

# Ethnic minority immigrants and their children in Britain

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This paper investigates educational attainment and economic performance of ethnic minority immigrants and their children in Britain, in comparison to white British born. We find that ethnic minority immigrants and their children are on average better educated in comparison to their British born white peers. Educational attainment of British born minorities is far higher than that of their parent generation, and supersedes that of their white native born peers. Despite this, British born ethnic minorities exhibit on average lower employment probabilities. Their mean wages appear to be slightly higher than those of their white native born peers, but this is due to their higher educational attainment and their concentration in Greater London. Mean wages would be considerably lower for the same characteristics and the same regional allocation. Differences in wage offers do not explain employment differences of British born ethnic minorities. We discuss possible alternative explanations.

JEL classifications: I21, J15, J21.

## 1. Introduction

In many industrialized countries, second generation immigrants are a growing fraction of the population. Examination of intergenerational mobility in immigrant communities and the economic assimilation of the children of immigrants is therefore of great public interest. The performance of second generation immigrants when compared to their peers of host country descent differs widely across countries. Studies from the US and Canada draw an optimistic picture about the success of second generation immigrants relative to children of native-born parents.<sup>1</sup>

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<sup>1</sup>For instance Card *et al.* (2000) find that children of immigrants tend to have higher education and wages than children of natives. Borjas (2006) finds that on average the second generation of immigrants earns 5–10% more than their ancestors. Other studies on intergenerational mobility in immigrant communities include, Chiswick (1977), Carliner (1980), Borjas (1992, 1993, 1994), Trejo (2003), and Smith (2003, 2006) for the US, Chiswick and Miller (1988), Sweetman and Dicks (1999), Aydemir *et al.* (2009) for Canada, Cohen and Haberfeld (1998), Chiswick *et al.* (2005) for Australia, and Deutsch *et al.* (2006) for Israel.

In contrast, studies for European countries arrive at less positive conclusions.<sup>2</sup>

In Britain, ethnic minority individuals are a focus in the public debate about disadvantages of immigrant communities (see for instance the Commission for Racial Equality Annual Report, 2006). According to the 2001 Census, 4.7 million (or 8.1% of the total population) were non-white ethnic minorities. This represents an increase of 53% from just over three million (or 5.5%) in the 1991 Census. Also, ethnic minorities make up significant proportions of the British labour force. For instance, in 2005, non-mixed ethnic minorities born in Britain constituted 2.4% of the British working age population, while the respective percentage of ethnic minorities born abroad is 4.3% (author's own calculations from the British Labour Force Survey (henceforth LFS), 2005).

In this paper we examine two aspects of immigrant outcomes of ethnic minority descent across generations: human capital measured by years of schooling and educational qualifications; and labour market success as captured by employment and wages. We distinguish between the six largest non-white minority populations, belonging to the following ethnicities: Indian, Pakistani, Black Caribbean, Black African, Bangladeshi, and Chinese.<sup>3</sup> The analysis is based on the British LFS from 1979 to 2005. As this is a repeated cross-section (or, in later years, a rotating panel), and does not report the birth place of the parent, we investigate mobility across generations by comparing two birth cohorts. Our first cohort comprises individuals who are born between 1933 and 1954 outside Britain, and whom we observe in the survey between 1979 and 1984. Our second cohort includes individuals who are born in Britain between 1979 and 1984, who belong to any of the above ethnic minority groups, and whom we observe between 1998 and 2005. We refer to these groups as first generation ethnic minority immigrants and British born ethnic minorities respectively. We argue that most of the British born individuals are likely to be the descendents of the first cohorts, as ethnic minority immigration to Britain started not earlier than the 1950s. As white native born comparison groups, we construct samples of British born whites who belong to the same birth cohorts.

This paper makes several contributions to the literature. First, it examines the educational and employment performance of Britain's ethnic minority groups in an intergenerational context, starting from the 1970s, and based on all available data from the LFS. While other work concentrates on intergenerational class mobility of

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<sup>2</sup>See for instance work by Gang and Zimmermann (2000), Riphahn (2003, 2005) for Germany, Nielsen *et al.* (2003) for Denmark, van Ours and Veenman (2003, 2004) for the Netherlands, and Rooth and Ekberg (2003), Hammarstedt and Palme (2006) for Sweden.

<sup>3</sup>We exclude all those individuals with a mixed ethnic background, who account for 14.6% of the minority ethnic population in Britain (2001 UK Census). Some of these individuals may be the children of interracial marriages. For the extent of social integration and intermarriage of the Black Caribbean population in Britain see Peach (2005).

only some of Britain's ethnic groups based on the ONS Longitudinal Study (LS) (see Platt, 2005, 2007) and the General Household Survey (GHS) (see Heath and McManon, 2005), our investigation is for all main ethnic minority groups, and we concentrate on educational and employment outcomes.<sup>4</sup> Second, and focussing on comparison between British born ethnic minorities and their white British born peers, we analyse differences in wage distributions, and show how much is explained by regional allocation, and individual characteristics. Third, based on the framework developed by Juhn (1992) and Juhn and Murphy (1997), we decompose the difference in employment probabilities between British born whites and ethnic minorities in a part that is explained by differences in wage offers, and in a part that is explained by differences in participation behaviour for the same wages. Finally, we provide some tentative hypotheses as to why participation behaviour of some British minority groups differs from that of their white born peers.

We find that both first generation ethnic minority immigrants and British born ethnic minorities have on average higher levels of education, as opposed to comparable groups of white natives. Also, the improvement in educational achievement over the two cohorts we consider is larger for most British born ethnic minority groups as for white natives, and remarkable for some groups. However, for both foreign and British born ethnic minorities, employment probabilities are considerably lower than those of the white British born comparison samples.

Examining differences in wages and employment for British born ethnic minorities and whites along their wage distributions, we find that overall wages of British born ethnic minorities are higher than those of their white peers. This advantage is driven by females. Further, British born ethnic minority males are more heavily concentrated at the lower and the higher percentiles of the wage distribution, compared with their British born white peers. The overall wage advantage turns into a wage disadvantage, if British born ethnic minorities were to face the white native regional distribution and were attributed native characteristics, in particular the (lower) levels of education of whites.

When we decompose these differences along the distribution of wages in a part that is due to differences in (imputed) wage offer distributions and a part that is due to differences in participation functions, we find that differences in wage offer distributions hardly account for these employment differences. British born ethnic minorities have lower employment propensities for the same wages than native born whites. Investigating possible explanations for the wage and employment disadvantages, our analysis suggest that differences in the quality of education do

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<sup>4</sup>Other work investigates ethnic minorities living in the UK, without however analysing intergenerational aspects of assimilation. See e.g. Heath *et al.* (2000), Blackaby *et al.* (2002), Shields and Wheatley Price (2003), Wadsworth (2003), Blackaby *et al.* (2005), Heath and Yu (2005), Robinson and Valeny (2005), and Heath and Cheung (2006).

not drive the employment and wage gaps. Further, the lower labour market participation rate for some British born ethnic minority groups may be partly explained by their lower preference to participate in the labour market.

The structure of the paper is as follows. We begin in Section 2 by providing some background on the timing of entry of each ethnic minority immigrant group to Britain, present the data, and explain the construction of our sample. Section 3 examines differences in educational attainment using two different measures, years of full-time education, and educational qualifications, differences in employment rates and how these correlate across generations. In Section 4 we focus on British born ethnic minorities, and compare their wage structure and employment probabilities to those of their white native born peers. We also offer possible explanations for differences in wages and employment. We summarize findings and conclude in Section 5.

## 2. Background, data sources, and sample

### 2.1 Ethnic minority immigrants in Britain

Britain has always been a destination for intra-European immigrants, most notably for the Irish (Chance, 1996). Starting in the post-war period by the arrival of the Windrush in 1948, Britain saw large numbers of immigrants arriving, who were ethnically different from the predominantly white resident population. The six largest ethnic minority groups in Britain today and in descending population size order are: Indian, Pakistani, Black Caribbean, Black African, Bangladeshi, and Chinese. These groups differ in the timing of their arrival. While the majority of immigrants from the Caribbean arrived in the period between 1955 and 1964, the main time of arrival of Black African, Indian and Pakistani first generation groups was between 1965 and 1974 (Peach, 1996). Bangladeshi arrivals peaked in the period 1980–84.

### 2.2 Data sources and sample

Our analysis is based on the British LFS, which is a large scale household interview based survey of individuals in Britain which has been carried out since 1973 by the Office for National Statistics (ONS). The LFS is the only comprehensive source of information about all aspects of the labour market. Households are interviewed face to face in their first inclusion in the survey and by telephone, if possible, at intervals thereafter. Between 1973 and 1983 the LFS was carried out biennially, changing to an annual survey from 1984 onwards. The sample size is about 60,000 households in each survey, or around 0.5% of the population. From 1992 onwards, the survey changed to a rotating quarterly panel, with the same individuals being interviewed for five consecutive waves. The quarterly LFS contains information on gross weekly wages and number of hours worked for the fifth wave (1992–96) or the first and the fifth wave (1997 onwards). There is no information on wages before 1992.

2.2.1 *Foreign born and ethnic/native born minority populations in Britain* In our analysis, we use data between 1979 and 2005, as prior to 1979 no information on the ethnicity of the respondent was collected. Table 1 presents the average share of the evolution of working age immigrants per ethnic minority group and of each British born ethnic minority group for three different time periods: 1980–85, 1990–95, and 2000–2005. There has been a 2.0 percentage point increase in the share of immigrants of working age population, from 7.1% in 1980–85 to 9.1% in 2000–2005. The share of the ethnic minority foreign born group has increased from 3.0% in 1980–85 to 4.0% in 2000–2005 and that of the ethnic minority British born individuals has gone up by 1.6 percentage points, from 0.6% in 1980–85 to 2.2% in 2000–2005. Overall, the numbers in Table 1 suggest a considerable increase in the share of ethnic minorities, both foreign born and British born over the last three decades.

2.2.2 *The sample used for analysis* Although the LFS classifies people according to their country of birth as well as their ethnicity, it does not collect information on the parental country of birth. In our analysis below, we analyse and compare two samples: first generation ethnic minority immigrants, observed in the LFS in 1979–84, and British born ethnic minorities, observed in the LFS in 1998–2005. We construct these samples in a way that the second group is in a similar age range

**Table 1** Share of working age immigrant ethnic group and of British born ethnic minority group with respect to the British population

|  | 1980–85<br>% | 1990–95<br>% | 2000–2005<br>% |
|--|--------------|--------------|----------------|
| <i>Immigrant/ethnic group</i>          |              |              |                |
| Foreign born (all)                     | 7.057        | 7.550        | 9.102          |
| White foreign born                     | 4.023        | 4.214        | 5.054          |
| Ethnic minority foreign born (total)   | 3.034        | 3.337        | 4.048          |
| Black Caribbean                        | 0.717        | 0.507        | 0.397          |
| Black African                          | 0.163        | 0.367        | 0.858          |
| Indian                                 | 1.313        | 1.304        | 1.297          |
| Pakistani                              | 0.529        | 0.667        | 0.781          |
| Bangladeshi                            | 0.104        | 0.232        | 0.374          |
| Chinese                                | 0.209        | 0.259        | 0.341          |
| British born ethnic minorities (total) | 0.596        | 1.207        | 2.237          |
| Black Caribbean                        | 0.395        | 0.470        | 0.646          |
| Black African                          | 0.024        | 0.091        | 0.176          |
| Indian                                 | 0.120        | 0.385        | 0.731          |
| Pakistani                              | 0.045        | 0.196        | 0.497          |
| Bangladeshi                            | 0.004        | 0.002        | 0.104          |
| Chinese                                | 0.008        | 0.041        | 0.083          |

*Note:* Percentages are population weighted.

*Source:* LFS (1980–2005).

than the first group 20 years earlier. For each of these samples we construct a white British born comparison sample of individuals of the same birth cohorts.

We define our first generation cohort as all foreign born individuals of Black Caribbean, Black African, Indian, Pakistani, Bangladeshi, and Chinese origin who were born between 1933 and 1954, and whom we observe in the LFS between 1979 and 1984. Consequently, these individuals are between 25 and 46 years old in 1979. We pool information from the 1979, 1981, 1983, and 1984 LFSs to obtain a larger sample. We define our second sample of ethnic minority individuals born in Britain to be of one of the same ethnic minority groups, and in the age range 23 to 35 in year 1998 (born between 1963 and 1975). Again, to circumvent the small sample problem, we pool the 1998–2005 LFSs. As immigrants of non-white origin have arrived relatively recently in Britain (see Section 2.1), most of the individuals in the second group are likely to be second generation immigrants, and descendants of the first sample, observed in a similar age range about 20 years earlier; we illustrate this in more detail below. As white British born comparison groups, we construct two samples of white British born individuals who are of the same birth cohorts than the first generation ethnic minority immigrants (i.e. 1933–54), and the British born ethnic minorities (1963–75).

In Table 2 we present the total number of first generation ethnic minority immigrants and British born ethnic minorities observed in each of the two time windows (upper left panel and lower right panel of the table respectively), as well as the corresponding numbers for white natives of the same birth cohorts.<sup>5</sup> We also display the number of second or higher order generation ethnic minority immigrants in the first birth cohort (lower left panel). The numbers in that panel illustrate that, except for Black Caribbeans the number of British born ethnic minority individuals born into that cohort is very small, suggesting that only a small fraction of individuals in the lower right panel belong to the third or higher British born ethnic minority generation.<sup>6</sup> The numbers in square brackets in Table 2 report the average age per birth cohort group in 1979 (upper left panel) and in 1998 respectively (bottom right panel).

### 3. Educational achievements and employment: comparing foreign and British born ethnic minorities and white natives

The LFS offers two measures of educational attainment, one based on the age at which the individual left continuous full-time education, and the other based on educational qualifications. We use both measures. To obtain a measure of years of

<sup>5</sup>The LFS is a rotating panel in our second time window. In the table, we have included individuals only once.

<sup>6</sup>Only the 1983 LFS wave reports information on parental country of birth. Using this information, we computed that only 2.3% of the overall population of ethnic minority individuals in the UK in 1983 that belongs to the age group 25 to 51, was British born.

Table 2 Distribution of groups by status of generation

| Groups                             | Birth cohorts                   |                |                                  |
|------------------------------------|---------------------------------|----------------|----------------------------------|
|                                    | 1933–54, observed<br>in 1979–84 |                | 1963–75 observed<br>in 1998–2005 |
| <i>First generation</i>            |                                 |                |                                  |
| Black Caribbean                    | 1,877 (26.0%)                   | [37.3] [19.10] | —                                |
| Black African                      | 414 (5.7%)                      | [31.4] [22.85] | —                                |
| Indian                             | 3,082 (42.6%)                   | [34.3] [23.72] | —                                |
| Pakistani                          | 1,220 (16.9%)                   | [34.0] [25.33] | —                                |
| Bangladeshi                        | 188 (2.6%)                      | [38.9] [25.57] | —                                |
| Chinese                            | 447 (6.2%)                      | [32.5] [25.64] | —                                |
| Total (minority)                   | 7,228 (100%)                    | [34.8] [22.92] | —                                |
| White natives                      | 205,165                         | [34.9]         | —                                |
| <i>Second or higher generation</i> |                                 |                |                                  |
| Black Caribbean                    | 245 (66.6%)                     |                | 2,483 (34.7%) [29.9]             |
| Black African                      | 22 (6.0%)                       |                | 653 (9.1%) [29.2]                |
| Indian                             | 62 (16.8%)                      |                | 2,339 (32.7%) [27.4]             |
| Pakistani                          | 18 (4.9%)                       |                | 1,307 (18.3%) [26.9]             |
| Bangladeshi                        | 9 (2.4%)                        |                | 143 (2.0%) [27.8]                |
| Chinese                            | 12 (3.3%)                       |                | 226 (3.2%) [26.7]                |
| Total (minority)                   | 368 (100%)                      |                | 7,151 (100%) [28.4]              |
| White natives                      | —                               |                | 227,746 [29.1]                   |

Notes: Percentages in parentheses, mean age (population weighted) in square brackets and average age of arrival in curly brackets. Our first generation sample includes individuals who were born between 1933 and 1954, who we observe in the years 1979 and 1984. Our second or higher generation sample includes individuals who were born between 1963 and 1975, whom we observe between 1998 and 2005. Mean age is the average age per birth cohort in 1979 (top left panel) and in 1998 (bottom right panel) respectively. Mean age of arrival is the average arrival age for years 1983 and 1984 only, as the 1979 and 1981 LFS waves do not provide information on the year of arrival.

continuous full-time education from the age at which individuals left full time education, we adjust for the different ages at which individuals start full-time education in different countries and for changes in the starting age of full-time education over time.<sup>7</sup> We also make appropriate adjustments for individuals who started full-time education abroad or came to Britain before the starting age of full-time education (five years of age since the 1870 Education Act).<sup>8</sup> This is important as the school starting age differs quite substantially: for instance, while children in the UK start school at age five, they start at age six in

<sup>7</sup>This information was collected from the World Bank website: <http://ddp-ext.worldbank.org/ext/DDPQQ/member.do?method=getMembers&userid=1&queryId=189>

<sup>8</sup>There is no information in the LFS on the number of years spent in education in the home country and in Britain. Also, for the 1979 and the 1981 LFS waves we do not observe the year of entry into Britain. Thus, the appropriate adjustments cannot be made.

Bangladesh, and at age seven in many African countries, like Tanzania and Zimbabwe.

Our second measure is based on information about educational qualifications. This measure may be problematic when comparing native and foreign-born populations, as some foreign qualifications may be difficult to classify to equivalent British qualifications. In addition, the LFS does not have a single consistent classification that spans from 1979 to 2005, mainly due to changes in the British education system. In order to create a consistent measure we aggregate educational qualifications in four broad categories: 'High' (first degree (or equal) and above, i.e. Masters, PhD), 'Medium' (i.e. teaching and nursing qualifications, trade apprenticeship, A-levels), 'Low' (i.e. O-levels, any other professional/vocational qualification), and 'No qualification'.<sup>9</sup>

### 3.1 Years of full-time education

Table 3 presents means of years of full-time education. In the left panel, we report numbers for the first birth cohort of foreign born ethnic minority immigrants, obtained from the LFS between 1979 and 1984. In the right panel, we report the same information for the second birth cohort (1963–75) of British born ethnic minority individuals. For each of the two panels, the first column reports means for both males and females, while the second and third columns report means for males and females respectively. The last two rows in each panel present corresponding average means across all immigrant/minority groups and for the white British born comparison groups.

First generation ethnic minority immigrants have on average 0.7 more years of full-time education than white natives; this difference is mainly due to males, who have on average 1.0 years more full-time education than British born whites.<sup>10</sup> On average, years of full-time education of first generation female ethnic minority immigrants are quite similar compared to their British born peers; Black African, Pakistani, and Indian females being the only immigrant groups who have more years of full-time education compared to white native females. This heterogeneity is also evident among male immigrant groups. Black African and Chinese males have the highest number of years of full-time education, 2.2 and 1.8 more years of full-time education respectively than white native males. On the other hand, Black Caribbean men have fewer years of full-time education than their white native peers. Across genders, for all first generation ethnic minority immigrant groups

<sup>9</sup>See Burgess *et al.* (2003) for a similar classification of educational qualifications using the LFS, and Manacorda *et al.* (2006) for a discussion of choosing educational measures for immigrants in the LFS.

<sup>10</sup>Some countries may have grade repetition, so that more years of schooling may signal lower ability as some individuals may have to repeat grades. We acknowledge this possibility but cannot examine it with the available information in our data.



**Table 3** Average years of full-time education by status of generation, ethnicity, and gender

|                                | Birth cohort 1933–54,<br>observed in 1979–84<br>(minorities: all foreign born) |              |                | Birth cohort 1963–75<br>observed in 1998–2005<br>(minorities: all British born) |              |                |
|--------------------------------|--|--------------|----------------|---|--------------|----------------|
|                                | (1)<br>Total   | (2)<br>Males | (3)<br>Females | (4)<br>Total  | (5)<br>Males | (6)<br>Females |
| Black Caribbean                | 10.2   | 10.0         | 10.4           | 12.7  | 12.5         | 12.8           |
| Black African                  | 12.5   | 13.0         | 11.6           | 15.2  | 15.6         | 14.8           |
| Indian                         | 12.0   | 12.5         | 11.5           | 14.2  | 14.5         | 13.9           |
| Pakistani                      | 11.6   | 11.6         | 11.6           | 13.5  | 14.2         | 12.8           |
| Bangladeshi                    | 11.1   | 11.6         | 10.2           | 13.2  | 13.6         | 12.9           |
| Chinese                        | 11.7   | 12.6         | 10.5           | 15.1  | 15.1         | 15.1           |
| Total (immigrant/<br>minority) | 11.5   | 11.8         | 11.1           | 13.6  | 13.9         | 13.4           |
| White native                   | 10.8   | 10.8         | 10.7           | 12.6  | 12.6         | 12.6           |

*Notes:* Means are weighted using population weights. Those individuals without any formal education were given zero years of education. Our first generation sample includes individuals who were born between 1933 and 1954, who we observe in the years 1979 and 1984. Our (potential) second generation sample includes individuals who were born between 1963 and 1975, whom we observe between 1998 and 2005. The average age of years in full-time education is calculated in birth cohorts.

except for Black Caribbean and Pakistani, men have more years of full-time education than women. Years of full-time education between white native men and women are almost the same. Overall, ethnic minority immigrants in Britain in the early 1980s were well educated. This is in contrast to the educational qualifications of immigrants in many other European countries (see references in footnote 2).

The overall advantage in years of full-time education of first generation ethnic minority immigrants relative to their British born white peers carries through to their British born children. Among white native born individuals, there is an increase in the number of years of full-time education of almost two years from one generation to the next (see Hansen and Vingoles, 2005, for the increasing participation in education in the UK). An even higher increase is observable for British born ethnic minorities. All British born ethnic minority groups have more years of full-time education than their British born white peers. Interestingly, females in all ethnic groups, including females from the Caribbean, Bangladeshi, and Chinese communities (and in contrast to the parent generation), have more years of full-time education than white native females. The overall difference in years of full-time education between British born ethnic minorities and their British born white peers is 1.3 years for males and 0.8 years for females (compared to one year and 0.4 years for the first generation). This suggests a significant increase in educational achievements, particularly for British born ethnic minority females.

### 3.2 Educational qualifications

Table 4 presents the distribution of educational qualifications for the different groups. Columns 1–4 report means for the foreign born ethnic minority immigrants and the comparable group of white natives, and columns 5–8 for British born ethnic minorities. The results largely confirm the educational advantage of first generation ethnic minority immigrants and of the British born ethnic minority individuals, as shown in Table 3.

The numbers in columns one to four suggest that higher proportions of first generation ethnic minority immigrants are concentrated at the extremes of the educational distribution. While the percentage of first generation ethnic minority immigrants that fall into the ‘High’ educational category is 3.6 percentage points higher than that of white British born, the percentage that falls into the ‘No qualification’ category is likewise 8.7 percentage points higher. There is significant heterogeneity between groups, with only 2.3% of first generation Black Caribbean’s having a ‘High’ educational qualification as opposed to 17.8% of Indians. The highest percentages of first generation ethnic minority immigrants with ‘No qualification’ are in the groups of Pakistani (69.4%), Bangladeshi (68.2%), and Black Caribbean (62.4%).

In stark contrast, columns five to eight suggest a substantial improvement in educational qualifications of ethnic minority individuals who are born in Britain. The overall number of those in the highest educational category has increased from

**Table 4** Distribution of educational qualifications by status of generation and ethnicity

|                                | Birth cohort 1933–54,<br>observed in 1979–84<br>(minorities: all foreign born) |               |            |                         | Birth cohort 1963–75<br>observed in 1998–2005<br>(minorities: all British born) |               |            |                         |
|--------------------------------|--|---------------|------------|-------------------------|---|---------------|------------|-------------------------|
|                                | High<br>(1)  | Medium<br>(2) | Low<br>(3) | No qualification<br>(4) | High<br>(5)   | Medium<br>(6) | Low<br>(7) | No qualification<br>(8) |
| Black Caribbean                | 0.023  | 0.226         | 0.128      | 0.624                   | 0.150   | 0.317         | 0.436      | 0.097                   |
| Black African                  | 0.110  | 0.416         | 0.224      | 0.250                   | 0.429   | 0.313         | 0.209      | 0.049                   |
| Indian                         | 0.178  | 0.165         | 0.163      | 0.494                   | 0.371   | 0.231         | 0.314      | 0.084                   |
| Pakistani                      | 0.096  | 0.105         | 0.106      | 0.694                   | 0.273   | 0.242         | 0.307      | 0.178                   |
| Bangladeshi                    | 0.125  | 0.088         | 0.105      | 0.682                   | 0.354   | 0.131         | 0.311      | 0.204                   |
| Chinese                        | 0.108  | 0.225         | 0.138      | 0.529                   | 0.498   | 0.247         | 0.187      | 0.068                   |
| Total (immigrant/<br>minority) | 0.113  | 0.192         | 0.146      | 0.549                   | 0.284   | 0.271         | 0.343      | 0.103                   |
| Whites                         | 0.077  | 0.267         | 0.194      | 0.462                   | 0.198   | 0.313         | 0.378      | 0.111                   |

*Notes:* Means are weighted using population weights. Our first generation sample includes individuals who were born between 1933 and 1954, who we observe in the years 1979 and 1984. Our second (or higher) generation sample includes individuals who were born between 1963 and 1975, whom we observe between 1998 and 2005.

11.3 to 28.4%, which contrasts with an increase from 7.7 to 19.8% for British born whites. Equally striking is the decrease in the percentage of those with no qualification, from more than one in two individuals in the first generation to approximately one in ten individuals for those ethnic minorities born in Britain. Again, this decrease is larger than for native born whites. These numbers suggest a more dramatic overall improvement of ethnic minority immigrants from the first to the next generations than of native born whites and confirm the overall better educational background of ethnic minority British born individuals as compared to comparable British born whites. The results also suggest substantial heterogeneity across these groups. While a significant percentage of British born Chinese (49.8%) falls into the highest educational group, this is the case for only 15.0% of British born Black Caribbean's.

### 3.3 Employment

We compare the cohorts of first generation ethnic minority immigrants and British born ethnic minorities, with respective British born whites as a reference. Our measure for the overall economic activity of individuals distinguishes between paid employment, self-employment, unemployment, economic inactivity, as well as people on government schemes. We concentrate here on individuals in paid employment, in unemployment, and on those who are economically inactive. We consider only individuals in dependent employment, and exclude the self-employed (these are 7.2% of white natives and 6.1% of ethnic minorities respectively in year 1998 and for the 1963–75 birth cohort) as well as those individuals on government schemes. The latter group is about 0.1%. We also drop all those individuals who were in full-time education at the time of the survey.

We define an individual to be employed if she is in paid employment, as opposed to being economically inactive or unemployed. In Table 5, we present differences in means of employment (given in percentages) for the different immigrant/ethnic groups, for all individuals and for males and females separately. The reference groups are the respective groups of white natives. The last row of each panel in Table 5 shows employment means for white natives. The reported coefficients are estimated conditional on age and age squared, year dummies (reference year 1979 for the first time period and 1998 for the second time period), and quarter dummies for the second time period (omitted category quarter 4) to eliminate composition effects.<sup>11</sup> The composition of the white native and ethnic minority population across geographical regions is very different: 10% of white natives in both time periods live in Greater London as opposed to 47% of the first ethnic minority immigrant generation and 46% of the British born ethnic minorities. Thus, in

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<sup>11</sup>In the second time window the LFS has a rotating panel format. We keep more than one observation per individual, but adjust the standard errors for repeated observations.

Table 5 Mean differences in employment

| Immigrant groups  | Birth cohort 1933–54,<br>observed in 1979–84<br>(minorities: all foreign born) |        |         | Birth cohort 1963–75<br>observed in 1998–2005<br>(minorities: all British born) |       |         |
|---|--|--------|---------|---|-------|---------|
|   | (1)  | (2)    | (3)     | (4)   | (5)   | (6)     |
|   | Total  | Males  | Females | Total   | Males | Females |
| Black Caribbean   | 5.3  | –6.7   | 17.2    | –7.9  | –10.3 | –4.8    |
| Black African   | 0.8†   | –11.6† | 8.7†    | –9.6  | –11.8 | –7.1†   |
| Indian  | –6.6   | –4.6†  | –6.2†   | –0.7†   | –0.5† | –1.1†   |
| Pakistani   | –23.4  | –3.8†  | –46.2   | –19.2   | –8.1  | –25.2   |
| Bangladeshi   | –31.4  | –6.9†  | –60.4   | –29.7   | –6.1† | –46.9   |
| Chinese   | –7.9†  | 3.4    | –23.6   | 1.3†  | 1.7†  | 1.1†    |
| <i>Total difference</i><br>(Immigrants/minority)                | –6.0   | –5.2   | –6.5    | –7.7  | –6.4  | –8.0    |
| White natives (employment)                                      | 76.1   | 94.3   | 58.7    | 78.8  | 87.9  | 70.7    |
| <i>Controlling for regions: omitted category Greater London</i> |  |        |         |   |       |         |
| Black Caribbean   | 3.2†   | –8.1   | 14.5    | –8.0  | –10.9 | –4.2    |
| Black African   | –1.1†  | –12.5† | 6.1†    | –9.9  | –12.4 | –6.8†   |
| Indian  | –8.3   | –5.9   | –8.4    | –0.7†   | –1.0† | –0.4†   |
| Pakistani   | –24.9  | –4.6†  | –48.1   | –19.0   | –7.7  | –25.3   |
| Bangladeshi   | –32.5  | –7.3†  | –64.8   | –29.8   | –6.1† | –47.0   |
| Chinese   | –9.3†  | 2.2†   | –25.9   | 1.1†  | 1.5†  | 1.1†    |
| <i>Total difference</i><br>(Immigrants/minority)                | –8.0   | –6.4   | –9.1    | –7.8  | –6.8  | –7.6    |
| White natives (employment)                                      | 79.0   | 96.0   | 62.6    | 79.2  | 88.9  | 70.2    |

Notes: Coefficients report differences in employment probabilities between the respective ethnic minority group and white natives. † indicates that employment probability of that group is not significantly different from white natives at the 10% level. Reported coefficients are conditional on age and age square, year dummies (omitted categories are years 1979 for the first time period and 1998 for the second time period) and quarter dummies for the second time period (omitted category quarter 4). The reference groups are white native born individuals living in Greater London. Regressions are weighted using population weights.

the lower panel we report results where we also condition on region dummies (the reference category being Greater London).

For the two white British born cohorts, the overall employment probability has slightly increased, mainly due to an increase in female employment, from 59% between 1979 and 1984 to 70.5 % between 1998 and 2005 (see Blundell *et al.*, 2007, who report similar numbers).

Despite the overall educational advantage of first generation ethnic minority immigrants as illustrated in Sections 3.1 and 3.2, they experience remarkably lower employment probabilities. The overall difference between first generation ethnic minority immigrants and white natives is 6.0 percentage points. The detailed breakdown reveals that this difference is mainly due to lower employment probabilities of Pakistanis and Bangladeshis, with employment rates being 23.4 and 31.4

percentage points lower than those of their white British born peers. Inspection of the gender breakdown reveals that these differences are driven by females, who have employment probabilities that are 46.2 and 60.4 percentage points lower than those of their white British born peers. Black Caribbean females on the other hand exhibit a 17.2 percentage point higher employment probability than their British born white peers, while males have a 6.7 percentage point lower probability. Overall, these numbers suggest a sizeable employment differential between first generation ethnic minority immigrants compared to their white native peers, but also a lot of heterogeneity across the different minority groups.

The right panel in Table 5 compares British born ethnic minorities and white natives of the same cohort. Overall, there is a large employment disadvantage for British born ethnic minorities relative to their British born white peers (7.7 percentage points). However, the difference between males and females is now much reduced. Breaking these numbers down by the different ethnic minority groups, the pattern is similar to that for the first generation, with the largest differences for Pakistanis and Bangladeshis. These are once more driven by females, where Pakistani and Bangladeshi females have 25.2 and 46.9 percentage points lower employment probabilities than their native born white peers. The overall disadvantage for both Black Africans and Black Caribbeans has increased. For instance, the employment probability for female British born Black Caribbeans is now 4.8 percentage points lower than of their British born white peers. The lower panel of Table 5 shows that the employment differentials between the white native and both immigrant populations are slightly higher once we control for regions. Thus, British born ethnic minority individuals, despite having more schooling, have lower employment probabilities than their British born white peers.

#### 4. Employment and wages of British born ethnic minorities

The analysis in the last section did not attempt to draw distinctions between possible channels, through which employment disadvantages of ethnic minorities are created. If employment depends on wage offers as well as a set of other observable characteristics, then the lower employment probabilities of British born ethnic minorities relative to their white native peers may be due to differences in the wage offer distribution, or to lower labour supply for the same labour market opportunities. In addition, it may depend on differences in other factors that directly affect employment probabilities.

In this section we first analyse the hourly wage distributions of those who are in work. We ask the question: 'How does the distribution of wages of ethnic minority individuals' change if they had the same vector of observable attributes and regional allocation as white natives?' This helps us to understand whether ethnic minorities are equally rewarded for human capital characteristics and other attributes as white native individuals, and whether there are differences along the wage distribution. We then turn to employment probabilities of ethnic minority and white native individuals, where we predict employment along the imputed wage offer

distributions. Here we ask the question: ‘How does the employment distribution of ethnic minorities look like if they faced the same (imputed) wage offer distribution as white natives?’

#### 4.1 Wages

Looking at the raw data, mean log hourly wages of British born ethnic minority and white males are 2.03 and 2.05 respectively—suggesting a 2% wage disadvantage for white males, which is however not significantly different from zero. For females the respective numbers are 1.97 and 1.83, suggesting a significant 14% wage advantage for ethnic minorities. These raw figures may be driven by the educational advantage of ethnic minorities as well as by different regional distributions. The female wage advantage may also be partly explained by differently selective employment across the populations in both observables and unobservables (Neal, 2004).

How do individual attributes as well as geographical distribution affect wages of British born ethnic minority individuals compared to British born whites along the wage distribution? We investigate this by analysing how the density of wages of ethnic minority individuals changes if they had the same vector of observable attributes and the same regional allocation as white natives. To do this, we use the approach outlined in DiNardo *et al.* (1996) who propose an estimator for counterfactual wage densities. In the online Appendix 1, we explain in detail how we implement this approach for our estimation.

In Fig. 1 we plot the differences between the actual white native wage distribution and the actual ethnic minority wage distribution. We also report the differences between the actual white native wage distribution (dashed line), and the ethnic minority wage distribution if ethnic minority individuals had the same regional distribution (solid line) and, in addition, the same age and education distributions (dashed–dotted line). We present graphs for both males (panel 1) and females (panel 2).

For males, the density of wages for British born ethnic minorities is higher at the lower and the higher part of the wage distribution, and lower in the middle of the distribution. Giving British born ethnic minorities the same regional distribution as that of white natives increases the density at the low part of the distribution, and decreases the density at the upper part of the distribution, leading to an overall larger wage disadvantage along all parts of the wage distribution. This is re-enforced when we assign to ethnic minority British born—in addition—the age and education structure of their white peers.

For females, the picture is different: considering the actual wage distributions, ethnic minority British born females have a lower density at the low end of the wage distribution, and a higher density at the upper end of the wage distribution, compared to their white peers. As we report above, the raw mean wage differential points at a 14% advantage for female minorities. However, when we assign to female minorities the same regional distribution and the same age and education structure as that of their white peers, the density at the lower part strongly increases

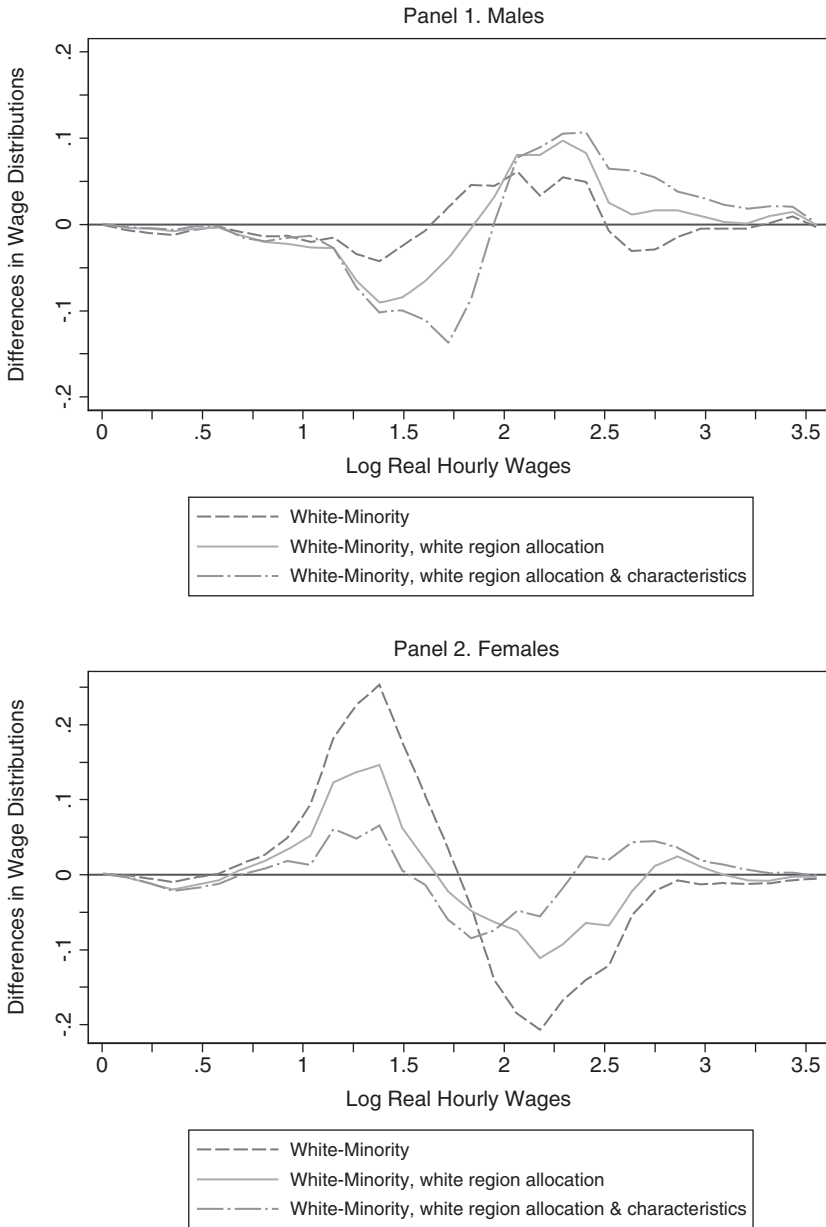


Fig. 1 Differences between actual and counterfactual kernel densities

relative to whites, and is now lower than that of whites at the upper part of the wage distribution.

If we evaluate the wage distributions at the mean (which essentially means to integrate over the curves in the figures), the small raw wage disadvantage of ethnic

minority males of 2% turns into a 6% disadvantage if the regional allocation of minorities resembled that of their white native peers, and to 9% disadvantage if ethnic minority males had in addition the same education and age structure as their white native male peers.<sup>12</sup> For ethnic minority females the initial 14% wage advantage decreases to 3% if their regional distribution was equal to that of white native females, and turns into a 4% disadvantage if, in addition, they had the same age and education structure as white native females.

These results suggest that British born ethnic minorities, and in particular females, have a mean wage advantage over their British born white peers. This seems not surprising given their higher levels of educational attainment, and their regional concentration in Greater London. However, if they were identical to white British born in terms of their individual attributes (like education) and regional allocation, then the positive raw wage differential turn into a considerable wage disadvantage for both males and females.

This overall disadvantage is even larger if, in addition, there is a stronger selection into employment on unobservables for ethnic minorities. If unobservable ability components are correlated with observable characteristics like education (as suggested by standard human capital theory), inspection of educational attainment differences across white natives and ethnic minorities of those who do, and do not, work should give some indication as to how important is selection on unobservables. We find that the difference in years of full-time education between employed and non-employed individuals for ethnic minorities and white natives are 1.6 and one years for males and 1.5 and one for females respectively. This translates into a 7.9% (7.8%) higher educational attainment for British born white males (females) who are in work, but to an 11.3% (10.8%) higher educational attainment for British born ethnic minorities who are in work. If education is similarly correlated with unobserved ability across groups, then this implies a stronger positive selection of ethnic minorities into the workforce.

## 4.2 Employment

We now investigate how much of the difference in employment rates between the two groups can be explained by differences in their imputed wage offer distributions. This helps answering the question whether employment differences are due to ethnic minorities facing different wage offers, or whether ethnic minority individuals react differently to the same labour market opportunities than their white native peers.

The overall employment rate of minority ( $j = m$ ) and non-minority ( $j = nm$ ) individuals can be expressed as a weighted sum of employment probabilities over

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<sup>12</sup>The variables we include in the regressions are age and its square, three dummy variables capturing educational qualifications ('High', 'Medium', 'Low', omitted category 'No qualification'), years of full-time education, year dummies (omitted category year 1998), and quarter dummies (omitted category quarter 4).



the wage offer distribution, or  $P^j = \int p^j(w)g^j(w)dw$ . Differences in employment rates may now be due to differences in employment responses at any wage  $w$ ,  $p^j(w)$ , or differences in the distribution of offered wages,  $g^j(w)$ . The difference in overall employment probabilities can then be decomposed as:

$$\begin{aligned} & \int p^m(w)g^m(w)dw - \int p^{nm}(w)g^{nm}(w)dw \\ &= \int p^m(w)(g^m(w) - g^{nm}(w))dw + \int (p^m(w) - p^{nm}(w))g^{nm}(w)dw \end{aligned} \quad (1)$$

Differences in the distribution of offered wages may be due to differences in observed or unobserved characteristics of the two populations, or due to differences in the prices for observed and unobserved characteristics. They may also be due to demand side considerations, for instance discrimination (see Bowlus and Eckstein, 2002, for analysis in an equilibrium search framework). Differences in the employment responses may be due to differences in reservation wages or preferences.

We do not observe the wage offer distributions  $g^j(w^j)$  for the two groups. It is well known that the censored distribution of accepted offers does not straightforwardly allow us to estimate the wage offer distribution of the total population—this recoverability problem has been documented by Flinn and Heckman (1982). Here we neglect this problem, and provide a more parsimonious analysis along the lines of Juhn (1992) and Juhn and Murphy (1997), by imputing wages for people in the censored part of the wage distribution from observed wage information of those who work, and who have identical characteristics. We do this by estimating different regressions for males and females, and pool together the ethnic minority groups Black Caribbeans/Black Africans, Indian/Chinese, and Bangladeshi/Pakistani due to the small number of observations. We normalize all wages to the year 1998 and add to the predictions an error term drawn from a normal distribution, where we allow the variance to differ across the groups described above. Therefore, the distribution of imputed potential wages takes into account differences in wage offers for white and ethnic minority individuals due to differences in observable characteristics, or their prices. It does not capture differences in unobservable characteristics; neither does it address selection into employment. We then compute the participation functions by dividing the data into intervals along the wage distribution and compute participation rates within these intervals. We follow Juhn (1992) and assign participation probabilities to 2.5 percentiles of the potential wage distribution, and aggregate these up to deciles.

In Fig. 2, we plot the resulting participation functions for ethnic minority and white native individuals by gender. The panels show that both male and female ethnic minorities have substantially lower employment probabilities for every level of potential wages, as compared to their respective white native born peers. The difference slightly decreases at higher wages, for both genders, but remains substantial. This suggests that the large difference in observed employment is driven by

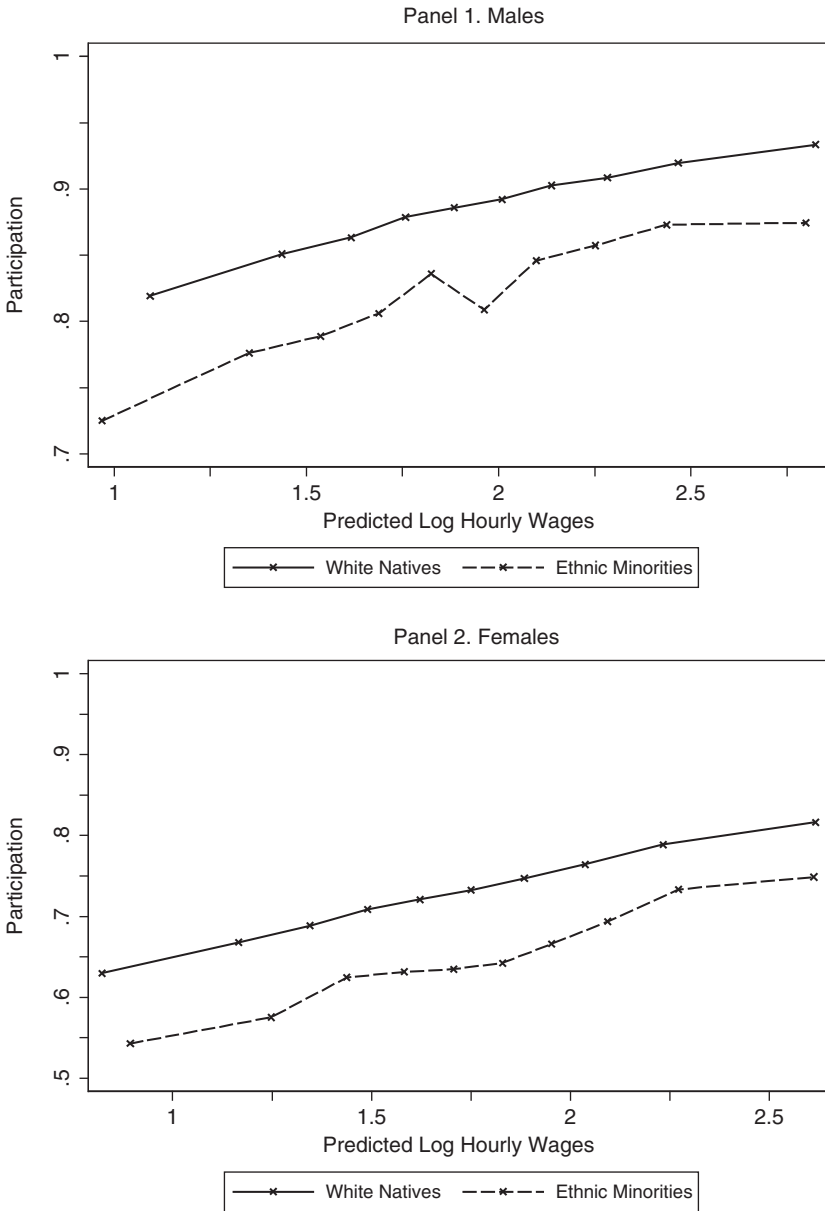


Fig. 2 Participation functions by ethnic and gender groups

**Table 6** Decile decompositions of employment probabilities, potential wages and participation functions

|         | Males                           |                           |  | Females                         |                           |  |
|---------|---------------------------------|---------------------------|--|---------------------------------|---------------------------|--|
|         | (1)                             | (2)                       | (3)  | (4)                             | (5)                       | (6)  |
| Deciles | Actual difference in employment | Potential wage difference | Predicted difference due to different wage offer distributions | Actual difference in employment | Potential wage difference | Predicted difference due to different wage offer distributions |
| 1       | -9.77                           | -10.83                    | -1.30  | -10.54                          | 6.64                      | 1.41   |
| 2       | -9.61                           | -9.59                     | -2.21  | -7.65                           | 8.18                      | 0.43   |
| 3       | -6.37                           | -7.93                     | -0.62  | -11.2                           | 8.45                      | -0.69  |
| 4       | -6.89                           | -7.01                     | -1.81  | -6.39                           | 7.99                      | 2.33   |
| 5       | -5.51                           | -6.36                     | 1.00   | -8.14                           | 7.68                      | 2.08   |
| 6       | -6.12                           | -5.32                     | -1.42  | -8.46                           | 7.08                      | -0.27  |
| 7       | -5.82                           | -4.66                     | -1.00  | -5.39                           | 6.41                      | 2.96   |
| 8       | -5.42                           | -3.92                     | 1.88   | -7.69                           | 5.63                      | -1.99  |
| 9       | -6.11                           | -2.20                     | -1.46  | -7.65                           | 4.57                      | 1.19   |
| 10      | -3.75                           | -0.20                     | 0.16   | -4.13                           | 0.30                      | 0.48   |
| Total   | -6.55                           | -5.80                     | -0.68  | -7.73                           | 6.29                      | 0.79   |

*Note:* Columns one and four: actual differences in employment along the potential wage distribution. Columns two and five: differences in potential wages. Columns three and six: differences in participation if ethnic minorities had the white native wage distribution.

differences in the participation functions rather than by differences in the wage distributions.

In Table 6 we investigate this further. We display the actual differences in employment between ethnic minorities and white natives for the deciles of the (imputed) wage distributions in the first (males) and fourth (females) columns. The numbers show that employment differences are slightly higher at lower deciles; overall, employment probabilities are 6.6% lower for British born ethnic minority males, and 7.7% lower for females. The next columns (columns two and five) display differences in potential wages (in per cent) across deciles. For ethnic minority males, the disadvantages are largest at lower deciles of the distribution, and disappear further up the distribution. The mean disadvantage for ethnic minority males is about 5.8%. For females, there is an advantage for ethnic minorities along most of the distribution, except for the highest decile, with a mean difference of about 6.3%.

Columns three and six report the predicted differences in employment probabilities between white native and ethnic minority individuals if ethnic minorities faced the potential white native wage distribution, evaluated at the ethnic minority participation-wage relationship. This corresponds to the first term on the right hand

side in (1).<sup>13</sup> The numbers show that differences in wages within deciles only explain a very small part of the overall difference in participation. Across all deciles, the difference between male ethnic minority and white native employment is  $-0.7$  percentage points if ethnic minority males faced the potential wage offer distribution of white males, compared to the overall employment disadvantage of approximately 6.6 percentage points. The remaining 5.9 percentage points in the employment differential are accounted for by differences in the participation functions (corresponding to the second term on the right hand side in (1)).

For females, the difference in employment probabilities predicted by differences in the wage distributions only is in favour for ethnic minority females, due to the large positive overall wage differential. Thus, the overall difference in employment probabilities between ethnic minority females and white native females due to differences in the participation functions increases to 8.5 percentage points on average ( $-7.73-0.79$ ). Overall, these results suggest that differences in (imputed) wage offers do not explain much of the differences in overall employment probabilities between ethnic minorities and white natives, and that most of the employment gap is due to differences in the participation functions. As we discuss above, these may differ due to preferences, or differences in reservation wages. We investigate this in the next section.

### 4.3 Possible explanations

We have investigated a number of possible explanations for the disadvantage of British born ethnic minority individuals. Analysis is only suggestive, but may point to possible directions for future research. Results are reported in the online Appendix 2.

First, although both ethnic minority and white native individuals have obtained their education in Britain, the quality of education may differ, thus possibly explaining lower returns. Hence, we use a detailed breakdown of educational background information to investigate this. Overall, these results suggest that differences in the educational composition are not important in explaining differences in outcomes as reported in Sections 4.1 and 4.2 respectively (see Annex 1, Appendix 2).

Second, one reason for lower employment probabilities of ethnic minorities may be the frequency and type of job offers they obtain. We investigate this by relating differences in self-reported perceptions of discrimination due to race, colour, cultural background, or religion to differences in observed employment probabilities across the different ethnic groups. Our analysis does not suggest any systematic relationship between employment probabilities, and perceived labour market discrimination across groups (see Annex 2, Appendix 2).

<sup>13</sup>Using the notation we introduced above, the table entry for the  $k$ th decile equals  $\int_{w \in k^{\text{th}} \text{decile}} p^m(w)(g^m(w) - g^{mm}(w))dw$ .

Finally, employment may be lower due to lower willingness to participate in the labour market, due to preferences or differences in reservation wages (see Annex 3, Appendix 2). We investigate whether those who do not participate in the labour market would like to work if given the opportunity, and compare these numbers across populations. We also investigate whether the prevailing attitudes in the respective communities towards female labour force participation are compatible with observed differences. Our analysis suggests that the lower labour force participation rates for some ethnic groups (e.g. for Pakistani and Bangladeshi women) is largely due to their lower readiness to participate in the labour market, and less so because individuals do not find jobs or are being discriminated against. The large gender differential in educational attainment for these two groups suggests that women invest less in education anticipating they are unlikely to work later on. Based on data from the British Social Attitudes Survey (BSAS) for several years, we also find a strong ‘conservative’ view about the role of women among Bangladeshi and Pakistani women.

## 5. Conclusions

This paper investigates educational attainments and economic behaviour of Britain’s ethnic minority immigrants and their children, and relates it to comparable cohorts of white British born individuals, drawing on 25 years of data from the LFS. We create two birth cohorts and study how British born ethnic minorities perform in terms of education and employment with respect to their first generation and to comparable groups of white natives. We then examine differences in wage distributions as well as differences in participation rates between British born ethnic minorities and white natives.

In terms of educational attainment, our results confirm the strong educational background of Britain’s ethnic minority immigrant population. This is in line with recent work by Dustmann *et al.* (2010), who find that ethnic minority pupils gain substantially during compulsory schooling, with some groups overtaking their British born white peers. Compared to the potential parent generation of first generation ethnic minority immigrants, educational attainment for ethnic minorities born in Britain is on average higher. It is also higher when compared to educational attainment of their white native peers. However, when turning to employment, we find that both first generation ethnic minority immigrants and British born ethnic minorities experience lower employment probabilities than their white native peers. Based on the findings of educational attainment, this is particularly unexpected for British born ethnic minorities. We find a slight wage disadvantage for British born male ethnic minorities who work and substantial wage advantage for females. However, when we evaluate their wage distributions at individual attributes and regional allocation that are equal to those of white natives, we find a wage disadvantage for both males and females. This suggests that British born ethnic minorities obtain lower wages on average for the same

observable characteristics than their white native peers. Our findings also establish a large degree of heterogeneity between the different ethnic minority groups of both foreign born and native born individuals, which is persistent through birth cohorts. For instance, the low employment shares of first generation Pakistani and Bangladeshi foreign born females can also be observed for those born in Britain in later generations.

To investigate further how this may impact on employment, we evaluate how much of the differential in observed employment is due to differences in (imputed) wage offers along the wage distribution. We find that differences in wage offer distributions hardly account for the employment difference of British born ethnic minority individuals. This suggests that most of the difference is due to different participation functions.

We then explore some possible explanations. We find no evidence for differences in the quality of educational qualification obtained by the two groups to contribute to employment and wage differentials. Investigating whether discrimination may add to disadvantaged employment positions of British born ethnic minorities, we find no systematic pattern between employment probabilities across the different groups, and perceptions of discrimination. There is also little evidence that the relatively high rates of inactivity, which drive low employment rates for some groups, are the result of labour market discouragement. For instance, we find the lowest intent to participate when offered a job among inactive individuals with the highest inactivity rates. This suggests that inactivity is partly due to lower readiness to participate in the labour market. We also find also some evidence that groups with the highest rates of non-participation of females have at the same time conservative views about female labour force participation.

## Supplementary material

Supplementary material (the Appendix) is available online at the OUP website.

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