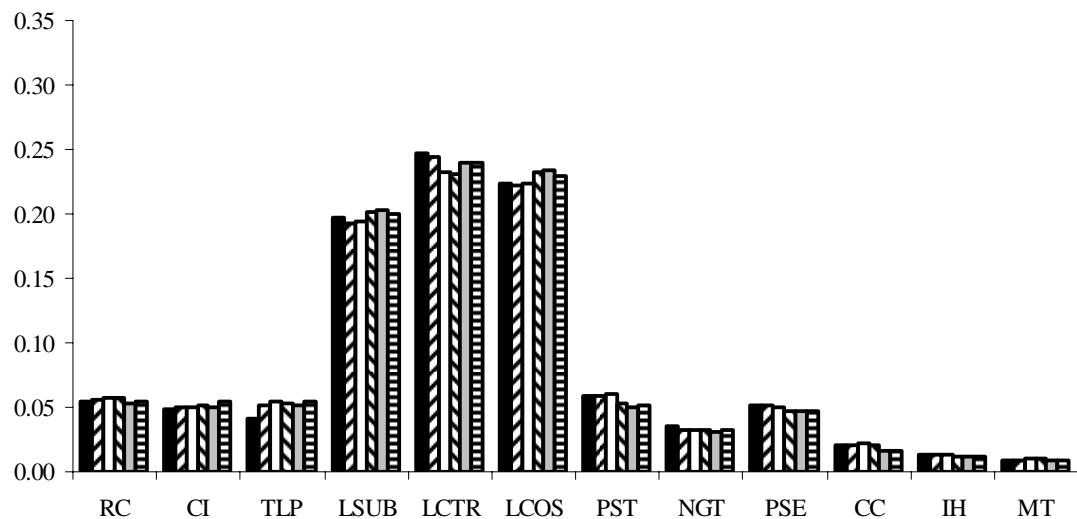


Figure 3. Origin and destination proportions for London Suburbs, 1999-2004

As another example of migration patterns from and to areas with relatively large numbers of non-whites, the proportions of migration from and to London Cosmopolitan are set out in Figure 4. Again, the most important origins and destinations, in both cases, were the main London area groups, i.e., London Suburbs, London Centre and London Cosmopolitan. The destinations of migrants from London Cosmopolitan were also relatively focused with the highest proportions of migrants going to London Suburbs. As for the patterns over time, the majority of proportions remained stable with some exceptions (e.g., the decreases in the proportions from London Cosmopolitan to London Cosmopolitan and increases to New and Growing Towns in Figure 4B).

A. Proportion from each origin to London Cosmopolitan



B. Proportion from London Cosmopolitan to each destination

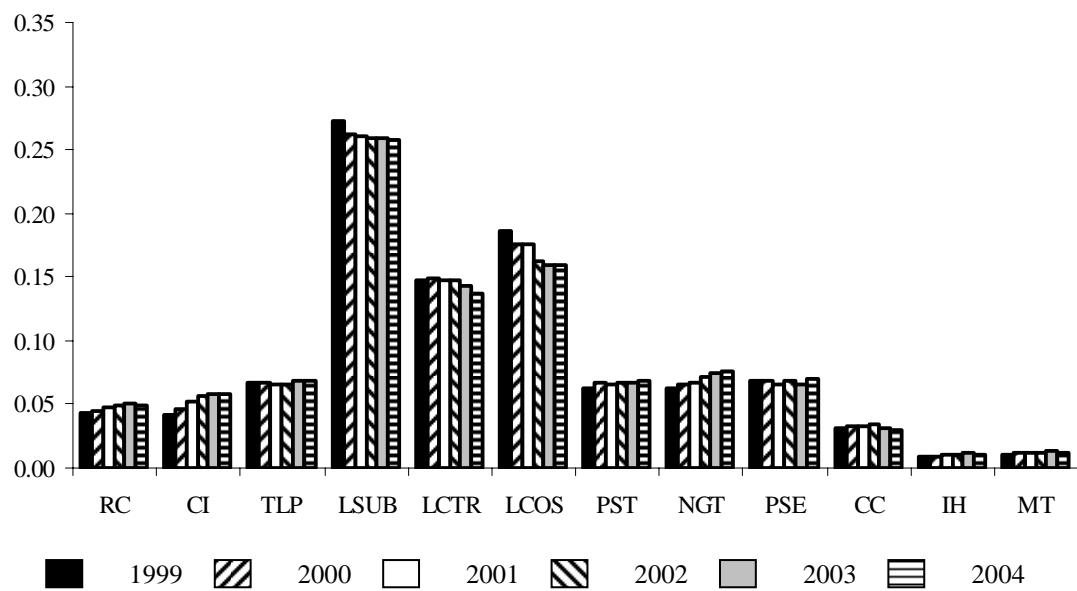
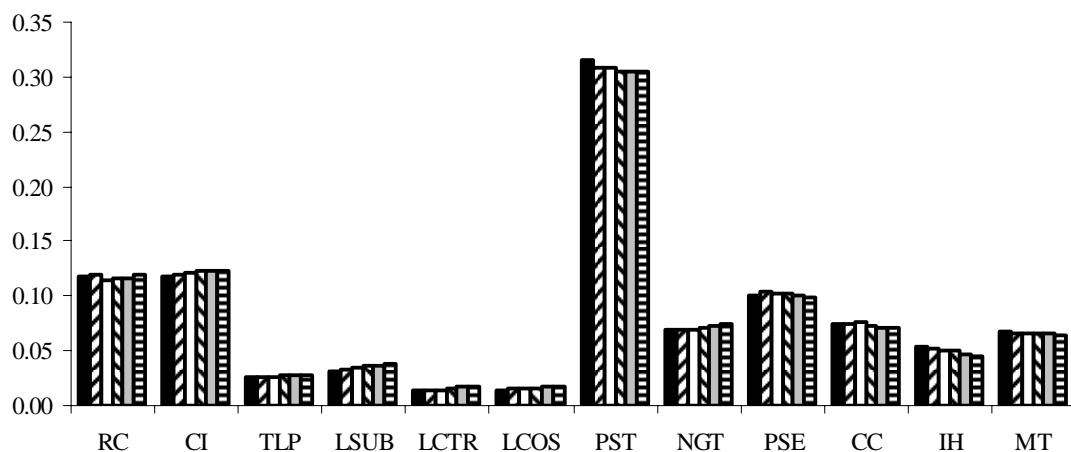


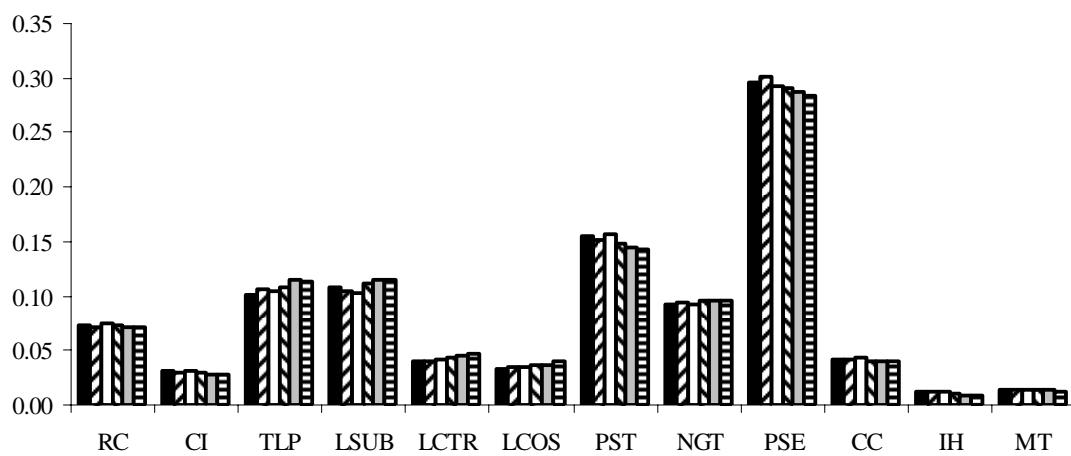
Figure 4. Origin and destination proportions for London Cosmopolitan, 1999-2004

In Figure 5, the proportions of migrants from each area group to Prospering Smaller Towns, Prospering Southern England and Coastal and Countryside (i.e., areas with low percentages of non-whites) are set out for the 1999-2004 period. Here, we find very different patterns than those presented in Figures 3 and 4 but, again, strong stability in the patterns over time. More than 30% of migrants to Prospering Smaller Towns came from other local authorities in the same area group. A similar pattern exists for Prospering Southern England but with higher proportions from London area groups. For migration to Coastal and Countryside, however, the proportions coming from Prospering Smaller Towns and Coastal and Countryside were about the same (both around 25 percent).

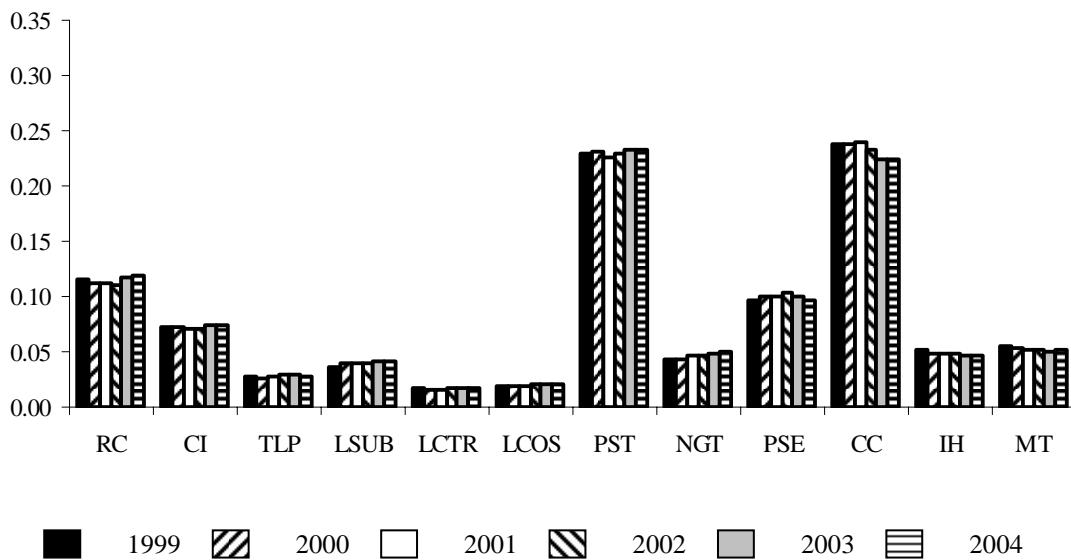
A. Proportion from each origin to Prospering Smaller Towns



B. Proportion from each origin to Prospering Southern England



C. Proportion from each origin to Coastal and Countryside



■ 1999    ■ 2000    ■ 2001    ■ 2002    ■ 2003    ■ 2004

Figure 5. Proportions from each area group to Prospering Smaller Towns, Prospering Southern England and Coastal and Countryside, 1999-2004

## 4.2 White and Non-White Migration between Area Groups, 2000-2001

This subsection explores the differences in migration between area groups for whites and non-whites by using data obtained from the 2001 Census (ONS 2004). We first compare the patterns of net migration and destination proportions and then show some examples of origin-destination-specific patterns, including flows disaggregated by major regions in England and Wales.

During the 2000-2001 period, the proportion of the white population moving across a local authority boundary was 4.2 percent. The corresponding proportion for non-whites was 4.8 percent. The levels of white and non-white net migration and destination proportions for each area group are set out in Figure 6. The net migration totals for each area group are presented in the first panel, which shows that areas of growth or decline due to net migration were different for whites and non-whites in Centres with Industry, Thriving London Periphery, London Suburbs, New and Growing Towns and Prospering Southern England. In all of these cases, net migration was positive for non-white migration and negative for white migration. Not surprisingly, given the much larger share of the population, the levels of net migration were dominated by the white population.

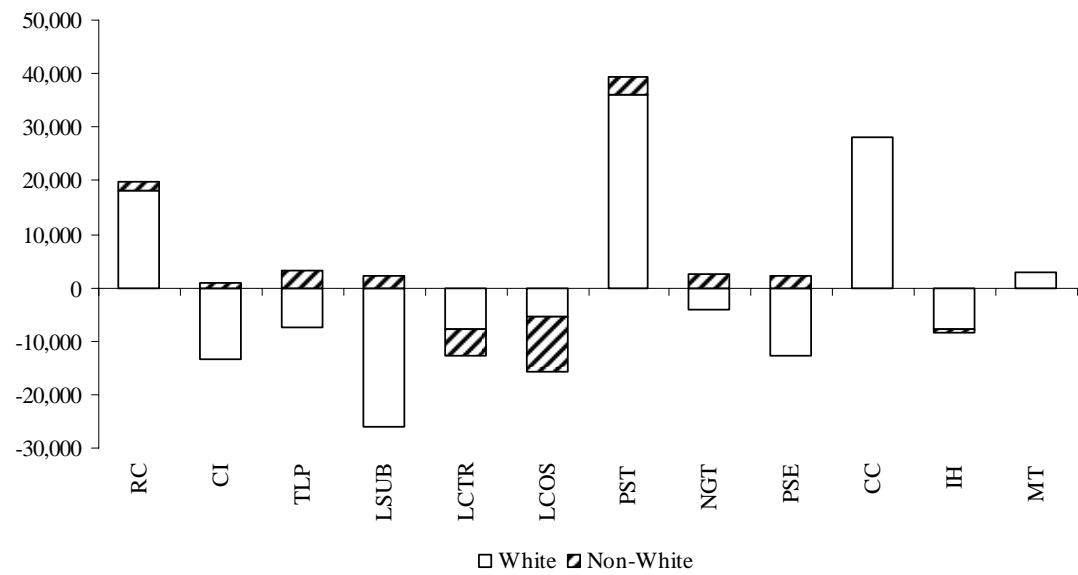
To provide a different picture of the migration patterns, the white and non-white migration proportions to each destination are set out in the second panel (Figure 6B). Here, whites were much less likely to migrate to the London areas (particularly to London Suburbs) and to the Centres with Industry (i.e., areas with high percentages of non-whites), whereas they were much more likely to choose Prospering Smaller Towns, Prospering Southern England and Coastal and Countryside (i.e., areas with low percentages of non-whites).

Consider next the proportions of white and non-white migration from London Centre, London Cosmopolitan and London Suburbs to area groups in the North, Centre and South regions<sup>7</sup> of England and Wales during 2000-2001 (Figure 7). Nearly all migrants from the three London area groups, regardless of ethnicity, remain in the South region (87-94 percent). Non-whites were more likely to migrate to local authorities in London Suburbs and London Cosmopolitan, whereas whites were more likely migrate to the Prospering Smaller Towns, New and Growing Towns, Prospering Southern England and Coastal and Countryside area groups. Finally, for migrants to regions outside the South, whites were particularly attracted to Prospering Smaller Towns in the Centre region and non-whites to Centres with Industry in the Centre region.

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<sup>7</sup> The North region is comprised of the North East, North West and Yorkshire and the Humber; the Centre region is formed by the East Midlands, West Midlands and Wales and the South region includes the East Anglia, London, the South West and the South East.

A. Net migration



B. Proportions to each destination

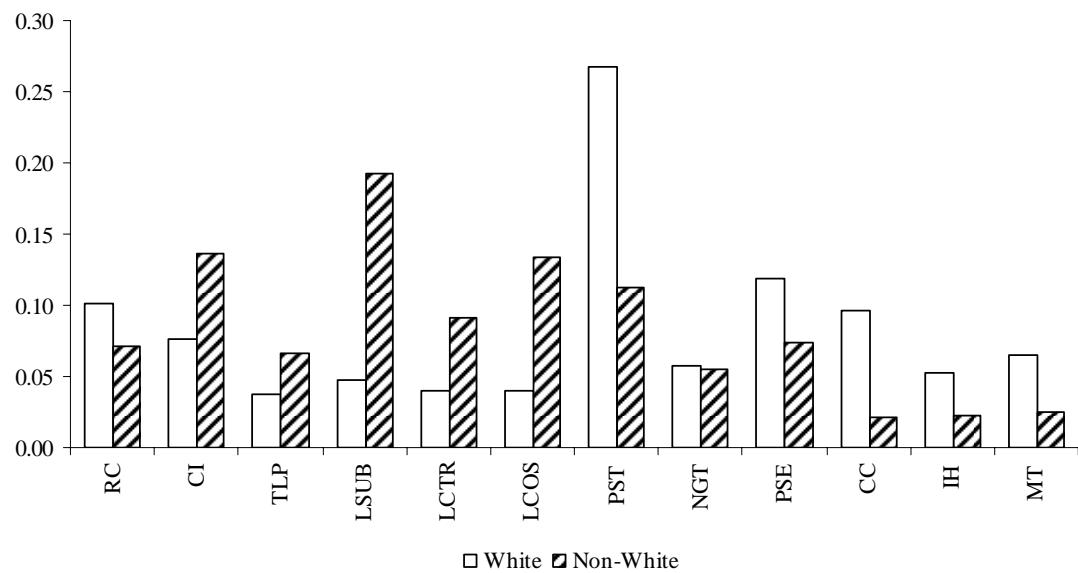
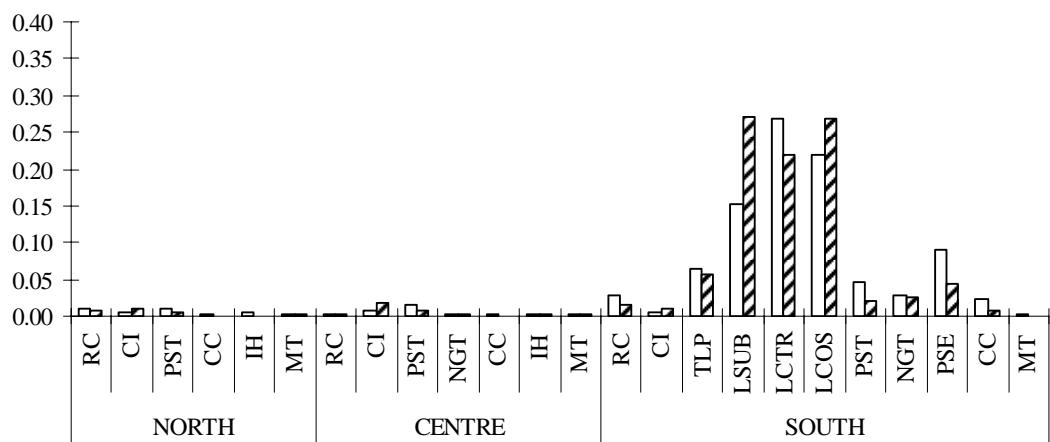
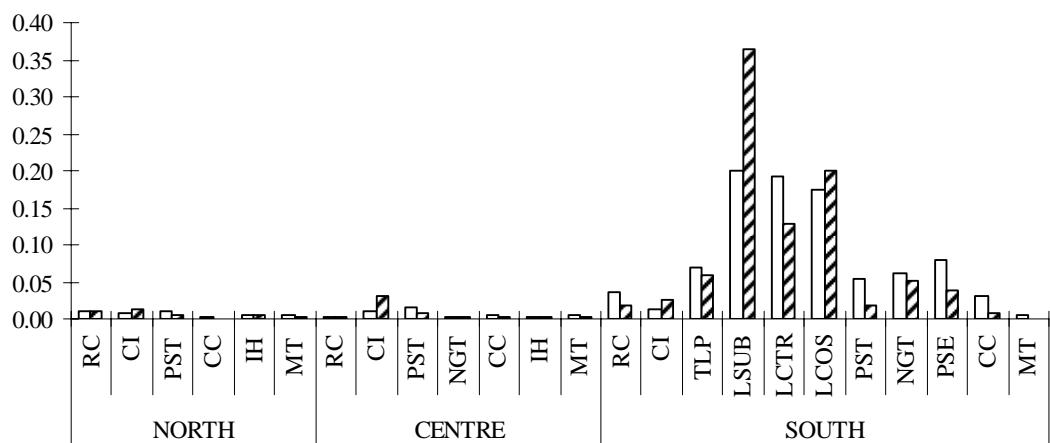


Figure 6. Net migration and destination proportions by area group for the white and non-white populations in England and Wales, 2001

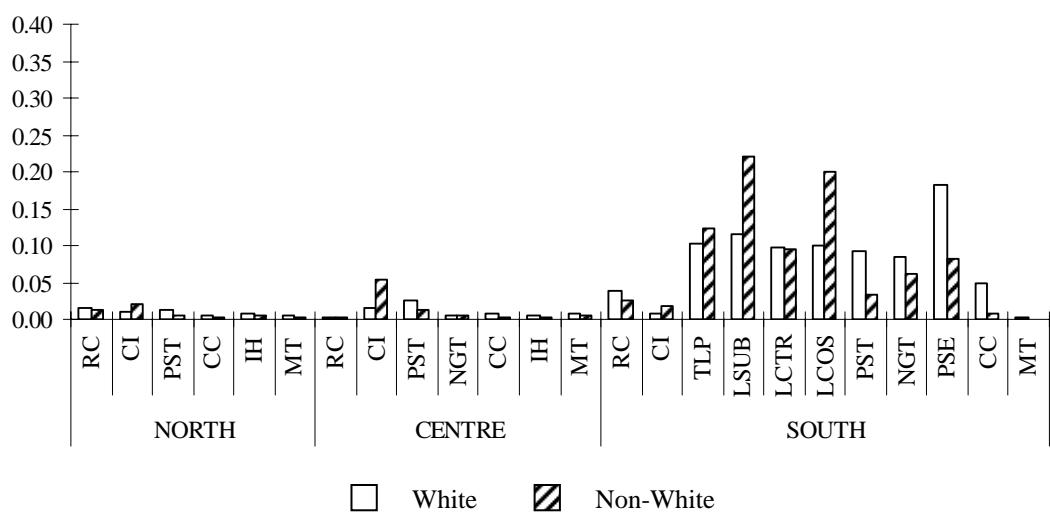
A. From London Centre



B. From London Cosmopolitan



C. From London Suburbs



□ White      ▨ Non-White

Figure 7. Proportions of white and non-white migration from London Centre, London Cosmopolitan and London Suburbs in the South region to area groups in the North, Centre and South regions of England and Wales, 2001

In Figures 8 and 9, we continue our regional analysis by showing the proportions of migration from Regional Centres and Prospering Smaller Towns in the North, Centre and South regions, respectively, to the various area groups by region. Here, whites were more likely to remain in the origin region than were non-whites, particularly in the North and Centre origins. For example, 63 percent of all whites from Regional Centres in the North region remained in the region, whereas only 49 percent of non-whites did. For the corresponding migrants from the Centre region, 60 percent of all whites remained in the region, whereas only 36 of non-whites did. In both cases, non-whites were much more likely to go to area groups on the South region. In the South region, the patterns differed from the North and Centre regions in that 84 percent of all whites remained but only 77 percent of non-whites remained.

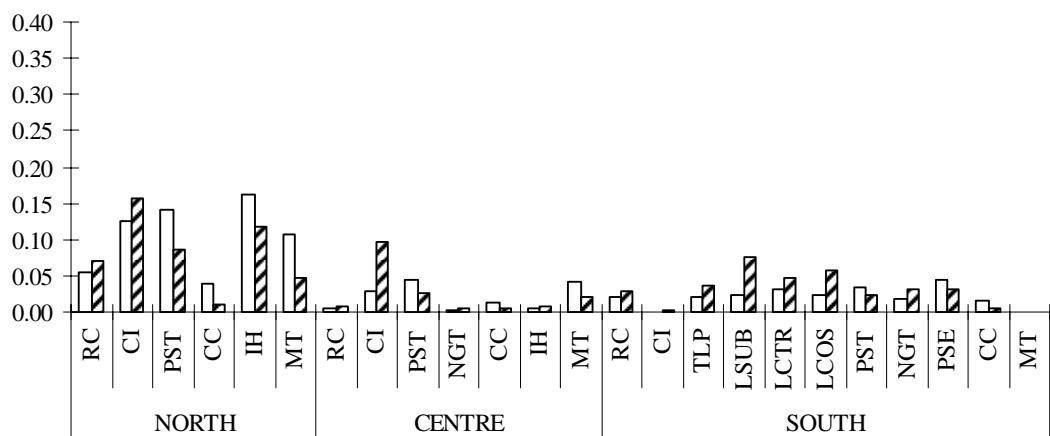
#### **4.3 White and Non-White Migration by Education and Employment Statuses, 2000-2001**

The 2001 SAM was used to obtain inter-area group migration patterns of migrants aged 16 to 49 years by ethnicity, education and employment status. The three-level breakdown makes the pattern of migration between whites and non-whites more complex and interesting, as illustrated for the proportions of migrants to each area group destination set out in Table 3. Both education and employment mattered in terms of destination choice, but differently for whites and non-whites. For whites, high education migrants were more focused in their choice of destinations than low education migrants, whereas for non-white migrants, education did not make much difference. For high education migrants, employment status did not affect destination preferences for whites, but for non-whites, it meant that they were much more likely to go to Centres with Industry. For low education whites, unemployed migrants were much more focused in their destination choices than were employed migrants, who were the least focused out of all migrants in this analysis. For low education non-whites, the opposite was true. In summary, these results show that non-white migration between area groups in England and Wales are less affected by differences in education levels and employment status than are the corresponding white migration patterns. The reasons behind these finding would be interesting to explore.

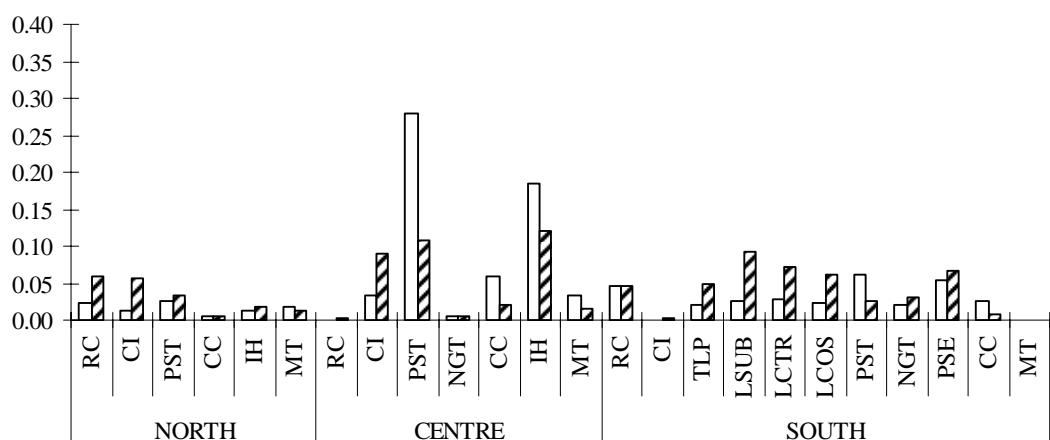
#### **5. CONCLUSION**

In this paper, we have described migration over time and for the white and non-white populations. We found remarkable stability in the migration between area groups over time but differences between whites and non-whites and, furthermore, by education and employment. Our analyses focused on the origin-destination-specific patterns between area groups, which allowed us to compare the types of places different migrants choose.

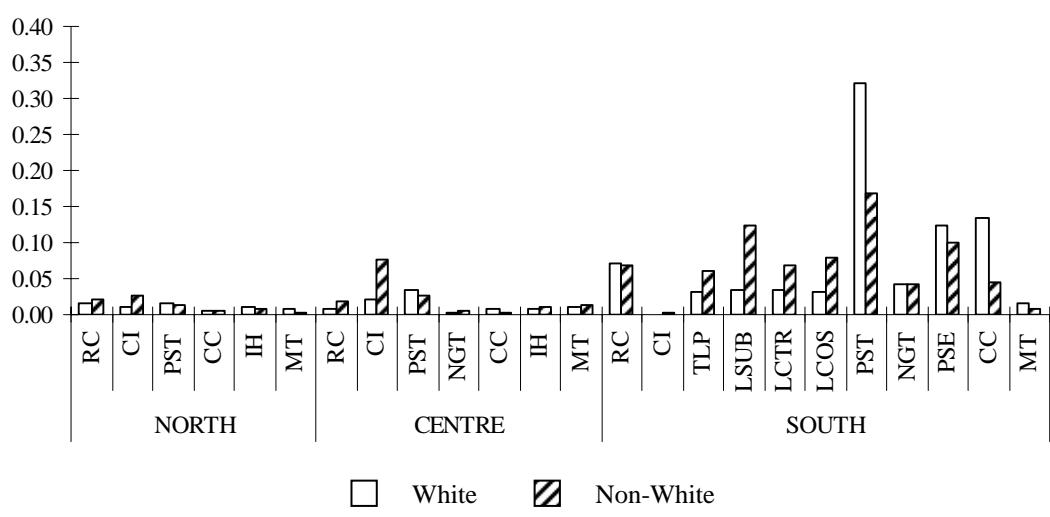
A. From North



B. From Centre



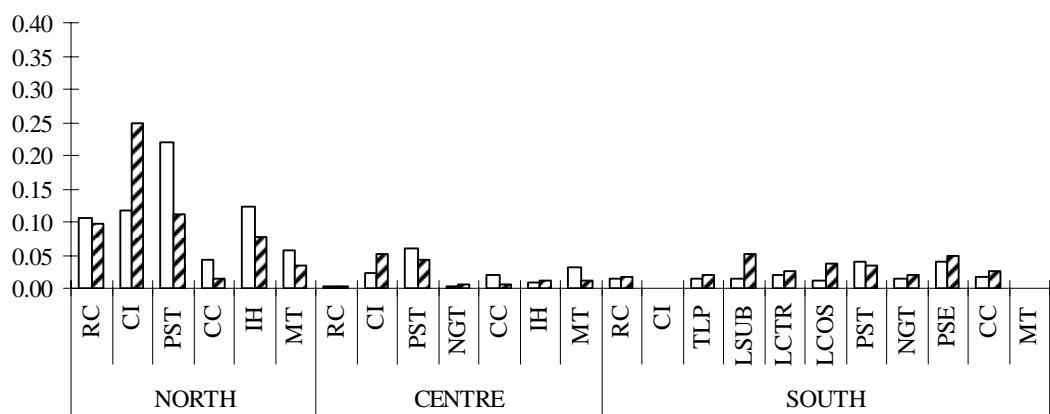
C. From South



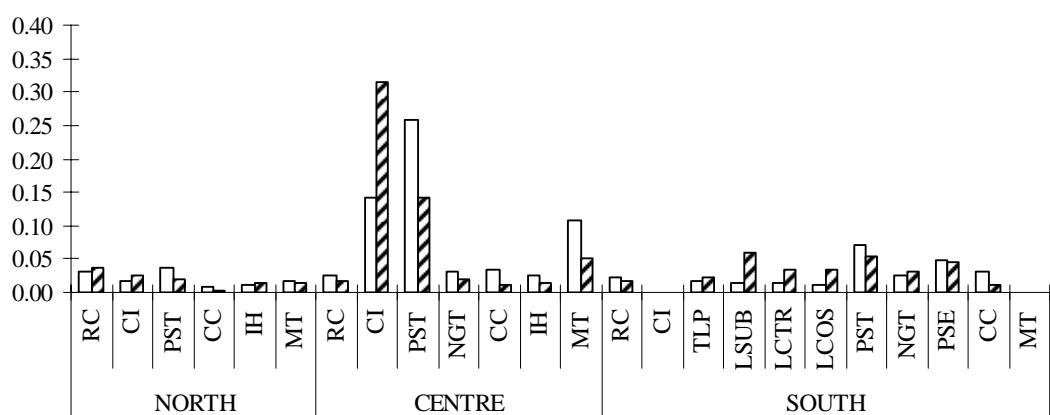
□ White      ■ Non-White

Figure 8. Proportions of migration from Regional Centres in the North, Centre and South regions to area groups in the North, Centre and South regions of England and Wales, 2001

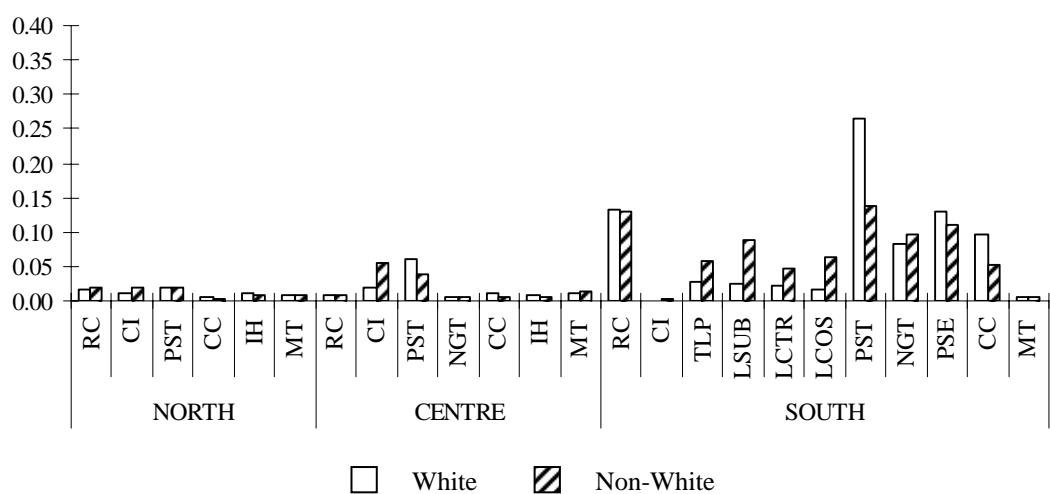
A. From North



B. From Centre



A. From South



□ White      ▨ Non-White

Figure 9. Proportions of migration from Prospering Smaller Towns in the North, Centre and South regions to area groups in the North, Centre and South regions of England and Wales, 2001

*Table 3. Proportions of white and non-white migration to each area group in England and Wales by education and employment statuses, SAM 2001*

High Educ.	Empl-oyed	RC	CI	TLP	LS	LCTR	Destination						
							LCOS	PST	NGT	PSE	CC	IH	MT
<b>A. White</b>													
Yes	Yes	0.09	0.07	0.05	0.08	0.10	0.08	0.23	0.04	0.13	0.06	0.04	0.05
	No	0.12	0.07	0.04	0.06	0.06	0.06	0.23	0.04	0.07	0.12	0.07	0.06
No	Yes	0.10	0.08	0.03	0.04	0.02	0.02	0.29	0.07	0.13	0.09	0.05	0.07
	No	<b>0.14</b>	<b>0.12</b>	0.02	0.03	0.03	0.02	<b>0.21</b>	0.05	0.07	<b>0.14</b>	0.09	0.09
<b>A. Non-White</b>													
Yes	Yes	0.06	0.09	0.08	0.22	0.11	0.14	0.11	0.06	0.08	0.02	0.02	0.02
	No	0.08	0.18	0.07	0.22	0.10	0.13	0.12	<i>0.01</i>	<i>0.04</i>	<i>0.01</i>	<i>0.02</i>	<i>0.03</i>
No	Yes	0.05	0.12	0.07	0.22	0.06	0.13	0.11	0.08	0.08	0.03	0.02	0.02
	No	0.09	0.22	0.06	0.16	0.12	0.18	0.06	0.04	0.04	0.02	<i>0.01</i>	<i>0.02</i>

Notes: (1) figures in italic refer to cells with less than 10 observations; (2) RC = Regional Centre, CI = Centres with Industry, TLP = Thriving London Periphery, LS = London Suburbs, LCTR = London Centre, LCOS = London Cosmopolitan, PST = Prospering Smaller Towns, NGT = New and Growing Towns, PSE = Prospering Southern England, CC = Coastal and Countryside, IH = Industrial Hinterlands and MT = Manufacturing Towns; (3) High education refers to those with a university degree.

To understand population change, it is important to examine the interactions between origins and destinations. Traditionally, origin-destination-specific migration has been analysed at the regional level. However, if the researcher is interested in small area population change, then the description of the number of possible flows in the origin-destination table of migration become overwhelming. We have shown that migration data can be simplified by aggregating into area groups that may provide more meaningful interpretation or, at least, additional insights on patterns that would otherwise be hidden by the traditional geography. Other groupings could have been constructed, such as those that focus on migration between various housing types or landscapes. The regional aspect can also be included in the analysis, as we have shown.

Our focus on white and non-white migration was used to illustrate major differences in aggregate migration patterns. Future work could explore the migration patterns of particular ethnic groups, such as the internal migration of the white British, Indian, Bangladeshi or Chinese populations, for example. This would fit nicely with the recent literature on ethnic population change (e.g., Dorling and Rees 2003; Rees and Butt 2004) and ethnic internal migration (e.g., Finney and Simpson 2007) in the UK. In conclusion, we believe this analysis provides an important contribution for understanding the mechanisms underlying relationships between ethnic population change and further population redistribution by internal migration.

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