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Local deprivation and the labour market integration of new migrants to England

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ABSTRACT

Using data on new migrants to England from the Quarterly Labour Force Survey, we show how a key component of migrant integration - labour market progress in terms of wages and unemployment rates - is broadly positive in the early years after arrival across a range of migrant groups and across gender. However, the precise level of labour market success achieved varies considerably across groups reflecting both the initial entry-level and labour market trajectories after migration. Migrants from Western Europe and the Old Commonwealth countries have unemployment rates (wages) which are generally lower (higher) than other groups, particularly non-white groups, while migrants from the Accession countries experience relatively low unemployment but also low wages. Groups which have better outcomes on entry also tend to experience higher rates of progress over time in England. However, the extent of multiple deprivation in the local authority where migrants reside interacts with years since migration to dampen wage trajectories for some groups and accounting for deprivation highlights the importance of internal migration for access to employment. The results emphasise structural explanations for patterns of labour market integration of new migrants to England.

KEYWORDS

Ethnicity; migration; deprivation; wages; unemployment

1. Introduction and previous literature

The migrant population in England, defined as those born abroad, rose from 3.5 million in 1991 to 7.3 million in 2011 and became more diverse with an increasing proportion originating from outside the Commonwealth, in particular from the European Union (EU), from the mid-2000s. According to the 2011 Census, migrants accounted for 16% of the workforce in England, with a third born in the Middle East and Asia, a fifth on the African continent and a third within the EU. The extent of the increase in migration, and the diversification of origins, raise questions about how new migrant groups fare and about their relationship with the wider society and economy of the receiving

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country. In particular, 'integration' has been prominent in academic and public discourse, prompting discussion of the nature of the socio-economic progress and opportunities of new migrant groups insofar as these bring them 'closer' to the native-born population.

The labour market looms large in such discussions of integration. Gordon (1964, 81) views the economic progress of migrants as the 'keystone of the arch of assimilation' and the Casey review of integration in the UK, a government study commissioned to look into opportunities for isolated and deprived communities, pointed to social and economic advancement, including labour market success, as 'the most important indicator of successful integration' (Casey 2016, 77). Neoclassical economic theory (Becker 1964) has often been drawn upon to underpin the empirical study of migrant labour market progress. Within this perspective, the role of human capital, in the form of the education and job-specific skills migrants are thought to have, or accumulate over time, is key as it is expected to improve employment prospects and potential earnings (Wang and Lysenko 2014). As newly arrived immigrants often possess qualifications obtained in their origin country that are not directly transferable or are less valued, they may face an initial disadvantage in the labour market due to a deficit of suitable human capital (Berthoud 2000). This disadvantage, relative to the native-born, will shrink as migrants gain experience of the receiving country labour market, improve their language skills and acquire new qualifications which are of value to employers.

This positive view of the typical immigrant trajectory is dubbed 'Americanization' in Chiswick's (1978) influential paper, but is more generally referred to as 'assimilation', a term used to refer to a set of hypotheses, firmly based in the human capital model, which suggests that the wage profile of immigrants will rapidly grow to approach that of non-immigrant workers as they stay longer in the destination society. Assimilation and integration can be problematical terms, the precise definitions of which are disputed both within and between academic disciplines. In the economics literature, which is drawn on below, assimilation usually refers to the adjustment of the level of wages, or some other labour market outcome, towards that of the non-migrant population of the destination country. In sociology, for many it is a damaged term which brings with it connotations of cultural usurpation. For Anthias (2013, 324), the uses of such terminology which purportedly aim 'to attack social division ... are underpinned by binary and essentialized constructions of these very divisions'.

The insights of the human capital approach in its purest or textbook form emphasise the initial endowments of the new migrant groups and the potential for economic progress in the receiving country as the payoff from an investment decision. However, on both theoretical and empirical grounds, it is possible to question whether this characterisation of assimilation/integration is a complete description of the experience of new migrants. On a conceptual level, it is not surprising that the textbook model is problematic as it is posited in a framework where there is some level of assumed homogeneity, if not in the endowments that migrants arrive with, then in the idealised labour markets into which they enter. An abstraction such as '*the* UK labour market' (e.g. Bell 1997, emphasis added) may be a useful fiction for the identification of aggregate trends in the trajectories of migrants, but neglects the fact that the experiences of different migrant groups may unfold within a context where the seamless mechanisms of human capital investment do not exist or are prevented from operating through the various, immediate, structural constraints encountered by the migrant.

Previous research across a range of academic disciplines draws attention to two particular sets of constraints. First, new migrant groups in England are from a variety of ethnic backgrounds which will influence the ‘warmth of the welcome’ (Heath and Cheung 2006; Fussell 2014) they receive. Studies have shown that some groups face persistent labour market disadvantage with some non-white immigrants experiencing poorer employment and earning prospects than white immigrants regardless of their education levels and length of stay in the country (Clark and Lindley 2009). When human capital and other migrant-specific characteristics are controlled for, the remaining disadvantage as a result of other factors including employer discrimination, is called an ‘ethnic penalty’ (Heath and Cheung 2006). Persistent ethnic penalties in earnings and employment have been identified in the UK across the range of non-white groups. These are particularly pronounced for Pakistanis/Bangladeshis, as well as Black Africans (Metcalf 2009). Ethnic penalties have been shown to endure for ethnic minority groups born in the UK (Blackaby et al. 1997; Dustmann and Fabbri 2005); indeed even when members of the second generation have equivalent educational qualifications obtained in the UK, they have been found to fare poorly on a range of labour market outcomes compared to the white British population (Li and Heath 2008). Field studies of recruitment processes (Riach and Rich 2002; Wood et al. 2009) emphasise the importance of employer discrimination as a source of these ethnic penalties. Conversely, other studies have shown that EU accession migrants are highly mobile in the labour market and those with higher English language skills are able to make the transition into high-skilled jobs with relative ease (Cook, Dwyer, and Waite 2011; Parutis 2014). While more recent migrant groups in the UK may experience an ‘occupational downgrading’ on arrival, with time, labour market integration in terms of both employment and occupational attainment is shown to improve (Dustmann, Frattini, and Preston 2013; Frattini 2017).

The second set of constraints acknowledges that variations in local labour markets and neighbourhood characteristics can substantially affect the availability of opportunities to access (well-paid) employment across different places. This is overlooked in the standard assimilation model where immigrants face no structural constraints on the acquisition of the skills and experience which are valued by employers. On a conceptual level, Galster (2012) identifies 15 mechanisms through which place affects individual and group outcomes categorised under the following headings: ‘social-interactive’, ‘environmental’, ‘geographical’ or ‘institutional’. Throughout these, there is scope for the migration process and the characteristics of specific immigrant groups to create conditions whereby place becomes a determinant of observed patterns of employment outcomes. For example, Galster highlights, in the category of ‘social-interactive mechanisms’, how *social networks* transmit knowledge and other resources (2012, 25; see also Peters, Finney, and Kapadia 2018) or how *peer effects* may influence the rate of human capital accumulation (see also Arnott and Rowse 1987). Empirically, geographers have highlighted the role of place-specific characteristics such as the size of the ethnic minority population, levels of socio-economic deprivation and the local employment structure in determining individual labour market outcomes (Wang 2008, 2009; Simpson et al. 2009; Wang and Lysenko 2014; Feng, Flowerdew, and Feng 2015). In economics, Van der Klaauw and van Ours 2003 and Damm (2014) investigate the relationship between neighbourhood deprivation and labour market outcomes in Europe. However, for England, an understanding of how locality impacts on the labour market trajectories of recent migrants is limited.

Galster (2012) emphasises the plethora of individual causal mechanisms through which place can affect socio-economic outcomes and the empirical literature confirms that researchers have identified a range of local factors influencing individual labour market outcomes. This paper focuses on the concept of *deprivation* as a summary measure of the unequal opportunities that characterise local areas in England. The UK government has constructed indices of local deprivation for geographical units which group together over 30 separate indicators in 7 ‘domains’ including income, employment, health and the living environment. This index has been widely used by policymakers and researchers and is implemented here to operationalise the link between place and labour market integration.

The contribution of this paper is threefold and, in line with the focus of this Special Issue on the interdisciplinary study of ethnicity and place, combines insights and modes of investigation from multiple disciplines. This has been facilitated through the Centre on the Dynamics of Ethnicity (CoDE) as discussed in the Introduction (Finney, Clark and Nazroo, 2018). First, using techniques applied in the economics literature, we investigate whether new migrant groups arriving in England since 2000 experience economic progress in terms of key labour market outcomes of wages and unemployment. Second, we explore differences in the initial success and subsequent trajectories between different new migrant groups. Third, employing a geographical focus, we further address the structural constraints faced by different groups by analysing how the locality within which migrants access the labour market, particularly in terms of the relative deprivation of their area of residence, affects labour market trajectories. Finally, we discuss our results in the context of the wider, and interdisciplinary, literature on theories of migrant integration.

2. Data

The data are derived from the Labour Force Survey (LFS), a national survey of around 60,000 households who are interviewed in five successive quarterly waves. The LFS sampling frame covers around 97% of private addresses in Great Britain and the present analysis uses a pooled sample of the quarterly LFS for the years 2000–2015 based on wave 1 respondents resident in England only. The focus on England reflects where the vast majority of new migrants settle. The Secure Access version of the LFS is used as it contains the respondents’ Local Authority of residence which enables information on levels of local disadvantage to be matched in. Disadvantage is measured using the 2010 Index of Multiple Deprivation (IMD) (DCLG 2011).

Respondents younger than 16 years of age and those over UK retirement age (65 for men and 60 for women) are excluded and, for the immigrants in the sample, only recent arrivals, defined as those who arrived after 1999, are studied. Students are also excluded since the focus is on the labour market and it is not clear whether migrant students will remain in the UK after their studies. Two main samples form the basis of the investigation. In the first are included those who are economically active: here, the probability of unemployment is the outcome of interest. In the second sample, we focus on the hourly wages of those in paid employment. Six specific groups of recent migrants are considered reflecting relatively homogenous countries or regions of origin and these are briefly considered in turn below.

2.1. A12 migrants

The expansion of the EU after 1st May 2004 marked a significant moment in Britain's migration history when 10 countries from Central and Eastern Europe (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovenia and Slovakia, together with Cyprus and Malta) joined the EU with a further two countries joining in 2007 (Bulgaria and Romania). Few restrictions were placed on the entry of migrants from these countries (the A12) into the labour market with many finding employment in sectors with labour shortages such as the service, agricultural, food packing, construction and hospitality sectors (Burrell 2009). Many of these sectors were located outside the traditional inner city areas of previous New Commonwealth migrants and spurred the formation of new immigrant geographies (Burrell 2009; Scott and Brindley 2012). Although characterised by limited English language abilities compared to some other groups, the white ethnicity of this group might be expected to protect them against explicit racial (skin-colour-based) discrimination by employers.

2.2. Western Europe and Old Commonwealth (WEOC) migrants

This group includes nationals from Western Europe, USA, Canada, Australia, and New Zealand. Britain has consistently experienced migration to and from Western Europe that has remained relatively constant as a result of the countries' similar economic development (Moch 2003). Migrants from these countries are spread throughout Britain and occupy relatively privileged positions in the British labour market (Li and Heath 2008; Migration Observatory 2016). In terms of culture, language (for some of this group), ethnicity and their source country education system, this group of migrants would be expected to demonstrate more commonalities with white British workers and face fewer structural constraints to labour market progression.

2.3. African migrants

This group includes migrants from across Africa, which due to sample size considerations, have been grouped together. According to the 2011 Census, there were 1.1 million African migrants in England, with Nigeria (2.6%) and South Africa (2.5%) accounting for the largest percentage share of migrants from Africa by country of birth. Although diverse in respects such as religion, language and reasons for migration, the vast majority of this group will be of non-white ethnicity. Migration from Africa has been a relatively recent phenomenon, gaining momentum in the 1990s when numbers of immigrants from Africa rose to approximately 20,000 per year (Migration Observatory 2017). In terms of their residential dispersal, African migrants have been observed to be largely residentially concentrated in the South and South East of England, with over three quarters of Black Africans living in Greater London and almost a half living in Inner London.

2.4. Indian migrants

The early Indian migration was largely due to labour shortages in the post-war period. These migrants were mainly men who were from middle-ranking peasant families from

the Punjab alongside relatives of the colonial army, police and government-employed workers (Robinson 1986). The early Punjabi migrants often had lower educational attainment and found work in the manufacturing, textile and services sectors. More recent Indian migrants are among the highest educated migrant groups with the majority of Indian migrants arriving to England after 2001 educated at degree level (Lymeropoulou and Parameshwaran 2015) and many working in highly skilled occupations as medical professionals, engineers and information technology (IT) specialists (Lowell and Findlay 2002). According to Finney and Simpson (2009), unlike other ethnic minority groups in the UK, Indians have residentially dispersed out of urban areas.

2.5. Pakistani and Bangladeshi migrants

According to the 2011 Census, there were around 1.6 million Pakistanis and Bangladeshis in England and Wales representing 2.8% of the population. In terms of residential patterns, Pakistani migrants have largely been confined to metropolitan cities such as London, Birmingham, Manchester, Bradford, Leeds and Luton. According to Peach (2006), whilst London has a cosmopolitan South Asian population, further north than Birmingham and into Scotland the South Asian population has become more exclusively Pakistani. By comparison, Bangladeshis are largely concentrated in London with smaller concentrations found in Birmingham and in Oldham in Greater Manchester. Similar to Pakistani migrants, their migration has largely been of low-skilled migrants to fill Britain's cheap and unskilled labour needs (Alexander, Chatterji, and Jalais 2015). In line with other studies, the Bangladeshi and Pakistani groups have been combined on the basis of similarities in their pre-migration characteristics and socio-economic position in England (Berthoud 2000).

2.6. Chinese migrants

This group comprises migrants from Mainland China and Hong Kong. Chinese migration to Britain has a long history that began in the 1880s (Yu 2000). According to the 2011 Census, Chinese-born migrants accounted for 156,938 people and represented 0.4% of the British population. Much of Britain's Chinese migrant population is comprised of migrants who originated in Hong Kong due to its historical ties with Britain. Chinese migrants are residentially dispersed throughout Britain, with significant numbers in the South East and North West regions. The wider ethnic Chinese population in Britain comprises people with diverse origins and cultural backgrounds that include individuals born in Hong Kong as well as Mainland China, Taiwan, Vietnam, Singapore and Malaysia (Chan and Chan 1997).

Table 1 describes the sample of new migrants and, for comparison purposes, white and non-white UK-born individuals. Table 1, for men, shows that for three of the new migrant groups, the A12, WEOC and Indians, employment rates are higher for new migrants than for the white UK-born group. The employment rates of African, Pakistani and Bangladeshi men and those from China are lower than for the white UK-born group but exceed those for UK-born non-whites. In part, these differences will reflect differences in human capital but it is clear that men from all migrant and all second-generation ethnic minority groups have higher levels of schooling than the white

Table 1. Descriptive statistics.

| | White UK Born | Non-white UK Born | A12 | WEOC | Africa | India | Pakistan/ Bangladesh | China |
|--|------------------|----------------------|-------|-------|--------|-------|-------------------------|-------|
| (a) Men | | | | | | | | |
| Employment rate (%) | 81.2 | 76.2 | 91.5 | 89.9 | 78.8 | 92.5 | 81.0 | 77.3 |
| Unemployment rate (%) | 5.5 | 13.5 | 5.0 | 5.1 | 11.0 | 3.5 | 10.8 | 9.7 |
| Real hourly wage (£) | 10.70 | 10.30 | 6.20 | 14.40 | 9.40 | 10.90 | 6.60 | 9.30 |
| Age | 43.1 | 32.6 | 32.4 | 34.1 | 35.7 | 34.6 | 33.8 | 34.3 |
| Years of schooling | 12.3 | 13.4 | 14.6 | 16.1 | 14.8 | 16.4 | 14.6 | 15.4 |
| Foreign experience (years) | 0 | 0 | 8.4 | 9.0 | 10.0 | 7.9 | 7.9 | 7.5 |
| Married (%) | 57.2 | 41.7 | 48.3 | 47.0 | 65.2 | 81.5 | 86.5 | 64.5 |
| Arrived 2000–2003 (%) | | | 12.1 | 44.4 | 59.1 | 41.6 | 50.5 | 52.9 |
| Arrived 2004–2008 (%) | | | 61.8 | 33.2 | 30.9 | 37.6 | 33.4 | 34.3 |
| Arrived after 2008 (%) | | | 26.1 | 22.4 | 10.0 | 20.9 | 16.1 | 12.8 |
| Rank in Index of Multiple Deprivation | 149.0 | 92.6 | 114.3 | 128.8 | 110.4 | 109.1 | 69.5 | 106.7 |
| North (%) | 33.1 | 22.0 | 21.4 | 13.7 | 19.5 | 17.0 | 35.5 | 25.6 |
| Midlands (%) | 25.2 | 25.9 | 27.9 | 15.8 | 18.7 | 23.1 | 21.4 | 16.9 |
| Inner London (%) | 2.3 | 13.0 | 7.3 | 31.4 | 14.6 | 7.9 | 14.8 | 16.1 |
| Outer London (%) | 5.3 | 21.0 | 18.6 | 14.4 | 20.3 | 24.6 | 15.2 | 16.9 |
| South East (%) | 23.5 | 15.3 | 18.1 | 19.3 | 22.1 | 20.6 | 12.1 | 19.0 |
| South West (%) | 10.5 | 2.9 | 6.7 | 5.5 | 4.9 | 6.7 | 0.9 | 5.4 |
| N | 264,040 | 9303 | 3686 | 2260 | 2406 | 1581 | 1096 | 242 |
| (b) Women | | | | | | | | |
| Employment rate (%) | 74.4 | 66.1 | 74.1 | 75.3 | 58.8 | 57.8 | 15.8 | 57.0 |
| Unemployment rate (%) | 4.4 | 10.1 | 7.2 | 5.7 | 12.0 | 12.4 | 27.7 | 10.0 |
| Real hourly wage (£) | 8.26 | 9.03 | 5.59 | 11.12 | 8.06 | 8.49 | 6.58 | 7.62 |
| Age | 40.7 | 32.8 | 31.8 | 32.8 | 34.9 | 33.1 | 31.0 | 33.7 |
| Years of schooling | 12.3 | 13.3 | 14.9 | 16.1 | 13.7 | 15.6 | 12.7 | 15.3 |
| Foreign experience (years) | 0 | 0 | 7.2 | 7.5 | 9.8 | 7.2 | 6.6 | 7.9 |
| Married (%) | 56.5 | 43.4 | 50.8 | 48.7 | 64.1 | 92.6 | 92.2 | 71.4 |
| Arrived 2000–2003 (%) | | | 15.9 | 44.4 | 59.7 | 40.8 | 47.7 | 51.2 |
| Arrived 2004–2008 (%) | | | 56.4 | 33.1 | 29.3 | 37.3 | 34.3 | 32.4 |
| Arrived after 2008 (%) | | | 27.7 | 22.6 | 10.9 | 21.8 | 18.0 | 16.4 |
| Rank in Index of Multiple Deprivation | 147.8 | 87.5 | 118.7 | 135.3 | 108.2 | 112.6 | 73.6 | 120.0 |
| North (%) | 33.7 | 21.4 | 20.8 | 13.0 | 19.1 | 17.8 | 36.0 | 22.8 |
| Midlands (%) | 24.9 | 24.6 | 25.9 | 14.8 | 18.0 | 23.3 | 21.4 | 16.9 |
| Inner London (%) | 2.3 | 15.8 | 8.1 | 27.6 | 14.2 | 6.0 | 13.0 | 16.7 |
| Outer London (%) | 5.3 | 22.0 | 18.4 | 14.9 | 22.2 | 26.6 | 13.6 | 16.0 |
| South East (%) | 23.2 | 13.9 | 19.8 | 23.2 | 21.8 | 20.7 | 14.8 | 21.8 |
| South West (%) | 10.7 | 2.5 | 7.0 | 6.5 | 4.7 | 5.7 | 1.1 | 5.9 |
| N | 250,894 | 10,492 | 4170 | 2590 | 2918 | 1644 | 1174 | 426 |

Notes: Employment rate refers to those in employment as a proportion of the economically active population of the working age; unemployment rate to those unemployed and looking for work as a percentage of the economically active; the real hourly wage is gross hourly earnings, deflated by the Retail Price Index to January 2010 prices; years of schooling are approximated as age left full time education less 5; (potential) foreign experience is age of arrival in UK less age left full time education.

UK-born. Clearly differences in the quality of the schooling, particularly in terms of its transferability to the UK labour market, will be important here (Friedberg 2000). The unemployment rates of men from the A12 and WEOC groups are also similar to or lower than those of the White UK born. Again the Chinese, Africans and Pakistani/Bangladeshi migrants do considerably worse in terms of unemployment rates. However, their rates are still lower than those of the UK-born ethnic minorities who have the highest rate in the table at 13.5%. The patterns for hourly wages are considerably different with the A12 and Pakistani/Bangladeshi migrants earning the lowest. The WEOC migrants have by far the highest average hourly wages, more than double those of the most poorly paid groups.

Table 1 also shows the average values of a range of other characteristics which will feature in the subsequent statistical analysis. The table confirms that male migrants are generally younger on average than the UK-born white population and much more likely to live in London; in both these respects they resemble more the non-white UK-born group. The arrival patterns are different between groups with the majority of A12 migrants arriving between 2004 and 2008. The Africans, Pakistanis/Bangladeshis and Chinese were most likely to have arrived in the period 2000–2003.

Table 1 shows the same descriptive information for women from the new migrant and UK-born groups. While employment rates are lower for women overall, the highest rates are found for the white UK-born, A12 and WEOC groups. While Indian and Pakistani/Bangladeshi men had very high employment rates relative to the UK-born, women from these groups had very low rates, particularly Pakistani and Bangladeshi women. The very high-unemployment rate for Pakistani and Bangladeshi women is notable; this is the highest for any of the new migrant groups amongst men or women. WEOC women were the highest earners as was the case for men.

The final variable of interest in Table 1 is the mean ranking of the individual's area of residence within the IMD. The IMD is calculated by combining 38 separate indicators of local-level deprivation across 7 deprivation domains: Income, Employment, Health and Disability, Education Skills and Training, Barriers to Housing and Other Services, Crime and Living Environment. Deprivation is described as covering 'a broad range of issues and refers to unmet needs caused by a lack of resources of all kinds, not just financial' (DCLG 2011) and the wide range of indicators which feeds into the IMD is intended to capture this. Local areas are ranked on the IMD and it is the mean value of this rank which appears in the table. A higher ranking (that is to say a lower number) indicates higher deprivation levels. From the table, we can see that all migrant groups live in more deprived areas than the white UK-born group, and this is particularly so for the Pakistani and Bangladeshi migrants. Such spatial patterns of migrant concentration are partly the legacy of the racialisation of the 'inner city' discussed in Rhodes and Brown (2018). Of the other migrant groups, the WEOCs were the least likely to live in a deprived area.

Table 2 focuses attention on the two key labour market outcomes of interest – hourly wages and unemployment probabilities. While it is far from universal, there is some *prima facie* evidence that those who have been in the UK longer have improved their labour market outcomes. For example, men and women from the A12 group who have been resident longer have higher levels of wages and lower unemployment rates than those who arrived later. This is also true of men and women from India, Pakistan and Bangladesh. These patterns observed in the descriptive analysis will be due to the combined effects of many different factors. In the next section, we disentangle these in a series of statistical models.

3. Regression analysis

3.1. Labour market trajectories

To analyse the labour market trajectories of new migrants the approach of Clark and Lindley (2009) is adopted. This uses the idea of pseudo-cohort analysis (Borjas 1985;

Table 2. Mean unemployment and real wage by arrival cohort for new immigrants.

| Arrival date in UK | A12 | WEOC | Africa | India | Pakistan/ Bangladesh | China | Total |
|-------------------------------------|------|-------|--------|-------|-------------------------|-------|-------|
| (a) Men – unemployment rates (%) | | | | | | | |
| 2000–2003 | 3.1 | 4.7 | 11.2 | 3.3 | 9.2 | 9.9 | 7.1 |
| 2004–2008 | 4.3 | 5.4 | 10.6 | 2.6 | 9.6 | 7.1 | 5.5 |
| 2009–2015 | 7.3 | 4.9 | 11.0 | 4.9 | 17.3 | 3.7 | 7.4 |
| (b) Men – real wages (£ per hour) | | | | | | | |
| 2000–2003 | 8.55 | 14.83 | 9.51 | 11.64 | 6.70 | 9.69 | 10.88 |
| 2004–2008 | 6.01 | 14.04 | 8.98 | 10.02 | 7.26 | 8.75 | 8.27 |
| 2009–2015 | 5.68 | 13.06 | 9.3 | 10.37 | 5.72 | 7.74 | 8.52 |
| (c) Women – unemployment rate (%) | | | | | | | |
| 2000–2003 | 4.5 | 5.4 | 9.9 | 7.4 | 21.9 | 6.0 | 7.7 |
| 2004–2008 | 6.4 | 4.6 | 12.5 | 10.0 | 26.1 | 15.7 | 8.0 |
| 2009–2015 | 10.0 | 8.0 | 21.3 | 23.8 | 41.3 | 13.0 | 12.9 |
| (d) Women – real wages (£ per hour) | | | | | | | |
| 2000–2003 | 6.8 | 11.26 | 8.27 | 9.07 | 6.27 | 8.88 | 9.04 |
| 2004–2008 | 5.45 | 11.33 | 7.7 | 8.12 | 7.19 | 6.20 | 7.18 |
| 2009–2015 | 4.89 | 9.36 | 6.21 | 8.08 | 5.75 | 5.88 | 6.55 |

Note: italics indicate base less than 30.

see also Bell 1997, for a UK application) whereby the separate effects of years since migration (YSM, traditionally used to measure ‘integration’ or ‘assimilation’ in the economics literature), time period and arrival cohort are distinguished.

The innovation of Clark and Lindley (2009) is to model the effect of YSM as a flexible non-linear function using a partially linear model (Yatchew 2003). Previous approaches model YSM, which captures the shape of the relationship between time in the receiving country and the relevant immigrant outcome, either using grouped dummy variables or a quadratic function. The partially linear model avoids placing so much structure on the data and enables a description of the evolution of wages and unemployment probabilities which is both smooth, but flexible enough to capture a variety of non-linearities in the underlying phenomenon of interest. Further details of how to estimate the model are contained in Clark and Lindley (2009).

The partially linear model provides two sets of output: (i) estimates of the other (non-YSM) parameters together with their standard errors; (ii) a graphical representation of the path of the outcome variable (here unemployment probability or log wages) as it varies with YSM. The parameter estimates are contained in Tables A1–A4 in the Appendix while the graphs for each outcome are found in Figures 1–4. The list of regression covariates included foreign experience, years of schooling, marital status and region of residence. The regression results suggest that, for most groups, potential labour market experience (obtained before arrival to England) and schooling increase wages and reduce unemployment risk as human capital theory would predict. There are few systematic or consistent effects of arrival cohort. For both men and women, the WEOC group appears to receive particularly high returns to human capital in the wage models.

Figure 1 contains the predicted log hourly real wages for male migrants for each of the groups over the first 15 years in the English labour market. A fitted value from the statistical model is plotted for each group: all the variables in the regression are set to their group-specific mean values apart from YSM which is allowed to vary. It is clear that the heights of the lines (intercepts) are very different and this is more pronounced than any differences in the slopes. There is a clear hierarchy in the overall heights of the lines – the WEOC immigrants earn the most per hour followed by the Indians, Africans and

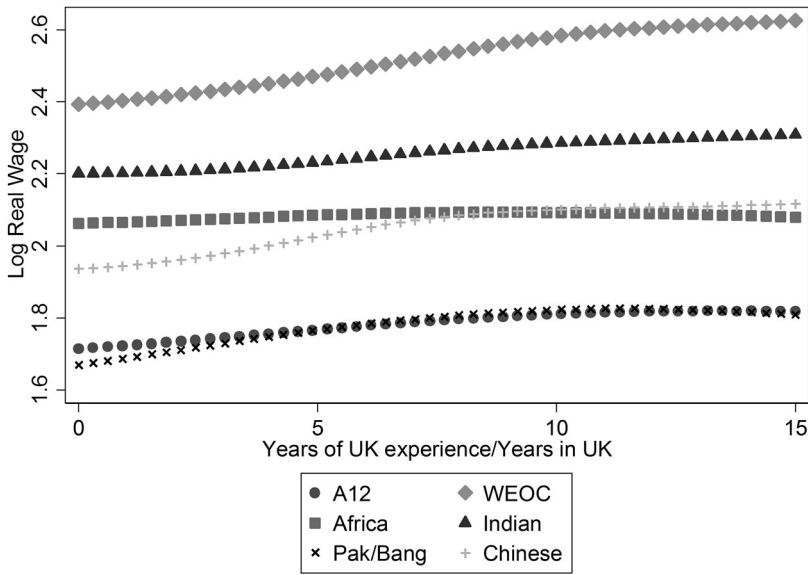


Figure 1. Log real wage trajectories for new migrant groups – men.

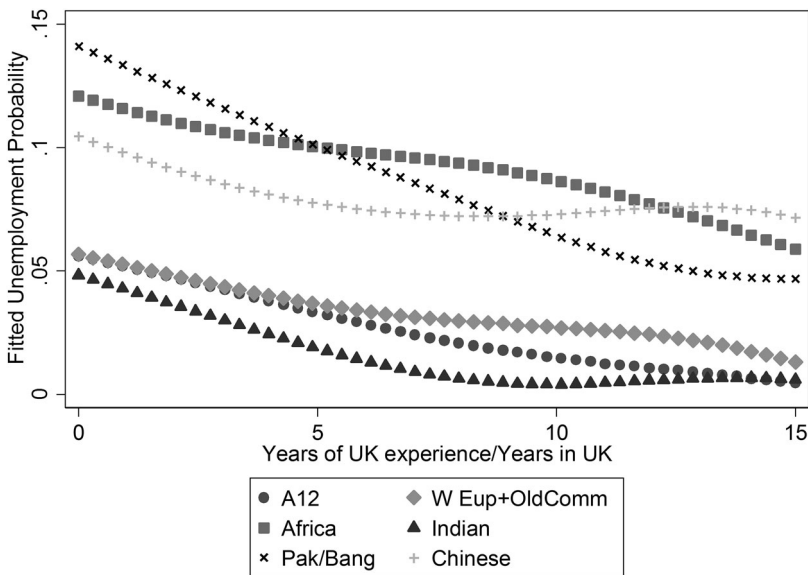


Figure 2. Unemployment probability trajectories for new migrant groups – men.

Chinese. The A12 and Pakistani/Bangladeshi group are virtually indistinguishable at the lower end. The differences in wages partly reflect differences in human capital and location choices/constraints: WEOC migrants together with Indians have more years of schooling on average than the other groups and the A12 and Pakistani/Bangladeshi groups are younger. The two highest earning groups are also much more likely to live in high wage areas – 57% of the WEOC men live in London or the South East compared to 37% of the A12 or 40% of the Pakistani/Bangladeshi men.

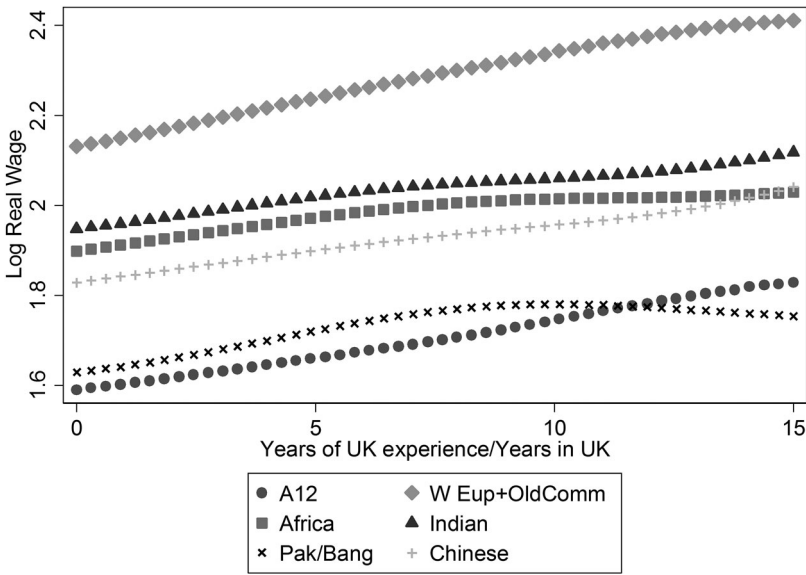


Figure 3. Log real wage trajectories for new migrant groups – women.

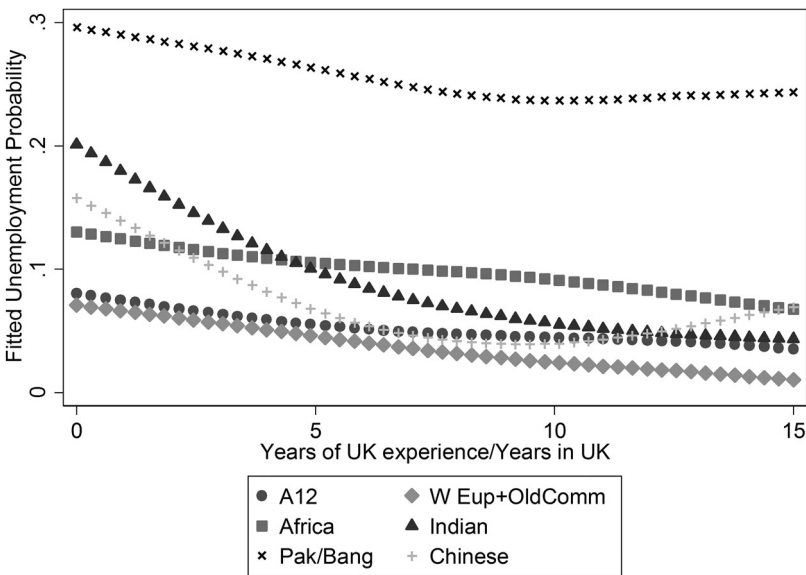


Figure 4. Unemployment probability trajectories for new migrant groups – women.

Over the first 15 years in the UK labour market real wages grow for most groups. This is consistent with Chiswick (1979) for the US and Dustmann and Frattini (2014) for the UK. The main exception is the Africans where wages are broadly flat. Africans are better educated than most immigrant groups (Lymperopoulou and Parameshwaran 2015; Lessard-Phillips and Li 2017), however poor English language proficiency, refugee status and employer discrimination in recruitment, promotion processes and organisational cultures

have been identified as barriers to labour market success (Hudson and Radu 2011) which may help explain their lower rates of wage growth. The rate of growth is highest for the WEOC group where earnings after 15 years are approximately 32.3% higher than on arrival. The Chinese have the next highest earnings growth where the equivalent figure is 18.0% and for A12, Pakistani/Bangladeshi and Indian migrants earnings growth rates are 11.7%, 12.7% and 13.0%, respectively. Thus the highest growth is for the group which enters with the highest wages which further increases wage inequality between different migrant groups.

Differences in human capital are also reflected in the unemployment profiles shown in Figure 2 for men from each of the groups. In terms of the height of the lines, the groups naturally divide in two. WEOC, A12 and Indian migrants have relatively low unemployment rates on entry (5% or less) which decline gradually over time. The other three groups have much higher rates on entry. These also fall as time in the UK labour market increases with the decline for the Pakistani and Bangladeshi group notable – from 13.4% to 4.8% over their first 15 years.

For women's wages (Figure 3), the ranking of the groups is virtually identical to the men with WEOC at the top and the A12 and Pakistani/Bangladeshi at the bottom. However, there is now more distinction between these latter two groups with the Pakistanis and Bangladeshis displaying a small wage advantage (in line with Table 1) across most of the time in the UK. Growth over the first 15 years of UK labour market experience is for each of the groups WEOC: 30.2%; Indian: 19.5%; African: 13.4%; Chinese: 23.2%; Pakistani/Bangladeshi: 14.2%; and A12: 24.1%. It is notable here that African women have much higher wage growth rates than African men, something that is also true of the A12 group where wage growth over the 15 years is more than double that of their male counterparts. One potential explanation of this is that since participation rates for women are generally lower than those of men, the sample of women who enter the labour market is more highly selected in favour of high productivity individuals than the equivalent for men.

Figure 4 which shows the fitted unemployment rates for women is dominated by the extremely high rate of unemployment for Pakistani/Bangladeshi women. These numbers are comparable to the overall rate of unemployment for Pakistani/Bangladeshi women in the UK labour market (DWP 2016). Moreover, unlike men from the same group, the unemployment rate of Pakistani and Bangladeshi women does not decline very much over time. On the whole, unemployment rates for women are higher than for men from the same group, although like men they do fall over time for all groups. There is a particularly steep decline for Indian women in their early years in England.

In summary, there is evidence of labour market progress for new migrants in England in the first years of residence. This is consistent with a body of research in economics which finds support, across many countries, for the standard model of economic assimilation outlined in Chiswick (1978). Experience of the receiving country labour market, which may include more specific investments in language skills, education or training, yields a return in terms of higher wages and lower unemployment probabilities. However, this pattern of progress is not uniform with large differentials in levels of wages and rates of unemployment being observed. To some extent, these mirror differences in the outcomes of established members of white and non-white ethnic groups in the UK. For example, the WEOC, Chinese and Indian migrant groups fare relatively well in employment and earnings terms, reflecting how white, Chinese and Indian

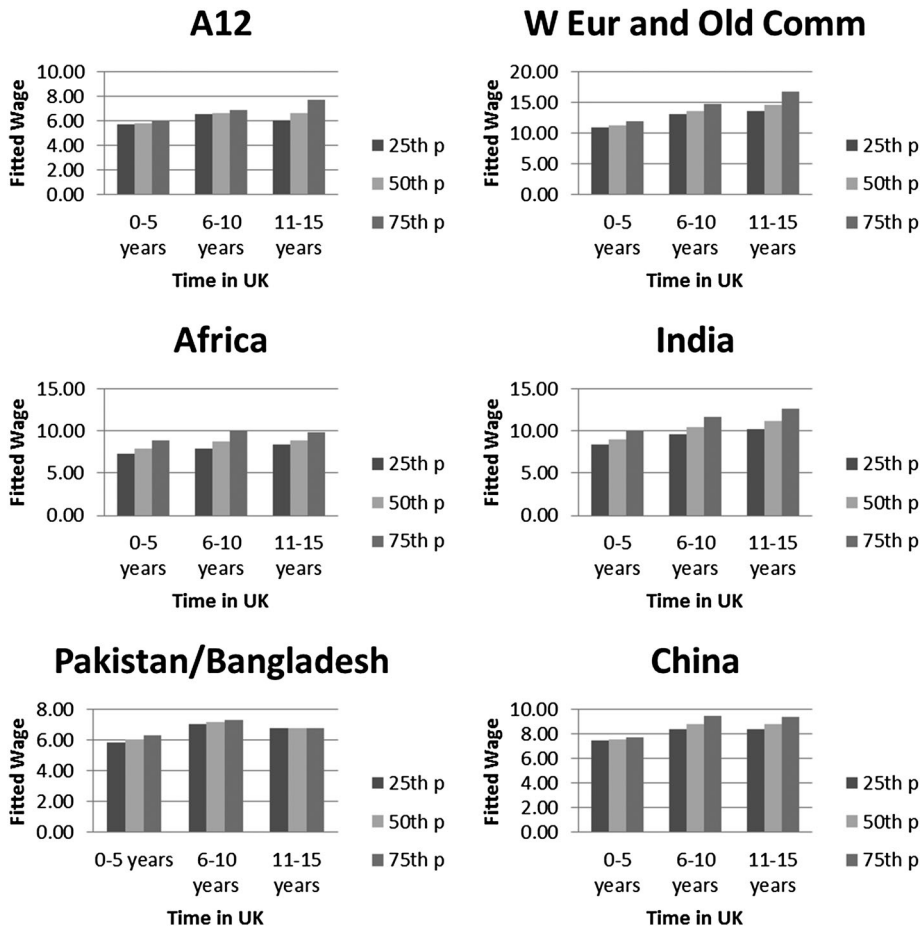


Figure 5. Real wage trajectories by percentile of local deprivation for migrant groups.

workers more generally achieve relatively well in the labour market (Blackaby et al. 2002). The A12 group, although experiencing low unemployment rates, have amongst the lowest hourly wages, faring no better than the Pakistani/Bangladeshi group in this respect, nor in earnings growth over the first 15 years in England. As a group whose ethnicity is white, the low pay experienced by the A12 stands in marked contrast to the more general picture of white advantage amongst immigrants to the UK found in Clark and Lindley (2009).

3.2. Local deprivation and labour market progress

In this section, we analyse how local levels of deprivation affect the labour market experience of new migrants over their first years in England. To investigate this, the deprivation rank indicator described above is introduced as an additional explanatory variable in the statistical models and is interacted with time in the UK to see how the labour market trajectory of different migrants is affected by the level of multiple deprivations in the local authority where they live. Thus the model allows for deprivation to affect labour

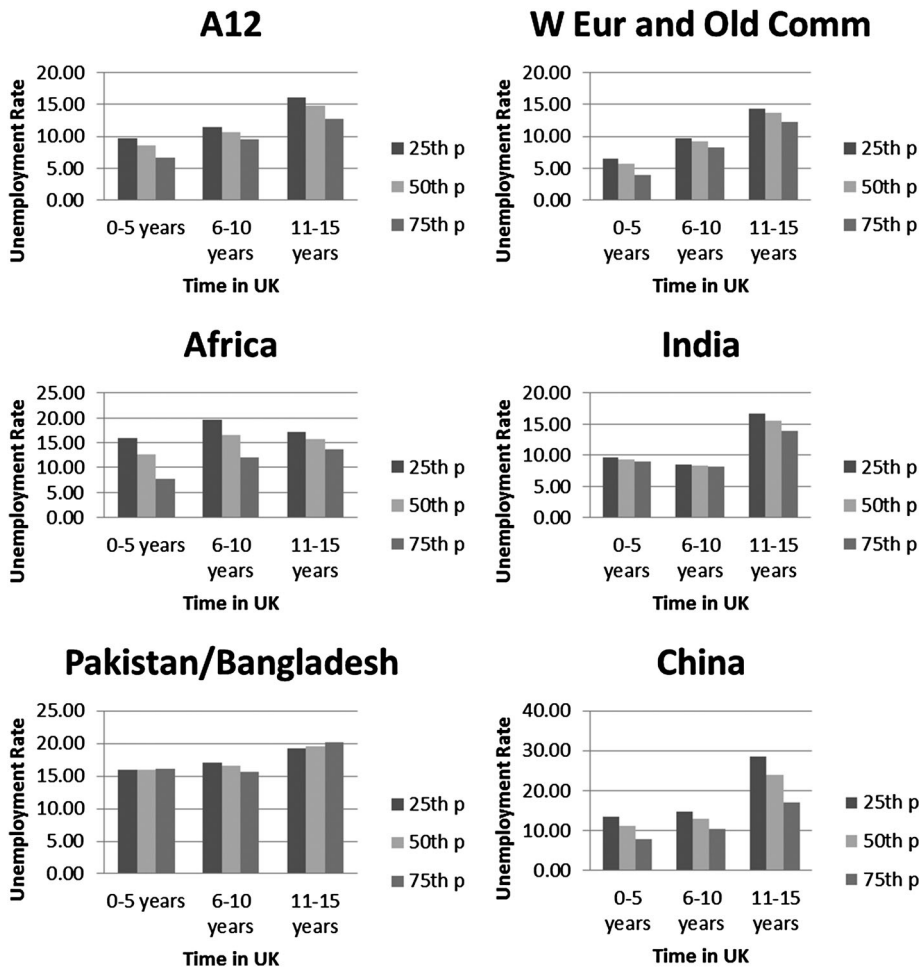


Figure 6. Unemployment rate trajectories by percentile of local deprivation for migrant groups

market outcomes directly but also for it to modify each group’s trajectory. The estimation procedure has been amended in three further ways. First, men and women have been pooled for each group to improve sample sizes. Second, because the partially linear model does not easily allow the estimation of interaction effects, YSM has been subdivided into three roughly equal categories: 0–5 years, 6–10 years and 11 or more years. Third, in the results presented below log wages have been converted back into levels to allow for easier interpretation.

To summarise the results, Figure 5 shows predicted hourly real wages on the basis of the regression models for individuals at the 25th percentile, median and 75th percentile of the IMD rank variable and for migrants at different levels of UK labour market experience. Note that given the definition of the IMD variable individuals at the 25th percentile live in more deprived areas than those at the median who, in turn, live in more deprived areas than those at the 75th percentile. Thus for each group, the effect of deprivation can be seen for a given category of YSM (moving from more to less-deprived areas from left to right within each category) and the trajectory over time in the UK can be

seen by comparing wages at a given ranking of deprivation (e.g. by comparing the left-hand, 25th percentile level across YSM categories).

For all of the groups, and as we would expect, wages are higher in less-deprived areas: even after controlling for region and other determinants of the wage, there is a steep wage gradient comparing more to less-deprived areas. This emphasises the importance of place and the importance of the more local level of geography: controls for region are still included in the model. Regions are clearly too large to capture the full effect of place on the labour market prospects of individuals and the results here justify the use of the more granular data.

As well as affecting levels of the wage, what is also apparent from the results is that, for some of the groups, and particularly for the A12, the rate of wage growth is lower for those in more deprived areas (at the 25th percentile) than for those in more prosperous (less-deprived) areas. To make this explicit, wages for A12 workers in the 75th percentile of deprivation with 11–15 years in the UK were 29% higher than those with 0–5 years. The equivalent figure for those in the 25th percentile (the more deprived areas) was 5%. In other words, wage growth was almost six times higher in the less-deprived areas. This is a substantial effect suggesting that local deprivation and labour market success are fundamentally intertwined for new migrants from A12 countries. Of all the groups this effect is strongest for the A12; however, higher wage growth in more affluent areas is also evident for the WEOC group, Indians and the Chinese group.

Turning to unemployment (Figure 6), it is clear that more affluent areas have lower unemployment rates at all levels of UK experience. With respect to the evolution of unemployment rates with time in the UK something rather surprising, in the light of the previous analysis, is found. Where local deprivation was not controlled for, unemployment risk generally fell with time in the UK for each of the groups (Figures 2 and 4). In this analysis, where local deprivation is incorporated, the opposite is the case for all of the groups. As years in the UK increase the unemployment rate actually increases. The explanation for the reversal in the sign of this effect lies in the fact that in this analysis, we are controlling for local area deprivation so the effect of time since migration must be interpreted as years within an area with a particular level of deprivation. In the previous analysis, therefore, time since migration was potentially associated with movement away from more deprived areas to ‘better’ areas and the correlation between YSM and lower unemployment reflected this internal migration. The data support this explanation as there is a negative correlation between years in the UK and the level of deprivation. For example, amongst A12 migrants, the average IMD rank of those with 0–5 years of UK experience was 113 while for those with 10–15 it was 129. The propensity for the A12 group to be internally, as well as internationally, mobile has been noted with migrants initially arriving to undertake agricultural work subsequently changing locations for better-paying service sectors of employment (Rutter et al., 2008). However, this pattern is observed, to varying extents, for the other groups too: for those who stay in an area with a similar level of deprivation, the chances of unemployment would be, other things equal, expected to increase.

4. Discussion and conclusions

Three questions underpinned our empirical investigation of the labour market integration of new migrants. First, we examined whether migrants made progress during their early

years in the country. The results suggest that, for both wages and unemployment, experience of the English labour market does indeed improve new migrants' outcomes. This is consistent with a human capital model in which migrants acquire knowledge and skills specific to the receiving country and gradually improve their positions. However, our second question was around the differential success of different migrant groups and it is clear that there are substantial disparities both in initial outcomes on entry to the English labour market and in terms of how quickly prospects improve. The contrast between the A12 and WEOC groups, both 'white' in terms of ethnicity, is striking with the former being amongst the lowest paid groups and also experiencing lower rates of wage growth over their first 15 years. The WEOC group, conversely, has the highest level of initial earnings and the highest rate of wage growth. For unemployment, a different picture emerges with non-white groups experiencing the highest rates and the A12 faring as well as the Indian and WEOC groups in securing access to jobs. Thus labour market progress is structured and differentiated; some of these differences will reflect endowments of observable and unobservable skills and capabilities but some also reflect the constraints and barriers that migrant groups experience differentially.

This point is reinforced when we examine the impact of local deprivation: the analysis shows that accounting for inequalities of place modifies our understanding of the trajectories of new migrant groups. For some groups, the interaction of deprivation and time in the receiving country is associated with lower wage growth emphasising the potential for local area characteristics to have a defining influence on patterns of (labour market) integration. Furthermore, these effects are, in principle, large and could contribute to increasing inter- and intra-group disparities in outcomes. The analysis of unemployment suggests that part of the observed improvement of employment prospects for migrants, as they remain longer in England, may be due to internal migration. This is consistent with the idea of spatial-assimilation theory in which economic integration proceeds alongside residential integration (Massey and Denton 1985; Alba et al. 1999). Immigrants who remain in deprived areas may be less able to make progress in terms of securing better-paid jobs.

The empirical analysis, therefore, suggests that it is important to consider the particular local structure of the labour market in which different migrant groups find themselves. Deprived areas, particularly areas in which new migrants (and UK-born ethnic minorities) are likely to concentrate, provide fewer opportunities for labour market advancement than less-deprived areas. While this creates incentives to internal migration, the patterns of initial location by new migrants may have long-term implications for their labour market integration. The precise causal mechanisms which are involved have not been the subject of this paper; however, the varied industrial structure, ethnic mix, extent of prejudice and discrimination, and overall levels of economic activity will be important and are worthy of further, detailed investigation, along with the wider set of 'social-interactive' and other mechanisms such as those identified by Galster (2012). The clear message, however, is that the study of labour market trajectories cannot ignore place and this supports a more nuanced view of the process of labour market integration which recognises the importance of the resources in particular localities for labour market progress in contrast to the seamless, frictionless view of textbook assimilation theory.

It is also important to be aware of caveats to the analysis due to the limitations of the data available. While there are advantages of the LFS in terms of providing a consistent set

of variables on the migrant groups of interest over a reasonable time period, it should be noted that some important aspects of the migrant experience are missed. For example, language skills are an important determinant of labour market success (Dustmann and Fabbri 2003; Yao and van Ours 2015) and have not been included in the models. The high levels of earnings and employment achieved by the WEOC group will reflect the higher (average) levels of language skills of some migrant groups and the importance of language skills for upward mobility for groups with lower English language ability, such as the A12 (Knight, Lever, and Thompson 2014). It is likely that there will also be interactions between language fluency and place with linguistic enclaves being a feature of the migrant experience in various countries (Lazear 1999). Ryan et al. (2009), for example, have highlighted that tight ethnic networks can be damaging for the employment prospects of Polish migrants with poor language skills in London.

In understanding the experience of the A12 group, in particular, it is important to note that many migrants from these countries are short-term, seasonal or circular migrants who intentionally migrate for relatively short periods of time (Sumption and Somerville 2010). Given that the LFS does not follow individuals over multiple years, consideration of a 'trajectory' for these migrants are problematical and our sample of migrants with relatively low levels of YSM will undoubtedly contain many A12 migrants whose stay in England will be limited. The potential bias to the estimation of the labour market progress of this group should be borne in mind.

The specific route to migration is also important for the interpretation of the results. Whether migrants have moved for economic or family reasons or are refugees will be important but is not identified in the data used here. Campbell (2014) using a restricted access version of the LFS finds that, unsurprisingly, economic migrants perform best in the labour market in terms of employment and earnings with family migrants and asylum-seekers faring much worse. Of the groups considered here, both WEOC and A12 migrants are the most likely to be economic migrants, black Africans most likely to be asylum-seekers, and South Asians most likely to join family already in the UK.

In the wider debate on migrant integration, the results are supportive of Anthias (2013) view that there should be a greater focus on structure within integration discourses which have increasingly become dominated by narratives of culture. Social and economic engagement does not happen in the abstract but plays out within a spatial realm, wherein the resources of a geographical location have a material impact on migrants' progress in the labour market. Here, local deprivation can be seen as an 'exclusionary mechanism' whereby 'integration can be on subordinated terms, that is there can be inferiorized or subordinated inclusion' (Anthias 2013, 329). We must, therefore, recognise that migrants' experience can develop in more ways than through upward mobility, or 'straight-line' assimilation (Warner and Srole 1945). Following Gans (1996) 'second generation decline scenario', integration has also been shown to be potentially dissonant and may take place through a process of 'segmented assimilation', where migrant groups experience downward mobility as they are incorporated into domestic minorities forming a 'rainbow underclass' (Portes and Zhou 1993).

In political discourses in the UK high levels of socio-economic disadvantage and local area deprivation have been seen as synonymous with ethnic residential segregation (Phillips 2006; Casey 2016) and one of the key reasons for the significant recoil from multiculturalism as a policy approach has been the perception that it creates 'parallel communities'

(Cheong et al. 2007; Samad 2013). However, studies have robustly contested the belief that neighbourhoods within the UK operate in isolation or as ethnic ‘ghettos’ (Finney and Simpson 2009) and generally show that it is area deprivation and not ethnic diversity which erodes social cohesion (e.g. Letki 2008; Bécares et al. 2011; Laurence 2011; Sturgis et al. 2011). This paper demonstrates that space conditions the labour market trajectories and that levels of deprivation in local areas can have tangible impacts. If integration through labour market success is to form a key plank of government policy towards immigrants, then policy must take account of how the labour market progress of new immigrants is stratified by region of origin and local labour market disadvantage.

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Appendix

Table A1. Male wage regressions.

| | A12 | WEOC | Africa | Indian | Pak/Bang | China |
|--------------------------------|-----------|----------|----------|----------|----------|----------|
| Foreign Experience | 0.016*** | 0.052*** | 0.010* | 0.010* | 0.014* | 0.032 |
| Foreign Experience Squared/100 | -0.051*** | -0.11*** | -0.028* | -0.062** | -0.028 | -0.10 |
| Years of Schooling | 0.038*** | 0.071*** | 0.040*** | 0.067*** | 0.053*** | 0.081*** |
| Married | 0.036** | 0.17*** | 0.15*** | 0.17*** | -0.0060 | 0.084 |
| Arrived 2000–2003 | 0.22*** | 0.080** | 0.072 | 0.12** | 0.18*** | 0.11 |
| Arrived 2004–2008 | 0.042** | 0.043 | 0.0058 | 0.0069 | 0.20*** | 0.082 |
| Constant | 1.01*** | 0.75*** | 1.42*** | 0.96*** | 0.77*** | 0.12 |
| <i>N</i> | 2557 | 1485 | 1414 | 1122 | 527 | 129 |
| <i>R</i> ² | 0.171 | 0.312 | 0.158 | 0.239 | 0.202 | 0.360 |

Notes: The table reports estimates coefficients and statistical significance (***) indicates significant at 1%, ** indicates significant at 5%, * indicates significant at 10%) Foreign experience was age at which the migrant left their home country less the age at which they left school. Years of schooling was calculated as age left school minus 5. Married is a dummy variable which takes the value 1 if the individual was married. The remaining variables in the table refer to time of arrival in the UK. The model also contained controls for region of residence and year observed. For the Chinese group sample sizes are relatively low which is reflected in insignificant coefficient estimates and some caution should be exercised in the interpretation of the results for this group.

Table A2. Male unemployment regressions.

| | A12 | WEOC | Africa | Indian | Pak/Bang | China |
|---------------------------------|----------|----------|-----------|----------|----------|---------|
| Foreign Experience/100 | -0.069 | -0.35** | -0.26 | 0.017 | -0.039 | 0.23 |
| Foreign Experience Squared/1000 | 0.035 | 0.056 | 0.10 | 0.047 | 0.067 | -0.043 |
| Years of Schooling/100 | -0.51*** | -0.56*** | -1.1*** | -0.071 | -0.62** | 0.15 |
| Married | -0.0095 | -0.022** | -0.057*** | -0.0092 | -0.075** | -0.092* |
| Arrived 2000–2003 | -0.012 | -0.0032 | -0.0014 | -0.00083 | -0.049 | 0.11* |
| Arrived 2004–2008 | -0.020* | 0.0062 | -0.013 | -0.014 | -0.057 | 0.083 |
| Constant | 0.15*** | 0.18*** | 0.29*** | 0.053 | 0.33*** | 0.043 |
| <i>N</i> | 4175 | 2431 | 2260 | 1666 | 1018 | 234 |
| <i>R</i> ² | 0.017 | 0.026 | 0.043 | 0.016 | 0.037 | 0.075 |

Notes: The table reports estimates coefficients and statistical significance (***) indicates significant at 1%, ** indicates significant at 5%, * indicates significant at 10%). Foreign experience was age at which the migrant left their home country less the age at which they left school. Years of schooling was calculated as age left school minus 5. Married is a dummy variable which takes the value 1 if the individual was married. The remaining variables in the table refer to time of arrival in the UK. The model also contained controls for region of residence and year observed. For the Chinese group sample sizes are relatively low which is reflected in insignificant coefficient estimates and some caution should be exercised in the interpretation of the results for this group.

Table A3. Female wage regressions.

| | A12 | WEOC | Africa | Indian | Pak/Bang | Chinese |
|---------------------------------|----------|----------|----------|----------|----------|----------|
| Foreign Experience | 0.0024 | 0.046*** | 0.0051 | 0.016** | 0.017 | -0.013 |
| Foreign Experience Squared/1000 | -0.099 | -1.1*** | -0.0041 | -0.28 | -0.45 | 0.062 |
| Years of Schooling | 0.026*** | 0.062*** | 0.037*** | 0.054*** | 0.044*** | 0.042*** |
| Married | 0.0062 | 0.038 | 0.059* | 0.018 | -0.17 | -0.0063 |
| Arrived 2000–2003 | 0.074* | 0.12** | 0.22*** | 0.12* | 0.061 | 0.17 |
| Arrived 2004–2008 | 0.056** | 0.12** | 0.17** | 0.013 | 0.21 | 0.071 |
| Constant | 1.11*** | 0.75*** | 1.12*** | 0.93*** | 1.00*** | 1.02*** |
| <i>N</i> | 2566 | 1598 | 1324 | 770 | 123 | 182 |
| <i>R</i> ² | 0.110 | 0.245 | 0.144 | 0.119 | 0.133 | 0.245 |

Notes: The table reports estimates coefficients and statistical significance (***) indicates significant at 1%, ** indicates significant at 5%, * indicates significant at 10%) Foreign experience was age at which the migrant left their home country less the age at which they left school. Years of schooling was calculated as age left school minus 5. Married is a dummy variable which takes the value 1 if the individual was married. The remaining variables in the table refer to time of arrival in the UK. The model also contained controls for region of residence and year observed. For the Chinese group sample sizes are relatively low which is reflected in insignificant coefficient estimates and some caution should be exercised in the interpretation of the results for this group.

Table A4. Female unemployment regressions.

| | A12 | WEOC | Africa | Indian | Pak/Bang | Chinese |
|---------------------------------|----------|----------|-----------|-----------|----------|----------|
| Foreign Experience/100 | -0.031 | 0.084 | -0.53** | -0.83** | 0.65 | -0.21 |
| Foreign Experience Squared/1000 | 0.014 | -0.013 | 0.083 | 0.19* | -0.18 | -0.20 |
| Years of Schooling/100 | -0.34** | -0.29* | -0.74*** | 0.22 | -1.50* | -1.90*** |
| Married | 0.029*** | 0.0097 | -0.013 | 0.066** | -0.081 | -0.030 |
| Arrived 2000–2003 | -0.031* | -0.014 | -0.11*** | -0.073*** | -0.23** | -0.034 |
| Arrived 2004–2008 | -0.025** | -0.028** | -0.087*** | -0.081** | -0.17** | 0.034 |
| Constant | 0.14*** | 0.14*** | 0.34*** | 0.20*** | 0.71*** | 0.54*** |
| <i>N</i> | 3852 | 2347 | 2048 | 1183 | 267 | 310 |
| <i>R</i> ² | 0.016 | 0.014 | 0.036 | 0.102 | 0.087 | 0.122 |

Notes: The table reports estimates coefficients and statistical significance. (***) indicates significant at 1%, ** indicates significant at 5%, * indicates significant at 10%) Foreign experience was age at which the migrant left their home country less the age at which they left school. Years of schooling was calculated as age left school minus 5. Married is a dummy variable which takes the value 1 if the individual was married. The remaining variables in the table refer to time of arrival in the UK. The model also contained controls for region of residence and year observed. For the Chinese group sample sizes are relatively low which is reflected in insignificant coefficient estimates and some caution should be exercised in the interpretation of the results for this group.