

## Working Paper 3

# DOES COMPETITION BETWEEN IMMIGRANTS AND NATIVE BORN EXIST? UNDERSTANDING THE IMPACT OF IMMIGRANTS OF THE LABOUR MARKET OUTCOME OF BRITISH WORKERS

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## 1. Introduction

Immigrant incorporation into a new society is by no means a one-directional process. Not only immigrants need to adjust themselves in various ways to incorporate into a host society, but the host society also inevitably changes under the impact of immigration, especially if the immigrant influx is large. Immigrants get involved in the process of social interaction both with the institutions in the host society as well as with groups of the native born population of different characteristics and also with groups of immigrants who had previously arrived.

Immigrant incorporation into a society which is already ethnically mixed may change the established ethnic socio-economic hierarchy, enhancing the socio-economic opportunities of some native ethnic groups, while worsening opportunities for others, subject to the relative socio-demographic characteristics of immigrant and native populations. Therefore, there is an ongoing interest in Western societies of how an influx of immigrants, from different national origin and with different skill levels, impact on the labour market opportunities and outcomes of various groups of the veteran population in the host society (eg Lieberman 1980; Jencks 2001; Borjas 2004, 2005).

Since the late 1990s Britain has experienced a dramatic increase in the number of immigrants; with a further rise in immigration since 2004, when the accession countries of Eastern and Central Europe joined the EU. At the same time there was also growth of immigration to the UK from non-A8 countries, especially from the New Commonwealth.

Immigrants are believed to have a profound effect on the host country labour market. It is anticipated that a large influx of immigrant labour into the labour market will depress the wage levels of non-immigrant workers, especially those with the same skill level as immigrants, and will push non-migrant workers out of some occupations and industries, indeed, may push them out of the labour market altogether.

However, most of the research on the immigration labour market effect in different countries that accept immigrants shown that immigrants have little if any negative impact on the wages

and employment opportunities of native workers (see Borjas and Freeman 1992; also Dustmann, et. al. 2005; Cohen-Goldner and Paserman 2005; Gilpin et. al. 2006; Blanchflower et. al. 2007), with some research showing a positive labour market effect of immigrants (Ottaviano and Peri 2006; Friedberg 2001).

Research on the labour market impact of immigrants faces a lot of methodological challenges and therefore the interpretation of the findings from this research has never been easy. Researchers on the immigration labour market impact are well aware about these methodological problems and usually interpret their findings cautiously. The main reason for these difficulties is that the labour market outcomes of workers are determined by such a wide variety of factors that only after identifying and accounting for all these factors (which is a very challenging task on its own), one can safely attribute the remaining spatial differences in workers' labour market outcomes to spatial variations in the size of immigration populations.

The objective of this research was to use the newly available Annual Population Survey data sets to evaluate contrasting theoretical frameworks and methodological tools for understanding the impact of immigration on the labour market, and to contribute reliable empirical evidence to wider debates about the impact on the labour market of immigration to Britain, by exploring:

- the relationship between the ethnicity, skill level of native workers, the size and skill levels of the immigrant population, the overall opportunity structure of the labour market and the labour market outcomes of native workers
- the differences in the immigration labour market impact between the pre-2004 immigrants and immigrants who have been arriving in the UK since 2004

The main research question in this research is if there is a systematic relationship between the spatial concentrations of immigrant population in Britain and the labour market outcomes of British workers?

Following related questions are addressed in this research:

- Are there correlations between the patterns of immigrant spatial distributions and the labour market outcomes of different groups of population in Britain, in terms of their wages, employment and occupational opportunities?
- To which extent spatial differences in conditions of local labour markets are responsible for the relationship between the immigrant spatial concentrations and the labour market outcome of British workers?
- Are there differences between spatial concentrations of pre-2004 and new immigrants?
- Does relationship between the spatial concentrations of immigrants and the labour market outcomes of British workers vary across local labour markets with different sizes of ethnic minority populations?
- Are spatial concentrations of new immigrants related differently to the labour market outcomes of non-migrant workers than the spatial concentrations of pre-2004 migrants?

- Does relationship between the spatial concentrations of new immigrants and the labour market outcomes of British workers vary across local labour markets with different sizes of ethnic minority and pre-2004 migrant populations?
- Are spatial concentrations of British born ethnic minorities related to the labour market outcomes of different groups of British population?
- How the labour market outcomes of low skilled workers are related to the spatial concentrations of migrants and British born ethnic minorities?

## **2. Theoretical Background**

In this research we study the relationship between the spatial concentrations of immigrant populations and immigration labour market effect on the local labour market level. Therefore, we first aim to identify the contextual level factors that affect the labour market performance of different groups of population and therefore could interfere in the relationship between the immigrant spatial concentrations and the labour market outcomes of population in Britain. Below we review theoretical literature in a search for a comprehensive set of such factors.

### *2.1 Classical economic theory*

The most of the research on the immigration labour market impact is conducted by economics and uses the classical economic theory approach. Classical economic theory suggests that influx of the immigrant labour force in the labour market leads to the shock supply of the labour force with a particular level of skills, which leads to the violation of the equilibrium in the labour market and results in the wage fall of non-migrant workers with comparable level of skills; immigrants also may displace non-migrant workers in whole occupations and force them outside the labour force (Borjas 2003). However, despite the expectations based on classical economic theory, the findings of the extensive research on immigration labour market impact in US, Europe and Israel are not conclusive, as some of these studies found a small positive while others a small negative effect of immigration.

In any case, the size of the immigration effect is much smaller that is can be expected according to the classical economic theory's predictions. It is still not very clear what is the source of the differences in findings, which meanwhile demonstrate that "the measured impact of immigration on ... native workers fluctuates from study to study, but seems to cluster around zero." (Borjas 2003: 1335).

Attempts to explain the absence of substantial empirical evidence about a negative impact of immigration on host country's labour markets produced a substantial literature in the UK and elsewhere. Thus, Frijters et. al. (2005) demonstrate that immigrant job search is less successful than that of natives; therefore immigrants do not effectively compete for jobs with natives and this explains why immigration has little impact on native employment. Similarly, Manacorda et al (2006) find evidence that natives and immigrants in the UK, like elsewhere, are imperfect substitutes, which explains why the impact of immigrants on the wages of the native born population is small.

There is also a more substantial criticism of the basic assumptions of quantitative research in this area and of elements of its methodology (Borjas, 2004). For example, there are implicit assumptions of a fixed quantity of jobs in the labour market that are not reflected in reality. The influx of migrants into the local labour market may boost development of both the service and manufacturing sectors and create new jobs and additional demand for manpower, including low-skilled and semi-skilled labour force positions (Sassen 1988; Soja 1989, Waldinger 1989).

However, the main conclusion from the literature is that this negative impact indeed exists, yet the methodological problems related to the empirical research on this impact do not allow “catching” it (Borjas 2004); therefore, special attention should be devoted both to understanding and overcoming methodological problems related to research on the labour market impact of immigration.

## *2.2 Opportunity structure of the labour market and spatial inequality in Britain*

The above criticism of the assumptions of the basic postulates of the classical economic theory naturally introduces the idea that opportunity structure of the labour market is not fixed; not only it varies across local labour market, but also it is changing over-time. Therefore, the conditions of local labour markets should be accounted for when labour market impact of immigrants is considered. Recent decades there was a growing understanding that the labour market operates and is being regulated on the local or spatial levels that define local and regional labour markets (Martin and Morrison 2003). The spatial character of the labour markets is expressed through the fact that most of the jobs are spatially located and workers have to live within the commuting distance from them (Cheshire et. al. 2003).

Spatial differences in labour market opportunities are an important factor that may affect the labour market outcomes of workers across different labour markets. The opportunity structure of local labour markets has an especially strong impact on the economic and occupational outcomes of lower status groups, such as low educated people, ethnic minorities and recent migrants, who have difficulties to find and access spatially distanced jobs, and who therefore tend to search for employment in proximity to their place of residence, i.e. in their local labour markets.

Furthermore, one should take particular care to insure that the relationship between the immigrant spatial concentrations and the labour market outcomes of workers do not result from the immigrant propensity of being concentrated spatially in the labour markets of particular characteristics, for example, in the local labour markets with high level of wages, or in labour markets where job opportunities mostly are in low tech traditional industries, etc. Such characteristics of local labour markets shape the socio-economic profiles of their non-migrant incumbents. Therefore, some researchers conduct the study on the level of the national economy rather than on the level of the local labour markets (Borjas 2001), while others, do not use actual size of immigrant populations in the local labour markets but

predict the size by means of other variables which in turn do not depend on the characteristics of local labour markets (Friedberg 2001; Dustmann et. al. 2005).

In this study, we control for differences in labour market opportunities across local labour markets. We use such indicators of the local labour markets conditions as employment rate, the degree of social inequality in the local labour market, a degree of concentration of job opportunities in traditional industries such as building and manufacturing (Morrison and Berezovsky, 2003).

### *2.3 Ethnic composition of local labour markets and the labour market impact of immigrants*

Finally, there is evidence that immigrants affect differently different groups of the host country population and that the labour market effect of immigrants is different in the labour markets with different degree of segmentation or segregation. The most of this evidence is coming from the research conducted by sociologists rather than economists. This research documented a large negative labour market effect of immigrants, especially in terms of native workers displacement. This research is informed mostly by the “ethnic pluralism” approach (Lieberson 1980), which implies that immigrants, as a rule, are entering local labour markets, which are already ethnically diverse, and therefore, labour market impact of immigrants is multidirectional rather than one-directional. This approach suggests that in contemporary multi-ethnic local labour market a position of new immigrants would depend on the relative prestige of the latter among veteran ethnic groups or, generalizing this further, among all low-status groups, which are already present in the local labour market. Indeed, empirical findings from case studies and interviews of workers and employers confirms employer prefers to hire the members of (ethnic) groups, which have a good reputation as workers, therefore if immigrants are viewed as a poor substitute even to a low-skilled native born, and the latter are the preferable choice in the eyes of the local employers, an arrival of immigrants would be beneficial for local lower status groups: immigrants would take a least attractive jobs and contribute to the occupational mobility of the native born; however if immigrants are perceived as better workers than native groups the former displace native-born ethnic minorities in whole industries (Waters 1999). The ethnic pluralism approach also assign an importance to the relative size of the dominant ethnic group in the area – the smaller is the latter size is, then the more opportunities in higher status occupations would be open to the local ethnic minorities/low status groups once immigrants arrive and fill in the least desirables positions in the labour market (Fosset et. al. 1986; Tieda and Lii 1987; Shaginyan-Shapira 2007)

It is apparent that recognition of the multiethnic context of labour markets and taking into account of the number and size of ethnic groups among the non-migrant population are very important in assessing the impact of immigration on the labour market.

In summary, this research draws on classical economic theory, geography of local labour markets and sociological concepts of ethnic pluralism and ethnic queues, to explore how immigrant spatial concentration affect the labour market outcomes of workers.

## 2.4 Hypotheses

Following hypotheses were formulated on the basis of the theoretical background presented above:

- H1. Immigrants would have different impacts on different groups of non-migrant population in Britain, and the direction and size of impacts would depend on the characteristics of immigration, such as a period of immigrant arrival, and on a degree of correspondence between the skill-level of immigrant and the UK-born population.
- In particular, one may expect that pre-2004 immigration would affect negatively the labour market outcomes of low skilled British born workers and British born ethnic minorities, while “new” immigrants, who are, as a rule, well educated, would affect negatively the labour market outcomes of people with higher level of education.
- H2. Immigrants spatial choice influenced by the local labour market conditions, which, in turn, largely determine the characteristics of veteran incumbents of local labour markets; therefore, the nature of the labour market impact of immigrants would depend, to a large extent, on the local labour market conditions.
- In particular, one may expect that accounting for the local labour market conditions will weaken the relationship between the immigrant spatial concentrations and the labour market outcomes of workers.
- H3. The direction and the magnitude of the labour market impact of immigrants would depend on the ethnic composition of the local labour market and the relative size of minority groups in it.
- In particular, the labour market impact of the spatial concentrations of pre-2004 immigrants would depend on the size of the British born ethnic minority population, while the labour market impact of the spatial concentrations of new immigrants would also depend on the size of the pre-2004 immigrant population in local labour markets. Thus, in local labour markets where exist large populations of British born-ethnic minorities, pre-2004 immigrants would have smaller impact on the outcomes of British population; similarly, in local labour markets where exist large populations of pre-2004 immigrants new immigrants respectively would have smaller impact on the outcomes of British population compared with the local labour markets where the respective size of these populations are small.

## 3. Methodology

**Research design and data.** This research was design to address the methodological problems that studies on the labour market of immigrants usually face.

Unlike other studies conducted in the UK about the immigration labour market impact which conduct the analysed on the regional level, this study was design to capture more accurately the immigration effect on the level of small areas, ie the local labour markets. For doing this we used the 2006 Annual Population Survey<sup>1</sup> data (APS). The APS (launched since 2004)

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<sup>1</sup> The APS comprises key variables from the LFS, including education, employment and ethnicity.

were designed to provide reliable estimates at small area level in one time-point. The 2006 APS<sup>2</sup> offers large and representative samples of at least 601 economically active individuals for 201 Unitary Authority (UA)/Local Authority Districts (LAD). The sample of individuals aged 16-65 was used in the study.

In the most empirical studies local labour markets are defined as travel-to work-areas (Reimer, 2003). In this study we approximate the local labour market through the 180 Unitary Authorities/Local Area Districts in Britain in which respondents live. We did so because the immigrants and socially and economically weak population which is expected to be affected most by immigrants, tend to search for employment and work in the proximity to their residence, ideally in the locality of their residence (Mensah, 1995)

**Dependent variables.** The labour market outcomes of population in Britain were measured through the following three indicators which became dependent variables in this study:

- Dependent variable: Natural logarithm of monthly wages of employed population (excluding self-employed)
- Dependent variable: Labour market destinations:
  - Odds to be in social classes I to III: managerial, professional and intermediate occupations
  - Odds to be in social classes V and VI: skilled manual and lower supervisory occupations
  - Odds not having social class: never worked/out of the labour force/ long term unemployed.

Reference category for the labour market destinations:

- Social class VII: semi-skilled and unskilled manual occupations and short term unemployed.

### **Independent variables.**

#### ■ **Level of individuals:**

#### **Comparison groups:**

Ethnicity –

- White British (reference group);
- Immigrants;
- British born ethnic minorities.

Religion –

- Christians (reference group);
- Muslims;
- other religions.

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<sup>2</sup> When this study began in 2007 the 2006 APS data provide the largest numbers for subpopulations of new immigrants who have been arriving in Britain since 2004

Level of educational qualification (National Vocational Qualifications):

- no qualification (or unknown);
- below NVQ level2; N
- NVQ Level2;
- NVQ Level3 (reference group);
- NVQ level4 and level5.

Other variables are:

Marital status:

- single (reference group)
- married (cohabited)
- widowed, divorced; separated.

Age (and age squared in the income regression).

Tenure in the UK for immigrants.

Gender ( men the reference group).

A series of control dummy variables in the regression model that predicts labour market destinations are as follows:

- student status
- disability status
- pensioner
- single parent family
- number of children

**Contextual (local labour markets) level variables.** The contextual variables of our main interest are the relative sizes of immigrant populations in local labour market.

We do not subdivide immigrants by their national/ethnic origin. Instead, we subdivide all immigrants by two wide groups, the pre-2004 immigrants and new immigrants, ie those who arrived in Britain in 2004 or thereafter.

Rather than considering the correspondent proportions of pre-2004 and new immigrants in local labour markets, we choose to consider a proportion of a total immigrant population in the local labour market, and then additionally to introduce the proportion of the new immigrants out of the whole population of immigrants. Such research design have considerable advantages<sup>3</sup>, because it estimates the immigration impact controlling for the size of the new immigrant population, and at the same time, it allows to estimate not only the effect of the new immigration as such, but also to assess how the effect of the new

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<sup>3</sup> See also next section for more detailed explanation why this particular variable has been chosen in this research.

immigrant spatial concentrations vary across the local labour markets with different sizes of “traditional” immigrant populations.

The two following variables identifies spatial concentrations of immigrants:

- Percentage of the total economically active population in the UA/LAD who are not UK born and do not describe themselves as “White British”;
- The *relative size* of new immigrant population – the percentage of the migrant population in the UA/LAD who are “new” migrants, ie migrants arrived in 2004 or thereafter out of the all.

To resolve the problem of correlation between the size of the population of immigrants and between those particular characteristics of local labour markets, which attract immigrants, but also shape the socio-economic profiles of the veteran incumbents of the local labour markets, we account for contextual factors which shape the local labour market conditions (an example of such research design can be found in Shaginyan-Shapira, 2007).

We operationalised and measured the local labour market conditions through the following variables:

- Percentage of those in the total economically active population in the local labour market who are employed.
- Percentage of those in the total employed population who employed in manufacturing jobs.
- Percentage of those in the total employed population who employed in construction jobs.
- Percentage of those in the total employed population who employed in banking and finance.
- The degree of overall socio-economic well being of the locality – (a)percentage of those in the total employed population who are in Socio-Economic Class I (according to the EGP classification); (b) percentage of those in population aged 16-65 with the educational qualifications below NVQ level 2; the percentage of those in the total employed population those who employed in unskilled occupations.

The variable that allowed to identify the size of the British born ethnic minority population was:

- Percentage of those in the total economically active population in the UA/LAD who are British born ethnic minorities.

**Statistical Method** used in this study is the hierarchical linear modelling, HLM (Bryk and Raudenbush, 2002). This method is appropriated for data, which have clear hierarchical, nested structure, like in the case of the present study, where individuals are positioned in the larger, macro-level units, local labour markets. The general aim of hierarchical linear modelling is to formulate and test hypothesis how variables measures on the macro level affect relationship between the independent and dependents variables on the level of individuals.

The method allows modelling in the individual level regression model (1) random intercepts to estimate how particular characteristics in the macro level affects average values of the dependents variable in each one of macro-level units, and (b) random slopes of particular independent variables which subdivide the population by sub-groups to test whether all sub-groups in the particular macro- level unit are affected by the macro level variables in the similar or different fashion.

We estimated multinomial multilevel regression to predict labour market destinations of British population. We modelled random intercepts, and random slopes for such individual level independent variables as “immigrant status”, “ethnicity”, “religion” and “level of education”. We also estimated linear multilevel regression to predict wages of employed British population.

This particular research design allows assessing if immigrant impact on the British labour market is different for different ethnic groups and varies according to the level of educational qualification of individuals.

The estimated models of income and of individual opportunities of being in the following labour market destinations (1) of economic inactivity; (2) of being in higher status blue collar occupation. ie semi-skilled or lower supervisory occupations; and (3) s of being in white collar occupation, ie higher and lower managerial and professional and intermediate occupations can be formally presented as follows:

$$Y_{ij} = \left( Y_{00} + \sum_{j=1}^J \mu_{0j} + \sum_{k=1}^K \sum_{s=1}^S Y_{qkZ_{sj}} \right) + \sum_{q=0}^Q Y_{q0} X_{qij} + \sum_{q=1}^Q \sum_{j=1}^J \mu_{qj} X_{qij} + \sum_{q=1}^Q \sum_{s=1}^S Y_{qs} Z_{sj} X_{qij} \quad (1)$$

In (1)  $Y_{ij} = \ln(\text{wages})_{ij}$  in income regression and  $Y_{ij} = \text{Logit}(E_k)_{ij}$  in the regression that predicts the individual opportunities of being in particular labour market destinations.

In (1) subscript “k” indicates a particular labour market destination ( $k=1,2,3$ ); subscripts “i” and “j” indicated individual i in locality j ( $j=1 \dots J$ );  $\mathbf{X}$  a vector of (length Q) independent variables on the level of individuals ( $X_{ijq} = \{x_{ij1} \dots x_{ijQ}\}$ );  $\mathbf{Z}$  is a vector of (length S) independent variables on the level of localities ( $Z_{js} = \{z_{j1} \dots z_{jS}\}$ ).

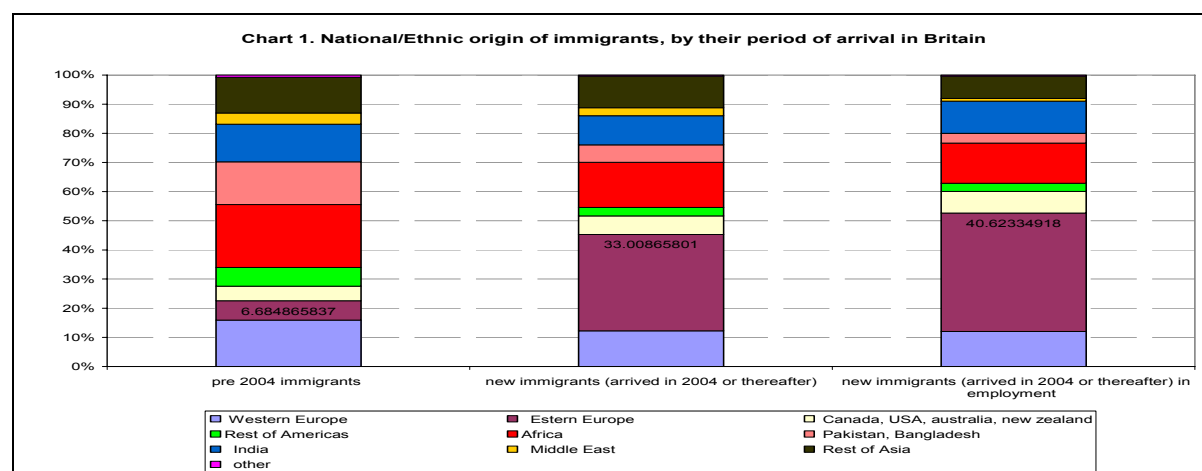
In (1) the two three first terms,  $Y_{00} \sum \mu_{0j}$  and  $\sum Y_{qs} \mathbf{X}_{sj}$  account for the random intercept ( $Y_{00}$  estimates the fixed effect of the intercept,  $\mu_{0j}$  is the random intercept for the level two [localities] units and  $\sum Y_{qs} \mathbf{X}_{sj}$  estimates the level two covariates, ie the percentage of all migrant population ; the relative size of new migrant population; the percentage of ethnic minorities; the percentage of employed; the percentage employed in manufacturing sector; the percentage employed in construction sectors; the percentage employed in of banking and finance sector; the degree of the overall socio-economic well being of the locality measure as a percentage of population in the socio-economic class I); the forth term  $\sum Y_{q0} \mathbf{X}_{qij}$  estimates individual level covariates (age, aged squared, tenure in Britain for migrants, tenure squared; dummy variables for migrants , ethnic minorities, Muslims; religions other than Christian and Muslims, gender, being married, being ex-married; a series of dummy variables for level of educational qualification; in the regression that

predicts the individual chances of being in particular labour market destination, it includes also following control variables: number of children; dummy variables for student status; dummy variable for family status; dummy variable for pensioner status; dummy variable for disability status); the fifth term accounts for the random slopes of the level 1 variables, which is assumed to vary between localities; and the sixth term estimates the cross level interactions between the locality level variables and the following dummy variables: immigrant; ethnic minority, Muslim, and five level of educational qualifications (slopes of other independent variable are constrained to be constant across localities).

## 4. Results

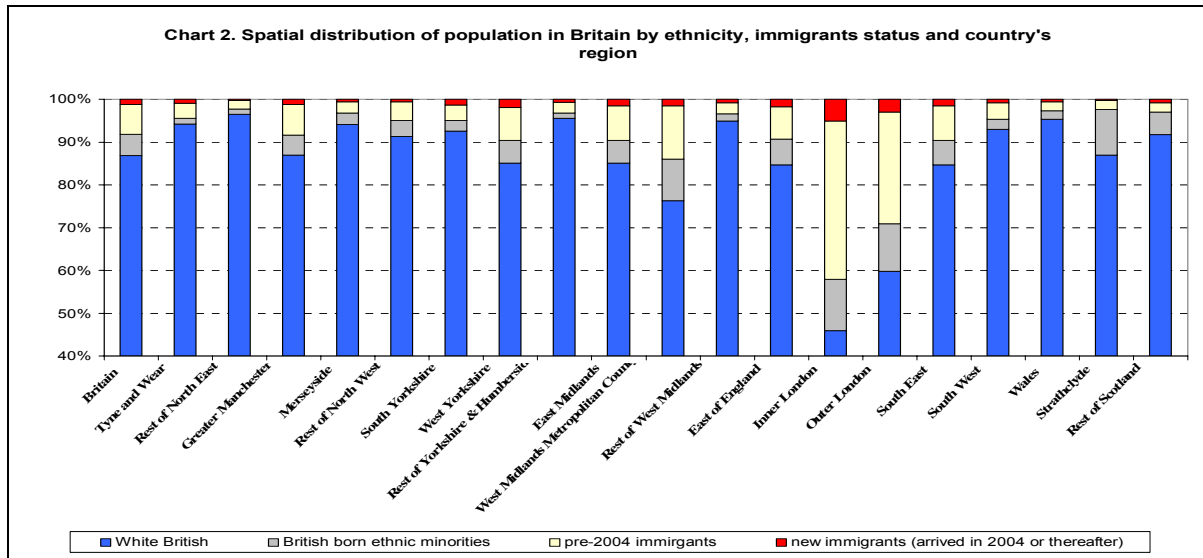
### 4.1. Spatial distributions of immigrants in Britain

Chart 1 presents the composition of population of immigrants in Britain by their national or ethnic origin and differences in this composition that exist between immigrants arrived in Britain before 2004 and that of new immigrants. Eastern European immigrants, who used to be a small minority among the whole population of immigrants before 2004, make more that a third of all migrants arrived since 2004. Moreover, if only economically active post-2004 migrants are considered, a share of Eastern European immigrants among the latter is 40 percent. Other post-2004 migrants originate from three main sources - African continent, Western Europe and India.

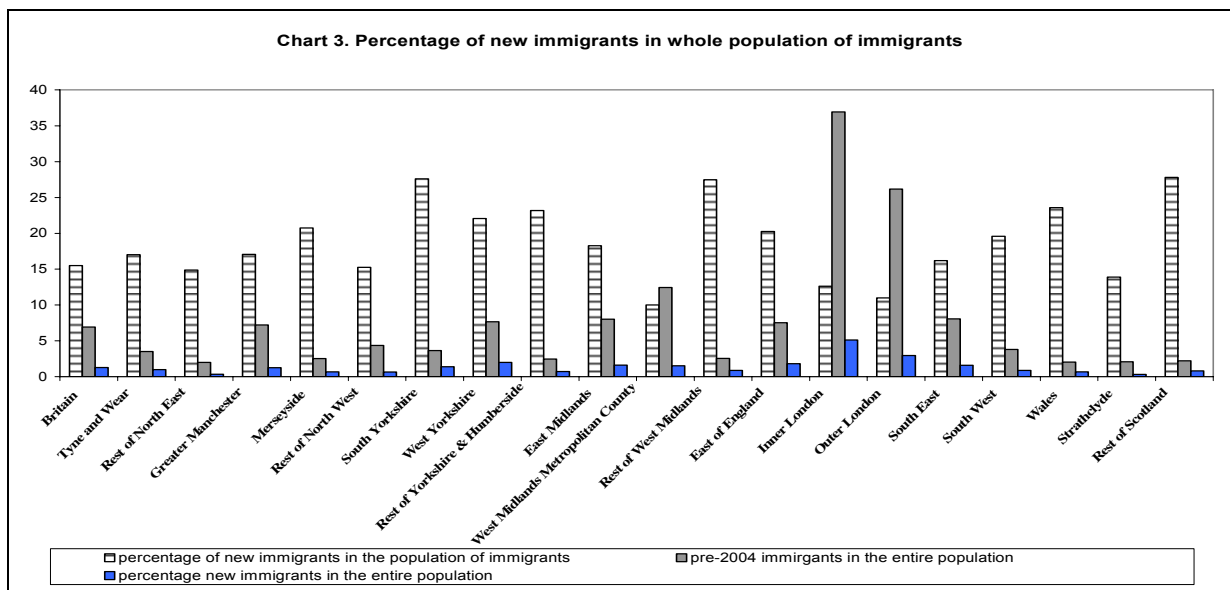


Charts 2 and 3 show differences in spatial distributions between different groups of population in Britain. Majority of immigrants (and British born ethnic minorities) live in Inner and Outer London where they make up 35% and 27% of total population<sup>4</sup> respectively, then in East Midlands (14%), and in South East, West Yorkshire and Great Manchester (where the immigrants make on average about 10 % of the total population).

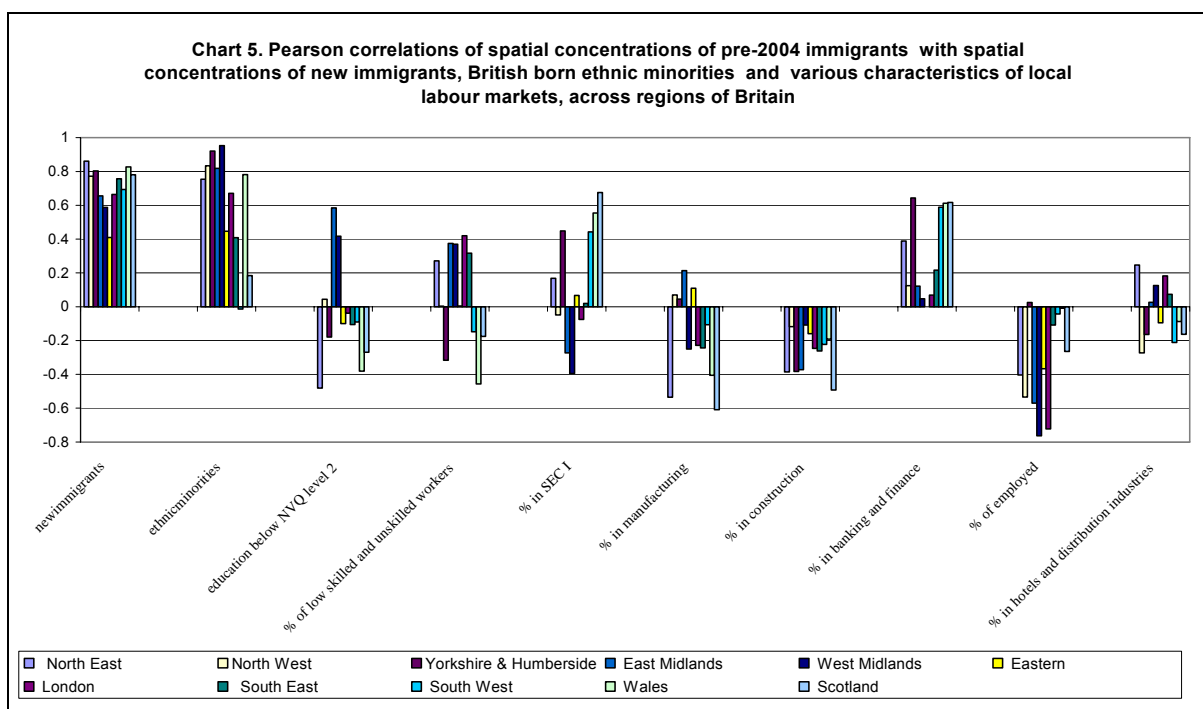
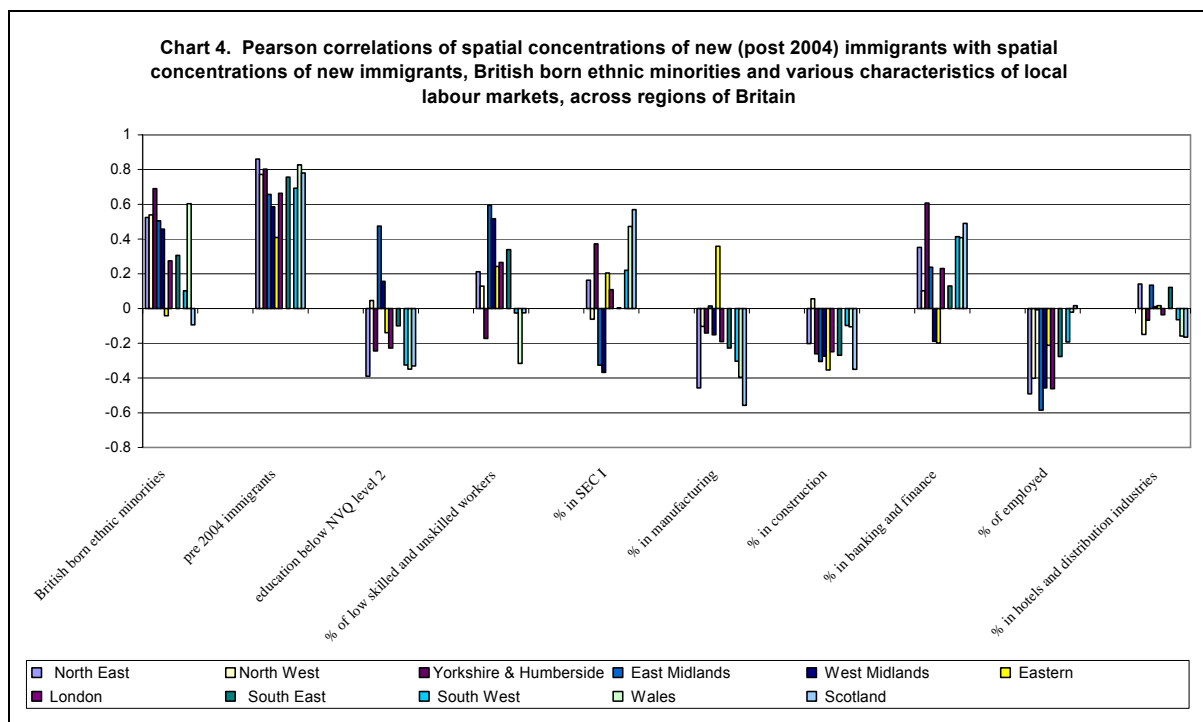
<sup>4</sup> We consider percentage of immigrants in employed population aged 16-65



Although the largest spatial concentrations of new (post-2004) immigrants coincide with the largest spatial concentration of the pre-2004 immigrants, the former are distributed more evenly throughout Britain than the latter, and therefore, have a relatively large representation in regions where spatial concentrations of pre-2004 immigrants are small. Thus, although the largest populations of new immigrants are found in such areas as Inner and Outer London and in West Midlands, (5% and 4% respectively of the total population in these regions) , they make there only 10-12 percent out of the whole population of immigrants. However, in other areas, such as Yorkshire, East Midland, South Yorkshire, Wales and Scotland (excluding Strathclyde) where the size of pre-2004 population of immigrants is relatively small, the size of the population of new immigrants is relatively large and make from 16 to 27 percent of all immigrants in the area.



Charts 4 and 5 presents graphically the Pearson correlation coefficients between the spatial concentrations of immigrants and contextual characteristics of regional labour markets.



Spatial concentrations of new immigrants have a positive, a weak-to-moderate correlation with spatial concentrations of British born ethnic minorities in 7 out of 11 regions. In Eastern region and in Scotland the correlations are negative, while in Yorkshire and Humberside region and in Wales the spatial concentrations of new immigrant and British born ethnic minorities correlate strongly and positively. Unlike that, spatial concentrations of new immigrants correlate strongly and positively in all regions but Eastern (see chart 4). Spatial concentrations of established immigrants better coincide with spatial concentrations of British born ethnic minorities – the correlations between the former and the latter are strong and positive in 7 regions out of 11 and they are positive and from weak-to-moderate in Scotland, South East, South West and Eastern regions (see chart 5). Spatial concentrations

of both new and established immigrants correlate negative with spatial concentrations of low education population in all regions but East and West Midlands.

Spatial concentrations for all groups of immigrants correlate positively and weakly in 5 regions with the concentration of low skilled and unskilled workers. The correlation is positive and moderate in East and West midlands only, while it is negative in Yorkshire, South West, Wales and Scotland. Spatial concentrations of pre-2004 immigrants show the same patterns of correlations with the concentrations of low skilled/unskilled population, however, the magnitudes of the positive correlation coefficients are weaker while the magnitude of negative correlations are stronger than those for the new immigrants. The spatial concentrations of both groups of immigrants are related rather positively with spatial concentrations of socio-economically well-off population with the exception of the North West, East and West Midlands for all migrants, and London for pre-2004 migrants. The spatial concentration of both groups of migrants correlate negatively with spatial concentration of jobs in construction and manufacturing with only few exceptions. Thus, there is a positive correlation between the size of the population of new immigrants and the amount of jobs in construction in York; the size of the population of pre-2004 immigrants correlates positively with high number of jobs in manufacturing in North West, Yorkshire, East Midlands and Eastern region. Spatial concentrations of both groups of migrants correlate negatively with spatial concentrations of employed population.

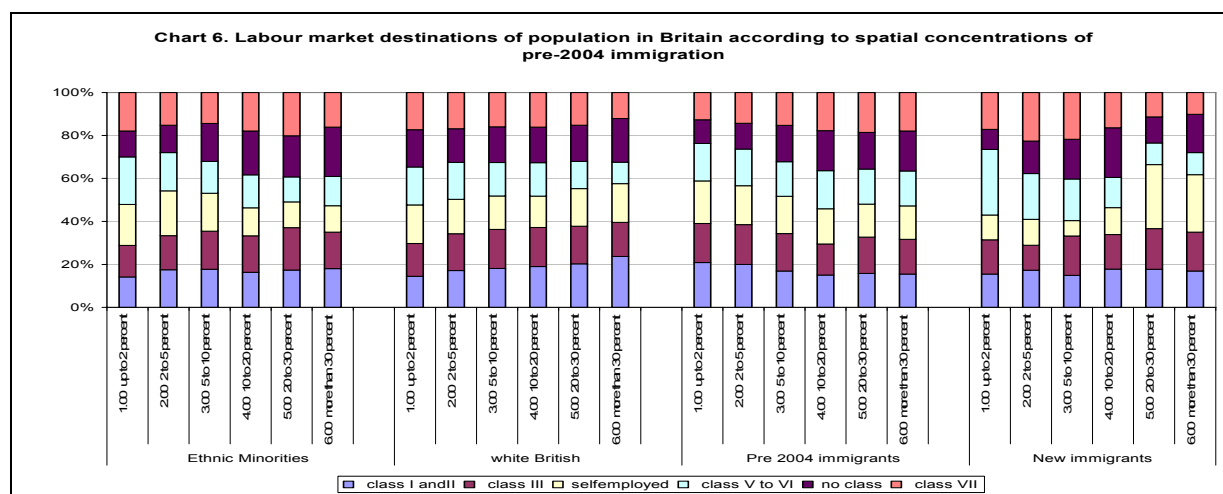
Further, descriptive findings show that for the White British population, living in labour markets with large concentration of populations of immigrants (both pre-2004 and new immigrants) means more advantageous distribution of LM destinations, such as a larger share of white collar occupations (SEC I, II, and III), and a smaller share of unskilled and semi-/skilled occupations (SEC V, VI and VII). For British born ethnic minorities, larger populations of both pre-2004 and new immigrants are related to labour markets where ethnic minorities are more frequently employed in intermediate white collar occupations (SEC II); yet in such labour market ethnic minorities have a smaller share of self-employed workers and workers who employed in semi-skilled/ skilled occupations, while they also have larger share of economically inactive population and unskilled workers (Chart 6 and Chart 7).

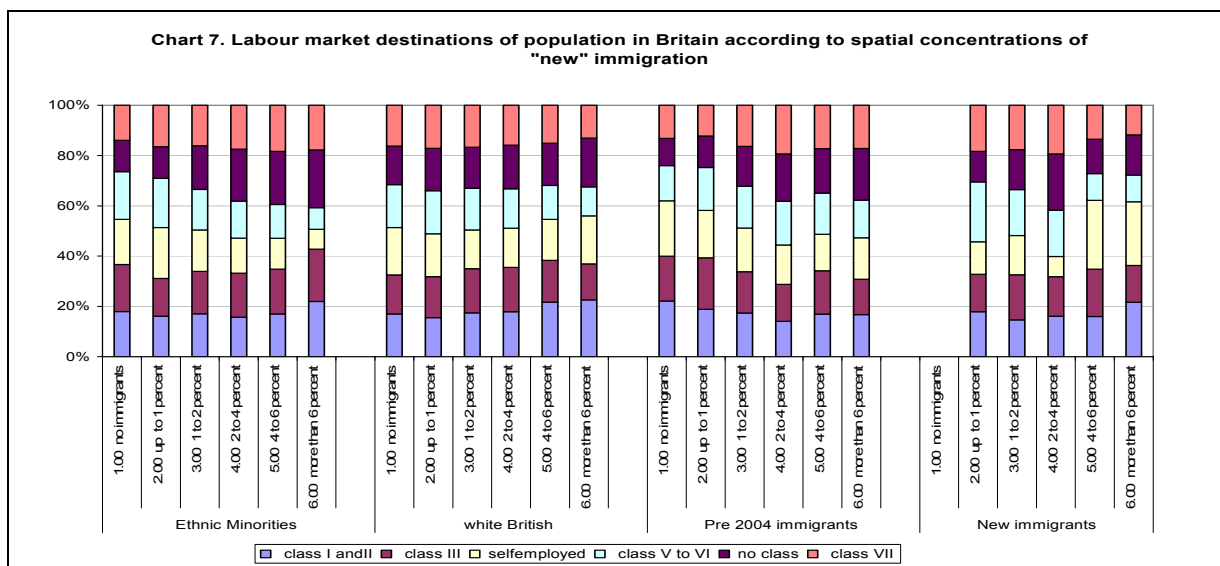
Among migrants themselves, larger spatial concentrations of migrants indicated labour markets with were migrants have less unskilled, and semi-skilled/skilled jobs, they are more likely to be self-employed, yet they are also more likely to be economically inactive.

So far, the findings show that associations between the spatial concentrations of migrants and the occupational outcomes of British population follows the similar patters both for pre-2004 and new immigrants. A quick look at Chart 8 confirms that the patterns of relationship between the share of immigrant populations in local labour markets and wages of British workers are also similar for both groups of immigrants. Indeed, wages of British born Whites are higher in the labour markets with larger relative size of immigrants' populations and the wages are particularly high in labour markets where the relative size population of pre-2004 immigrant population reaches 20 percent or more, and where the relative size of new-immigrants population reaches 5 percent or more, of the total population in the local labour market. For the British born ethnic minorities the positive association between the relative

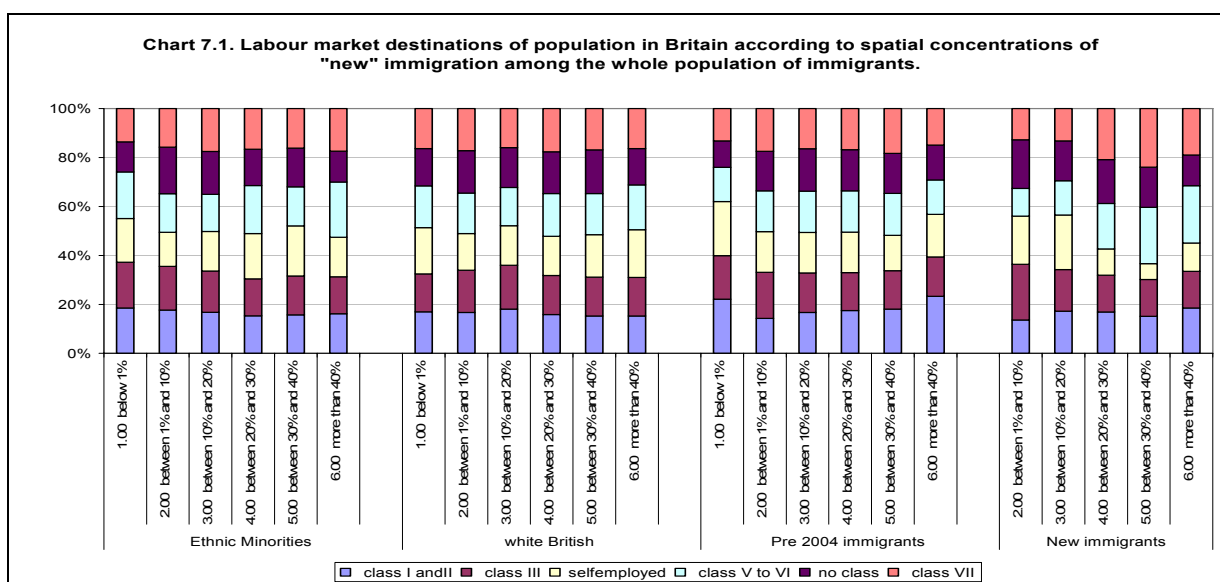
size of populations of immigrants and wages also exists but it is more modest than for the British born Whites.

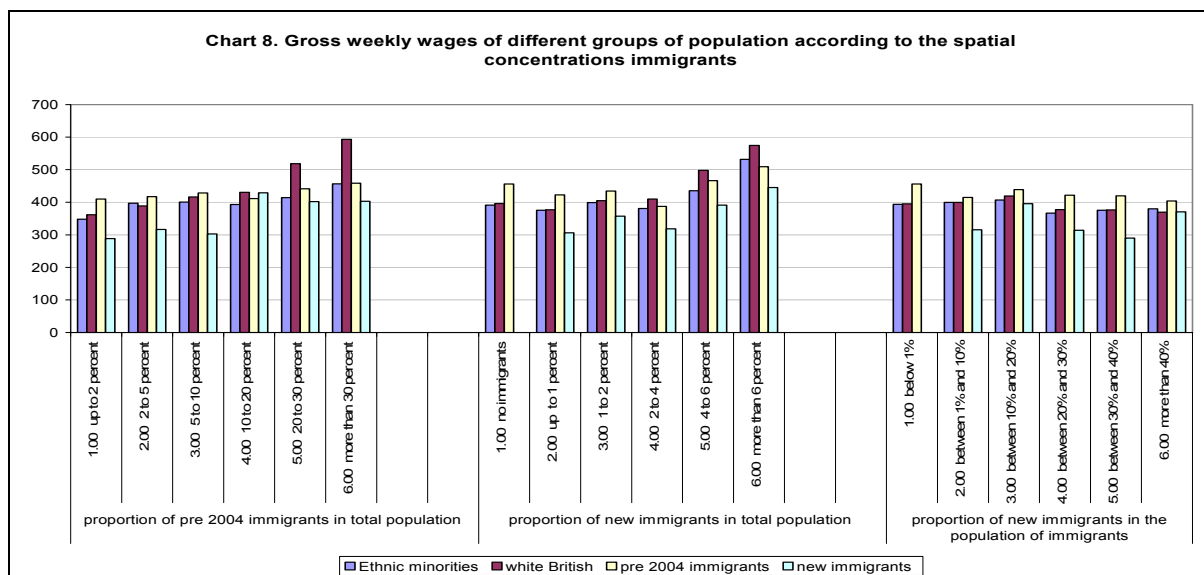
A resemblance between the patterns of association among the labour market outcomes of British workers and sizes of populations of both pre-2004 and new immigrants in labour markets, however, may merely reflect the fact the largest concentrations of new immigrants coincide with the peaks of spatial concentrations of pre-2004 immigrants (see Chart 3 where common distribution of the populations of pre-2004 and new immigrants across regions in Britain are presented). Given this and the fact that the relative size of the population of new immigrants is small in total population, the association between the proportion of new immigrants in total population and the labour market outcomes of British workers might mimic the association between the latter outcomes and the size of the population of pre-2004 immigrants, especially in regional or local labour markets with largest spatial concentrations of pre-2004 immigrants. However, new immigrants are spread throughout Britain more evenly than pre-2004 immigrants and they have relatively large spatial concentrations also in regions where rather few pre-2004 immigrants live (see Chart 3). Therefore, a proportion of new immigrants in the population of immigrants in the regional/local labour market is more meaningfully related to the potential impact which new immigrants might have on the local labour market than the proportion of new immigrants in the total population of the regional/local labour market.





Indeed, data presented in Charts 7.1 and Chart 8 show that the pattern of relationship between the proportion of new immigrants in the population of all immigrants in a labour maker and the labour market outcomes of British workers is different from the relationship between the latter outcomes and the size of the population of pre -2004 immigrants. Thus, an increase in number of new immigrants in the population of all immigrants, to 20 or more percents in the labour market is related to a 10% decrease in wages for the British born ethnic groups; the latter increase is also associated with a slight decrease of the share white collar occupation among the British born population, yet it is also associated with a decrease in the share of economically inactive population, especially among the British born ethnic minorities, and a correspondent increase the share of semi-skilled and skilled workers.





However, the described above relationships between the spatial concentration of immigrants and the labour market outcomes of British workers do not account neither for the characteristics of individual workers, nor for the conditions of the local labour markets and differences in these conditions across Britain. Nor do they account for the associations between the spatial concentrations of immigrants and conditions of the local labour markets. Therefore, in the next section we present the results of the multilevel multivariate regression modelling that predicts the labour market outcomes from the spatial concentrations of immigrants, while controlling for the individual characteristics of workers as well for the characteristics of local labour markets.

As we expected, a measurement of the presence of new immigrants in local labour markets through their proportion in the population of all migrants provides a more sensitive tool that allows capturing the labour market effect of new immigrants, using a proportion of new immigrants in the entire population of local labour market. For the of this presentation we use proportion of new immigrants in the population of all migrants, together with the proportion of all immigrants in the total population in the local labour market as measurement of immigrants presence in local labour markets. Indeed, such technique allows control simultaneously for the sizes of all populations of immigrants, and more importantly, the estimate the effects which new immigrants have on the labour market outcomes of the population in local labour markets new of the impact on this outcomes the size of the per-2004 population, while controlling also for the total size of immigrant population in local labour markets. This allows capturing not only differences in the differences in the labour market impact of new immigrants between localities where established migrants populations existed before 2004 and localities where the new immigrants since 2004 formed the first significant migrant sub-populations.

#### *4.2. Summary and discussion of findings from the multivariate multilevel regression analyses of the immigration impact on income attainment and employment and occupational opportunities of population in Britain*

Tables with the outcomes of multilevel regression modelling are presented in the Appendix 1. In what follows we do not discuss the impact of variables measured on the level of individuals on the labour market outcomes of British population. We rather use the individual level variables as control variables, and proceed to the consideration of the results of the multilevel regression modelling on the second level, which is the level of local labour markets. The parameters of these macro-level variables were estimated for each of the dependents variables (see the Methodology section above) in the level 2 regressions (1) for random intercepts which provides us with estimates for the reference group of comparison, ie the British born White population with an average level of educational qualifications, Christians or without religious affiliation; (2) for the random slopes of independent variables, which subdivide the entire population into the sub-populations of out interest, ie British born ethnic minorities, immigrants, religious minorities, and people with different levels of educational qualifications. In Charts 9, 10, and 11 we present the outcomes of the multilevel modelling on the second level of the analysis, for the main macro-level variables of our interest, ie “percentage of all immigrants in local labour market” and the “percentage of new immigrants in the population of all migrants”. Each estimated parameter is presented twice, that is before and after the variables, which describe the opportunity structures of local labour markets and their ethnic compositions are introduced in the regression. The estimated parameters of the independent variables of our main interest are referred to as “gross labour market impact of immigrants” if the characteristics of local labour markets are not controlled for in the regression, and the parameters are referred to as “net labour market impact of immigrants” if these characteristics are controlled for. In what follows we mostly discuss the “net impact” of immigrants on the local labour markets.

##### **The labour market impact of the pre-2004 immigrants.** We found that

- Spatial concentrations of pre-2004 immigrants are not related to the net chances of non-immigrant workers of working in higher status occupations (Chart 9).
- Spatial concentrations of pre-2004 migrants are positively associated with higher odds of economic inactivity of the non-immigrant population. This relationship weakens but remains statistically significant and preserves its direction when local labour market characteristics are accounted for (Chart 10).
- Pre-2004 immigrants spatial concentrations have a net positive effect on the wages of non-migrant workers (Chart 11).

##### **The labour market impact of “new” immigrants**

We found that a negative effect of new immigration does not exist in every local labour market with a large population of new immigrants. The labour market impact of new immigrants depends on the size and composition of the immigrant population in local labour markets. The negative effect of the presence of new immigrants is felt by non-migrant

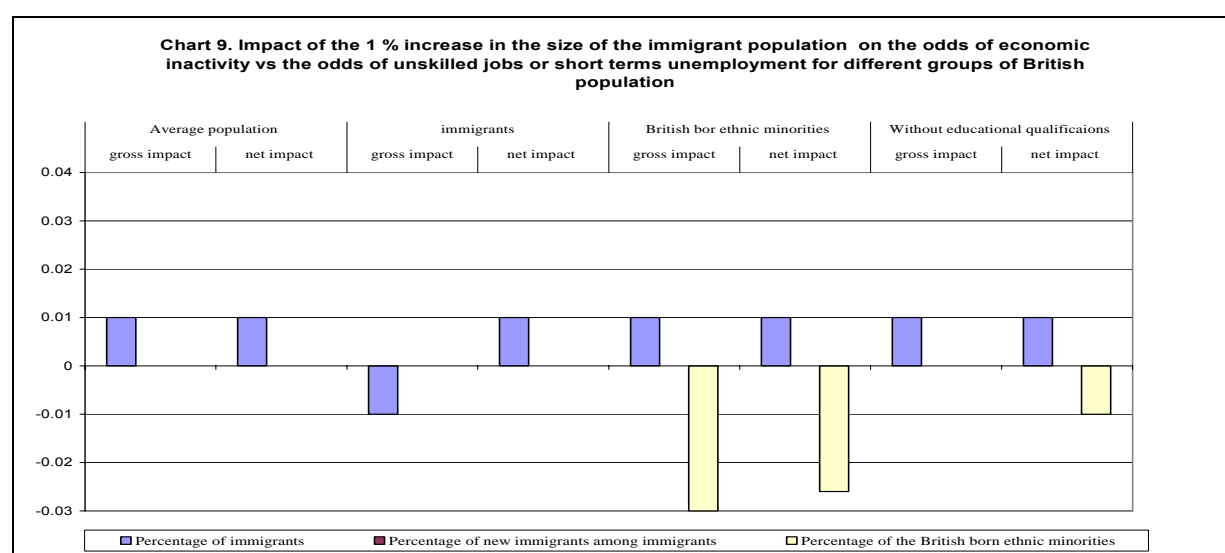
workers only in those localities where immigrant populations were small before 2004 and thus where new migrants make a sizable proportion in the whole population of immigrants (Charts 9 and 10). Thus,

- A higher proportion of new immigrants in the whole population of immigrants is negatively related to the higher odds of non-immigrant workers of working in white collar occupations. Accounting for the characteristics of the local labour markets does not cancel this relationship although it makes it weaker
- A higher proportion of new immigrants in the whole population of immigrants is negatively related to wages of non-immigrant workers of working in white collar occupations. Accounting for the characteristics of the local labour markets does not cancel this relationship although it makes it weaker (Chart 11).

### Differences in the labour market impact of immigrants among sup-populations of the native-born in Britain

We found that immigrants have a similar effect on all groups of the non-migrant population but people with a highest level of educational qualifications. We did not find any evidence that British born ethnic minorities or people with lower levels of education are affected by immigration in a more negative way than the White British population with an average level of education.

However, wages of workers with highest level of educational qualifications (NVQ level 5) are more negatively affected by the spatial concentrations of new immigrants in the localities which small size of pre-2004 immigrants population, than the wages of people with other levels of educational qualifications.

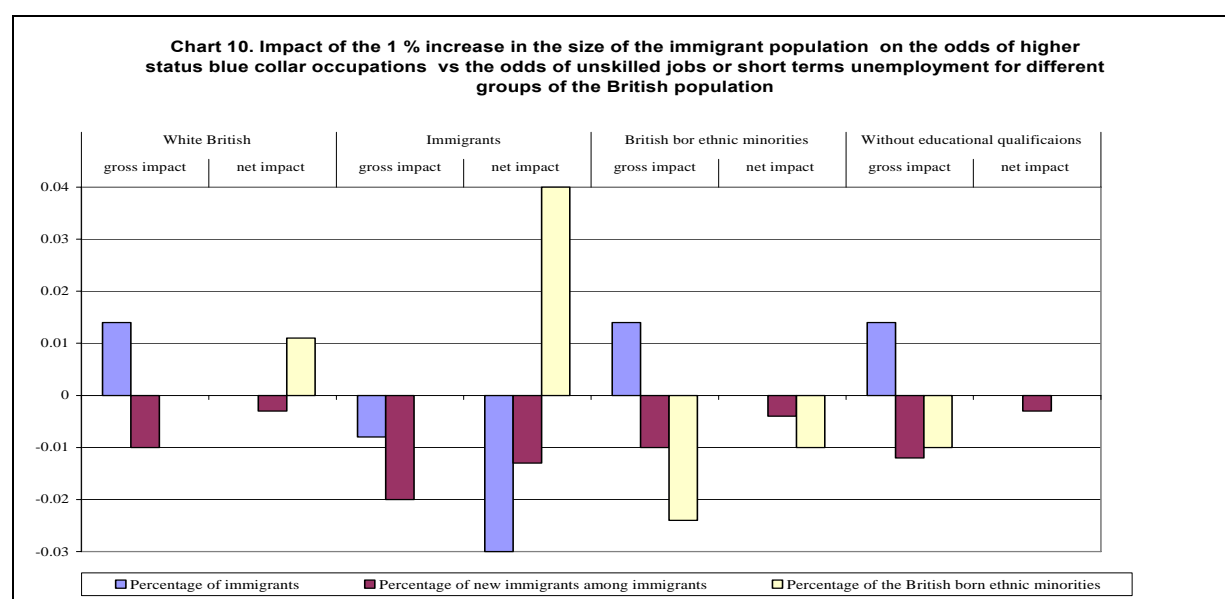


Furthermore, the spatial concentrations of pre-2004 immigrants are related positively, net of other characteristics of local labour markets, to wages of workers with the highest level of educational qualifications, however this relationship is weaker than the relationship between

the spatial concentrations of pre-2004 immigrant and the wages of workers with average or below average levels of educational qualifications.

### Impact of the spatial concentrations of immigrants on immigrants themselves

We found that spatial concentrations of immigrants have a stronger negative effect on the occupational opportunities of migrants themselves than on the non-migrants population. Thus, in local labour markets with large immigrant populations immigrants are more likely to have unskilled jobs than work in higher status blue collar occupations or in white collar occupations. Or below-average levels of educational qualifications.



### Differences in the immigration labour market impact according to the ethnic composition of the local labour markets

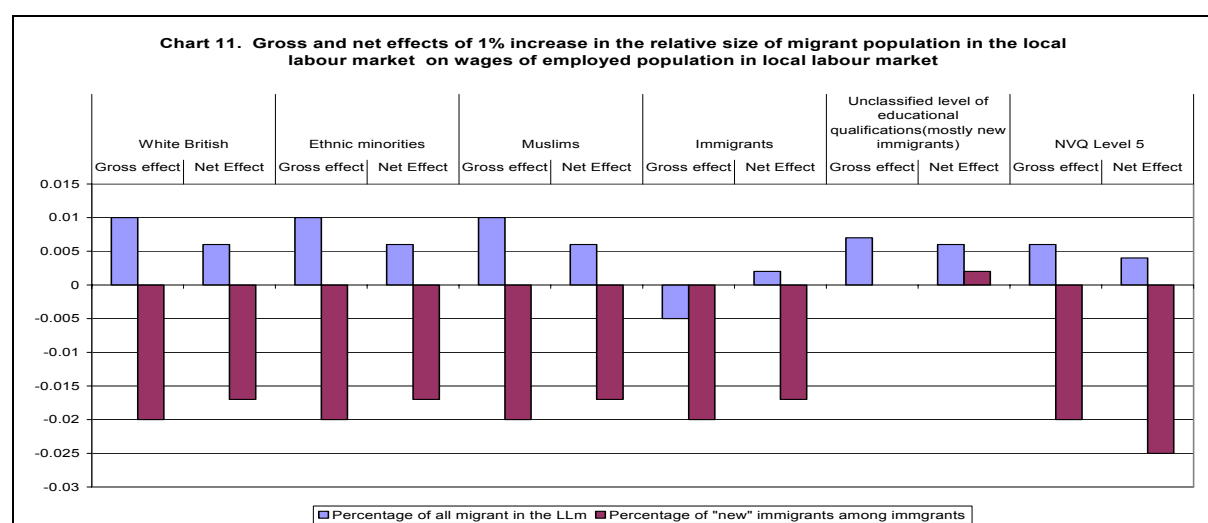
We found that the ethnic composition of local labour markets does not mediate the relationship between spatial concentrations of immigrants and the labour market outcomes of non-migrant workers. Nor does accounting for the size of the ethnic minority population change the labour market effect of immigration.

### Spatial concentrations of British-born ethnic minorities and the labour market outcomes of different groups of British worker. We found that

- In localities with a high concentration of British ethnic minorities both the White British population and especially immigrants are more likely to work in white-collar occupations.
- Members of British born ethnic minorities themselves are less likely to work in white-collar occupations in localities with a large presence of British-born ethnic minorities.
- For low skilled workers, a large presence of British born ethnic minorities in the local labour markets has a negative effect on their odds of higher status occupations.

## Relationship between the local labour market conditions and the immigration labour market impact

Our findings show that local labour market characteristics are an important mediator between spatial concentrations of immigrants and the labour market outcomes of native workers. Controlling for the structure of local labour market characteristics changes the relationship between the size of immigrant populations and the labour market outcomes of non-migrant population. Hence the impact of immigration on the labour market impact cannot be properly understood without first considering how spatial differences in the labour market outcomes of individuals are related to spatial differences in the local labour market opportunity structure.



## 5. Conclusions

In this study we sought an answer to the question whether or not spatial concentrations of immigrants have a negative impact on the labour market outcomes of non-migrant workers in the British labour market, in terms of their odds of entry into employment, and odds of entry in more prestigious occupations, and their wages. Multilevel multinomial and linear regression analyses were conducted to explore whether variations across local labour markets in the labour market outcomes of individuals were systematically related to the variations in the spatial concentration of immigrants, after accounting for variations in other characteristics of local labour markets that might be responsible for differences in labour market outcomes.

On the basis of the findings from this study it can be concluded that, overall, immigrants do not have a negative effect on the labour market outcomes (in term of wages and occupational attainment) of British workers. Moreover, in local labour markets where exist larger higher spatial concentrations of immigrants the wages of non-migrants workers are higher than in local labour markets with smaller population of immigrants. The positive association between the spatial concentration of immigrants and wages of non-migrant workers is net of other characteristics of local labour markets which might be responsible for

the spatial wage differentials and indicates that immigrants on a whole have a positive economic effect on British workers.

The evidence that the spatial concentration of immigrants is positively related with higher level of economic inactivity of non-migrant population, after accounting for other characteristics of local labour markets, may indicate that there is a possibility of competition between immigrants and native born workers for low skilled occupations with a subsequent substitution of native workers by immigrants. However alternative explanations are also possible. Thus, it might be that the British-born have more alternatives to low paid employment and rely more on state benefits or personal savings than do the immigrants. It may also be the case that the migrants are taking jobs which are not wanted by the native-born population. In any case, only detailed case studies can confirm or reject the hypotheses about the competition between the immigrants and native workers.

Findings about the labour market impact of impact of new (ie post 2004) immigrants deserve separate discussion. Indeed, the findings show that the impact of new immigrants on the labour market outcome of British workers is not different in a statistically significant way from the labour market impact of the established immigrants if new immigrants reside in local labour markets where already large population of immigrants who arrived in Britain before 2004 exists. However, in the local labour markets where before 2004 the population of immigrants used to be very small, ie in the local labour markets where new immigrants make a large proportion in the whole population of immigrants, the post-2004 immigrants have a negative effect on the labour market outcomes of non-migrant population. Indeed, in such labour markets a negative association exist between new immigrants spatial concentrations and wages of non-migrant workers, and the latter also have a lower probability of working in white collar occupations.

In accord with our first hypothesis, immigrants have a different effect of different groups of population. However, unlike our expectations, this research findings show that immigrants affect least favourably not the least educated British born workers and/or ethnic minorities, but the most educated groups of non-migrant workers. Indeed, the findings show the group that is most negatively affected in terms of wages by “new immigrants” are those with highest level of educational qualification. Similarly, although spatial concentrations established immigrants are related to the wages of non-migrant workers positively, the size of the positive effect is the smallest one for workers with the highest level of educational qualifications. Similarly, rather than competing with low educated workers for low-skilled occupation, new immigrants seem to affect the chances of workers to be working in white collar occupations.

Nevertheless, these findings alone cannot provide us with clear evidence of competition between new immigrants and native workers for white collar jobs; case studies of particular occupations are needed to confirm or reject the hypotheses about the competition.

Of course, a part of this association as well as other associations between the spatial concentrations of immigrants and the labour market outcomes of workers is resulted from spatial differences in conditions of local labour markers, and disappears after these characteristics are being accounted for (see regression models presented in the appendix).

This confirms our second hypotheses about the importance of the local labour market conditions when the labour market impact of immigrants is considered. Indeed, findings from this research show that local labour market characteristics are an important mediator between spatial concentrations of immigrants and the labour market outcomes of native workers. Controlling for the structure of local labour market characteristics changes the relationship between the size of immigrant populations and the labour market outcomes of non-migrant population. Hence the impact of immigration on the labour market impact cannot be properly understood without first considering how spatial differences in the labour market outcomes of individuals are related to spatial differences in the local labour market opportunity structure. This research findings show, however, that reported association between spatial concentrations of immigrants and the labour market outcomes of non-migrants workers exist net of local labour market conditions.

The finding of this research support the research Hypothesis 3 only partially. Indeed, as we shown previously, ethnic composition of local labour markets in terms of the relative sizes of populations of new and established immigrants, has an important effect of the labour market outcomes of non-migrant workers. It might indicate that in local labour markets with relatively large immigrant populations before 2004, immigrants and non-immigrant workers had established a balance, with each group occupying particular occupational niches in these localities. The arrival of new immigrants after 2004 did not disturb this established balance as they entered existing labour market niches for immigrant workers. However, the situation may be quite different in those local labour markets where no significant immigrant population existed before 2004 – in these labour markets new arrivals may compete for jobs with non-immigrants and affect negatively labour market outcomes of the latter.

However, contrary to our expectations, expressed in the research Hypothesis 3, the size of the ethnic minority population in the local labour market do not mediate between the spatial concentration of immigrants and the labour market outcomes of workers. Still, the size of ethnic minority population is important for the labour market outcomes of the ethnic minorities themselves, as well as other groups of workers, including immigrants. Indeed, a high percentage of British ethnic minorities affects positively the net odds of higher status occupations for the White British population and even more so for immigrants. However, for ethnic minorities themselves, as well as for low skilled workers, a large presence of British born ethnic minorities in the local labour markets has a negative effect on their odds of higher status occupations.

How sure one can be in claiming these effects of immigration? Our descriptive findings shown that some differences exist between spatial choices of pre-2004 and new immigrants, and therefore, local labour markets where these two groups of immigrants live, undoubtedly display some differences in their characteristics. However, in this research we extensively controlled for the opportunity structure and characteristics of populations of the local labour markets. The reported results are those which were found to be statistically significant after the differences in characteristics of local labour markets where “pre-2004” and “new” immigrants live were controlled for. Therefore, we believe that the reported effects of immigration are net of the other characteristics of local labour markets responsible for

differences in the labour market outcomes of their populations. Additionally, in this research we tested the impact of spatial concentrations of immigrants both on wages and occupational opportunities and the obtained evidence is consistent and shows the same patterns of economic and occupational impact of immigrants. Therefore we believe that despite the limitations and questions which remain open, this study considers the issue of the immigration impact on the labour market outcomes of British workers in a more comprehensive and systematic way than previous studies and offers an additional insight on the important issue of the labour market consequences and impacts of immigration.

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## Appendix 1

*Table A1: Linear multilevel regression of hourly wages of employees 16-65 in the UK labour market*

	Model1	Model2	Model3	Model4	Model5
<b>Intercept</b>	2.21(.01)**	2.21(.00)**	2.18(.01)**	2.20(.01)**	2.20(.01)**
<b>Level 2 effects</b>					
% Immigrants arrived before 2004			.010(.00)**	.010(.00)**	.006(.000)**
% Immigrants arrived 2004-after			-.020(.00)**	.020(.00)**	-.017(.000)**
%the British born ethnic min				-.001(.001)	.001(.001)
%employed					.002(.002)
%manufacturing jobs					.005(.002)*
%constriction jobs					.010(.000)**
%banking finance					.002(.002)*
%class1					.006(.001)**
<b>Gender: Male ref. cat.</b>					
Female	-.21(.00)**	-.21(.00)**	- 0.21(.00)**	- 0.21(.00)**	-.021(.00)**
<b>Age</b>	.004(.00)**	.005(.00)**	.005(.00)**	.005(.00)**	.005(.00)**
<b>Age squared</b>	-.001(.00)**	-.001(.00)**	-.001(.00)**	-.001(.00)**	-.001(.00)**
<b>Tenure in the UK for immigrants</b>	.004(.00)**	.003(.00)**	.003(.00)**	.003(.00)**	.003(.00)**
<b>Tenure in the UK for immigrants squared</b>	.000(.00)	-.000(.00)	-.000(.00)	-.000(.00)	-.000(.00)
<b>Marital status: Single ref. cat.</b>					
Married	.07(.00)**	.07(.00)**	.08(.00)**	.07(.00)**	.07(.00)**
Widowed, divorced, separated.	.01(.01)	.01(.01)	.01(.01)	.01(.01)	.01(.01)
<b>Immigrants</b>	.014(.01)**	.016(.01)**	.031(.02)	.030(.02)	.031(.02)
<b>Level 2 effects</b>					
% Immigrants arrived before 2004			-.005(.001)**	-.004(.001)**	-.004(.002)*
% Immigrants arrived 2004-after			.007(.001)**		
<b>British born ethnic minorities</b>	-.013(.01)	-.011(.01)	-.017(.008)*	-.012(.01)	-.013(.01)
<b>Level 2 effects</b>					
<b>Religion: Christian or non religious ref. cat.</b>					
<b>Muslim</b>	-.13(.02)**	-.12(.02)**	-.12(.02)**	-.12(.01)**	-.11(.02)**
<b>Level 2 effects</b>					
<b>Other religion</b>	.03(.01)**	-.02(.013)	-.01(.01)	-.02(.003)**	-.001(.002)
<b>Level 2 effects</b>					
%the British born ethnic min					-.006(.002)*
%employed					.019(.01)*
<b>Educational level: NVQ Level 3 ref. cat.</b>					
<b>Below NVQ level 2</b>	-.26(.00)**	-.26(.00)**	-.26(.00)**	-.26(.00)**	-.26(.00)**
<b>Level 2</b>			-.001(.00)*	-.002(.001)*	
% Immigrants arrived before 2004	-.11(.00)**	-.11(.00)**	-.11(.00)	-.11(.00)**	-.10(.00)**
<b>NVQ level2</b>	.28(.00)**	.28(.00)**	.28(.00)**	.28(.00)**	.28(.00)**
<b>NVQ Level 4</b>					
<b>Level 2 effects</b>					
%class1	.49(.01)**	.49(.01)**	.49(.01)**	.49(.07)**	.004(.001)**
<b>NVQ Level 5</b>					.49(.07)**
<b>Level 2 effects</b>			-.003(.00)**	-.004(.00)**	-.002(.00)**
% Immigrants arrived before 2004					-.008(.004)**
% Immigrants arrived 2004-after					-.010(.00)*
%class1	-.20(.01)**	-.20(.01)**	-.21(.01)**	-.20(.01)**	-.20(.01)**
<b>Other qualification</b>					
<b>Level 2 effects</b>			-.003(.01)**	.003(.001)**	
% Immigrants arrived before 2004			.022(.01)*	.020(.006)**	.019(.01)**
% Immigrants arrived 2004-after					.006(.002)*
%class1					
<b>Scotland</b>	-.05(.01)**	-.05(.01)**	-.03(.01)**	-.02(.01)**	-.02(.01)*
<b>Total variance</b>	0.39				
<b>Total level 1 variance</b>	0.30				
<b>Level 1 variance R</b>	0.20	0.20	0.20	0.20	.20
<b>Level 2 variance</b>					
<b>Intercept</b>	0.012**	0.013**	.008**	.007**	.007**
<b>Immigrants</b>		0.009**	.007**	.007**	.007**
<b>British Minority</b>		0.003**	.003**	.003**	.003**
<b>Religion other than Muslim</b>		0.014**	.014**	.014**	.014**
<b>Muslim</b>		0.012**	.013**	.013**	.013**
<b>Education below level</b>		0.000	.001	.004**	.004**
<b>Education level 4</b>		0.001	.004**	.000	.000
<b>Education level 5</b>		0.004**	.003**	.002*	.002*
<b>Other Educational qualifications</b>		0.001**	.001**	.001**	.001**

**Tables A2: Estimated level 2 effects for random slopes and random intercept model**

Probability of being economically inactive(including long term unemployed) vs. probability of being in unskilled jobs (or short term unemployed) (only statistically significant effects are shown)

<i>Level 2 variables. contextual effects of immigration</i>					
	Intercept	migrants	British Minorities	Below level 2	Muslims
Intercept	.80(.02)**	.20(.10)*	.07(.07)	-.83(.04)**	1.26(.10)**
Percentage of migrants up to 2004	.01(.00)**	-.02(.00)**			
Percentage of migrants after 2004					
Percentage of British minorities			-.025(.01)**		
<i>Level 2 variables. contextual effects of immigration and industries</i>					
Intercept	0.79(.02)**	1.16(.02)**		-.09(.04)*	1.29(.11)**
Percentage of migrants up to 2004	0.01(.00)**				
Percentage of migrants after 2004					
Percentage of British minorities			-.026(.00)**	-.011(.05)*	
Percentage of employed				.06(.01)**	
Percentage in manufacturing	-.013(.00)**				
Percentage in construction	-.012(.01)**				
Percentage with permanent jobs	-.017(.01)**				
Percentage in other services					
Unskilled jobs	-.04(.01)**	-.05(.02)**		-.03(.01)**	.09(.04)*
Percentage in class 1				-.02(.01)*	

**Tables A3: Estimated level 3 effects for random slopes and random intercept model**

Probability of being in unskilled occupations (including short term unemployment) vs. probability of being in classes V and VI (only statistically significant effects are shown)

<i>Level 2 variables. contextual effects of immigration</i>					
	Intercept	migrants	British Minorities	Below level 2	Muslims
Intercept	.71(.10)*			-.68(.03)**	
Percentage of migrants up to 2004		-.01(.00)*			
Percentage of migrants after 2004					
Percentage of British minorities					
<i>Level 2 variables. contextual effects of immigration and industries</i>					
Intercept	.72(.01)**			-.65(.03)**	
Percentage of migrants up to 2004					
Percentage of migrants after 2004					
Percentage of British minorities		.02(.01)*			
Percentage of employed	.04(.00)**				
Percentage in manufacturing		-.02(.01)*			
Percentage in construction		.04(.02)*			
Percentage with permanent jobs					
Percentage in other services				.02(.01)*	
Unskilled jobs	-.02(.00)**	-.05(.02)*		-.02(.00)**	.08(.03)*
Percentage in class 1	-.01(.00)*				

**Table A4: Probability of being economically inactive (or long term unemployed) vs. probability of being in unskilled jobs (or short term unemployed). Estimation of variance components**

	Random intercepts and random slopes	contextual effects of immigration	contextual effects of immigration and industries
	Var. Chi P Xomp. Square Value	Var. Chi P Xomp. Square Value	Var. Chi P Xomp. Square Value
Intercept	0.052 451.0 0.000	0.050 418.4 0.000	0.036 318.5 0.000
migrants	0.133 234.4 0.005	0.143 218.9 0.022	0.106 201.4 0.062
British Minority	0.099 246.4 0.001	0.105 241.6 0.001	0.121 239.2 0.001
Education level 2	0.011 154.9 >.500		
Education below level 2	0.057 270.7 0.000	0.040 263.0 0.000	0.025 229.1 0.003
Muslim	0.353 245.9 0.001	0.377 251.2 0.000	0.355 242.9 0.000

*Table A5: Probability of being in semi-skilled or lower supervisory occupations (class V and VI) vs. probability of being in unskilled jobs (or short term unemployed). Estimation of variance components*

	Random intercepts and random slopes	contextual effects of immigration	contextual effects of immigration and industries
	Var. Chi P Xomp. Square Value	Var. Chi P Xomp. Square Value	Var. Chi P Xomp. Square Value
Intercept	0.011 227.9 0.000	.011 266.6 .000	.006 200 .09
migrants	0.129 227.7 0.000	.096 249.3 .001	.059 218 .016
British Minority	0.038 150.2 > .500		
Education level 2	0.015 161.1 0.289		
Education below level 2	0.027 204.4 0.003	.019 221.2 .022	.008 182 .33
Religion other than Muslim	0.059 161.5 0.282		
Muslim	0.156 179.3 0.064	.132 220 .4 .022	.137 217 .02

*Tables A.6: Estimated fixed (with robust standard errors) effects for random slopes and random intercept models (variables whose effects is supposed to be random effects put in italics): individual level variables*

	<i>Probability of being economically inactive(including long term unemployed) vs. probability of being in unskilled jobs (or short term unemployed)</i>	<i>Probability of being in semi-skilled or lower supervisory occupations (class V and VI) vs. probability of being in unskilled jobs (or short term unemployed)</i>	<i>Probability of being in class I to III vs. probability of being in unskilled jobs (or short term unemployed)</i>
<i>Intercept</i>	.77(.017)**	.70(.01)**	1.97(.02)**
<b>Gender:</b> Male ref. cat.			
Female	1.16(.02)**	.51(.02)**	.78(.02)**
<b>Age</b>	.04(.003)**	.00(.00)	.00(.00)
<b>Tenure in Britain for migrants</b>	-.006(.003)*	.004(.003)	-.01(.03)**
<b>Marital status :</b> Single ref. cat.			
Married	-.32(.03)**	.38(.02)**	
Widowed, divorced, separated.	-.42(.03)**	.20(.02)**	-.31(.02)**
<i>migrants</i>	.15(.08)*	-.07(.08)	-.26(.08)**
<i>British born ethnic minorities</i>	.01(.01)	-.02(.04)	-.04(.05)
<b>Religion:</b> Christian or non reli. ref. cat.			
Muslim	1.19(.09)**	-.16(.07)*	-.19(.04)**
<i>Other religion</i>	.46(.07)**	-.06(.05)	.09(.06)
<b>Educational level:</b> NVQ Level 3 ref. cat.			
<i>Below level 2</i>	-.83(.04)**	-.68(.03)**	-1.52(.03)**
<i>Level 2</i>	-.98(.04)**	-.20(.03)**	-.50(.03)**
<i>Level 4</i>	.07(.12)	.19(.04)**	1.75(.04)**
<i>Level 5</i>	.06(.12)	-.18(.12)	2.69(.09)**
<i>Level 5</i>	-1.45(.23)**	-.65(.03)**	-1.41(.05)**
<i>Level 5</i>	0.20(.01)**	-.20(.02)**	
<b>Other qualification</b>	3.96(.06)**	-.45(.05)**	
<b>Number of children in family unit</b>	1.87(.03)**	-.10(.03)**	
<b>Full time student</b>	.31(.05)**		
<b>Disabled</b>	-.002(.04)		
<b>Getting pension</b>			
<b>Single parent</b>			