

# PERIOD, LIFE-CYCLE AND GENERATIONAL EFFECTS ON ETHNIC MINORITY SUCCESS IN THE BRITISH LABOUR MARKET\*

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*Abstract:* The paper uses repeated cross-section data in order to trace the experiences of different generations of ethnic minorities over time in the British labour market. It distinguishes life cycle, generational and period effects on ethnic minority experience in the labour market (focussing on ethnic penalties with respect to employment). On theoretical grounds, we might expect to find some “catching up” with respect to all three. However, the paper finds little evidence of catching up on the part of the most disadvantaged groups – Black Africans, Black Caribbeans and Pakistanis and Bangladeshis – either over the life cycle, generations, or historical time. In contrast the various white groups had relatively little catching up to do and show trajectories that are fairly similar to those of the white British majority population. These white groups are also joined by the Indians and Chinese minorities who are relatively successful in the labour market. The paper discusses several mechanisms that may account for the differential patterns, like discrimination, community structures and enclave economies, or changing frames of reference.

## *1. Introduction*

Many studies have demonstrated ethnic disadvantage in the labour market (Heath/Cheung 2007; Kalter/Kogan 2006; Li/Heath 2008; Van Tubergen et al. 2004). Most of this research, however, has been static and has relied on single cross-sectional analysis. A key unanswered question is whether this disadvantage is declining over time or across generations. A dynamic analysis is likely to give us a much better understanding of the generative processes that lies behind the cross-sectional picture of disadvantage. It is also likely to have some major policy implications.

The aim of this paper is to use repeated cross-section data in order to trace the experiences of different generations of ethnic minorities over time in the British labour market. In particular, we propose to examine life cycle, generational and period effects on ethnic minority experience in the labour market. It is important to distinguish between these three processes, since it is well established that all three are important within the labour market. Thus there are life cycle or career processes as young people enter the labour market at lower levels and then work their way up particularly into

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managerial position. There are period effects with labour market conditions and unemployment rates changing over time and there is generational change with younger generations being much more highly educated than older ones.

The three processes are likely to be even more important in the case of migrants and their descendants, where they are also likely to take somewhat different characters from those among the majority workforce. There have been many suggestions in the literature that life cycle or career processes will be important for new migrants. Migrants tend initially to be quite disadvantaged (at least with respect to income) on arrival in a foreign country but then gradually improve their position, relative to the native-born, as they acquire labour market experience and other skills, such as a degree of fluency in the domestic language, and an understanding of recruitment and work practices in the western labour market (Borjas 1985; Chiswick 1978; Duleep/Regets 1997). In his classic work, Gordon (1964) referred to these as processes of acculturation and regarded them as among the first to occur. (Confusingly, economists often term these processes "assimilation", which has a quite different meaning in the sociological literature.)

On somewhat similar grounds, it can be argued that there will be major generational processes, with the children of migrants having host-country qualifications, fluency in the main language, host-country work experience and social connections (Heath et al. 2008). They will also tend to have host-country expectations and frames of reference, whereas the migrant generation may be more oriented to their countries of origin, sending remittances home and in many cases perhaps expecting to return home themselves. On these grounds we would expect the second generation to experience much less disadvantage in the labour market than the parental generation experienced and for their outcomes to be more similar to those of the majority population (Heath/Cheung 2007).

There may, too, be generational differences in returns to education. It has often been suggested that, because of their foreign qualifications and lack of fluency in the English language, the first generation will have lower returns to education while the second generation, with their domestic qualifications and linguistic fluency, will experience the same kinds of return on their educational investments as do the majority population (Heath/Cheung 2007).

We can also expect some period effects. A third set of arguments suggests that there will be a gradual improvement for both generations over time as the context in the destination country gradually changes. This might be expected to happen partly because younger generations in the majority population tend to be generally somewhat more liberal and less ethnocentric than older generations (Rothon/Heath 2003), partly because of the passage of explicit anti-discrimination legislation (such as the 1976 and 2001 Acts in Britain), and partly because of increased contact between members of majority and minority groups, which is often held to increase tolerance. A counter-argument is that the growing number of immigrants over time will increase competition in the labour market and thus lead to increased prejudice (Bobo 1999; Giles/Evans 1986; Quillian 1995).

Historically, this picture of gradual progress across the life cycle, across generations and across time has been found to apply to the experience of migrants from Europe to

the USA, and their descendants, over the course of the twentieth century (Putnam 2007). However, while we can in general expect to see some progress on all three counts in Western Europe in more recent decades, it is much less clear that the progress will be shared equally by all ethnic groups and whether the basically optimistic experience of white migrants to the USA will be repeated in the case of the “new” migrants and their children from less developed countries. Indeed, there has been considerable discussion in the US too as to whether these processes apply to the more recent waves of migrants from less developed countries in the same way that they applied to the earlier waves of European ancestry (Card et al. 2000; Perlmann/Waldinger 1999).

In the case of life cycle processes, it has been suggested that, while a process of intra-generational catching up may occur, parity may never be achieved by culturally-distant groups, especially since language is harder to acquire the later the stage at which it is learned (Dustmann/Fabbri 2003). In the case of Britain, too, we might expect to find that the life cycle process of catching up may be more marked for white groups, such as Irish or European immigrants, than in the case of more culturally distant groups such as Pakistanis or Bangladeshis.

In the case of generational processes, Borjas (1992, 1995) has argued in the American context that human capital externalities may leave a legacy of disadvantage for later generations, delaying processes of inter-generational catching-up, perhaps indefinitely. (However the reanalysis by Alba et al. 2001 indicates that this legacy did not extend to the third generation for groups of European ancestry). Heath and Cheung (2007) have argued similarly that the conditions of the migrant generation in Western Europe may have implications for later generations, with groups that were composed largely of guest-workers in the first generation continuing to display disadvantage in the second generation because of human capital deficiency and associated externalities. This suggests that inter-generational progress may be greater for groups who initially had relatively high human capital, such as the Africans, Chinese and Indians, rather than for groups with low original human capital such as Pakistanis and Bangladeshis, and to a lesser extent, Caribbeans (although in the case of Caribbeans in Britain the first-generation women were relatively highly educated since there were special efforts to recruit qualified nurses from the Caribbean for the health service).

In the case of period effects, too, we might expect the catching-up process to be more marked for some minorities than for others. The contact hypothesis suggests that it is contact under conditions of equality that promotes tolerance (Allport 1954; Hamberger/Hewstone 1997; Stouffer 1949). This suggests, first, that groups such as Indians and especially Pakistanis and Bangladeshis who have higher levels of community closure, as shown by their low intermarriage rates and higher geographic concentration, may not develop reciprocal tolerant attitudes at the same rate as do, say, Chinese and Caribbeans. In addition, the war in Iraq and associated anti-Muslim feeling suggests that in the most recent period progress might be limited for Muslim groups. It has also been suggested in Britain this anti-Muslim feeling may have led to discrimination on religious grounds over and above the racial discrimination that has been in endemic in most western countries.

An alternative hypothesis about period effects is that the effects of labour market conditions on ethnic minority unemployment are hypercyclical. That is to say, rather

than any continuing linear trend towards equalization of unemployment risks, ethnic minorities might have greater risks of unemployment when the labour market is very slack (as in the early 1980s in Britain) and relatively lower risks when the labour market is tight and there is greater demand for labour.

We hypothesize then that we should generally find life cycle, generational and period (over time) improvements in the position of migrants and their descendants in the British labour market. However, we also hypothesize that, for a variety of different reasons, there may be some ethnic variation within these broader “catching up” processes. In particular we expect the catching up to be most noticeable for groups of European ancestry, such as the Irish, and least noticeable for groups such as the Pakistanis and Bangladeshis, with African, Indian and Caribbean groups in between.

The aims of this paper, therefore are, first, to test whether immigrants and their descendants gradually “catch up” with the majority population (white native-born British) over the life cycle, across generations, and across historical time and, second, to test whether there are ethnic variations in the extent of these “catching up” processes. In this paper we focus on “catching up” with respect to unemployment, rather than with respect to occupational attainment or income. Previous research in Britain has suggested that access to employment is the crucial hurdle that migrants and their descendants have to overcome and it therefore makes an appropriate starting point for analysis (Cheung/Heath 2007; Heath/Yu 2004; Leslie et al. 1998; Li 2004; Model 1999).

Our focus is particularly on what we have elsewhere termed “ethnic penalties”, that is to say the net unemployment rates of the different ethnic minorities when compared with those of members of the White British majority population at a similar stage of the life cycle and with similar qualifications (Heath/McMahon 1997; see also Berthoud 2000). Gross unemployment rates can be very misleading since some groups disadvantage may be masked by their high level of qualifications. For example, in Britain Black Africans tend to have rather high qualifications and a low gross unemployment rate, but when we compare their unemployment rates with those of similarly-qualified members of the majority population we find that they experience major disadvantages. It is these net disadvantages, that is, the disadvantages observed when comparing members of a minority group with members of the majority with the same levels of education and experience in the labour market, on which we focus.

## *II. Data and methods*

We explore these issues using the pooled cross-sections of the General Household Survey (GHS) and the Labour Force Survey (LFS) from 1972-2005 following through the experiences of pseudo-cohorts of “early arrivals” (people who had arrived in Britain by the 1970s), the “second generation” (native-born ethnic minorities, the children of the early arrivals, entering the labour market in the 1990s and 2000s), and “recent arrivals” (people who migrated to Britain and entered the labour market at the same time as the second generation).<sup>1</sup> One standard problem with this sort of analysis is that there will

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<sup>1</sup> For the most recent period there will also have been some third-generation groups, particularly

be some return migration and this may bias our estimates. However, in Britain as in other countries, so little is known about re-emigrants or their characteristics that we can neither estimate its magnitude nor the likely direction of any bias.

The pooled data set has around 4.7 million records with nearly 420 thousand minority ethnic members. This, to our knowledge, is the largest, most systematic, and most carefully-constructed data source ever assembled covering a long period of thirty-four consecutive years, with all the key variables coded to be consistent over time. The variables standardised include ethnicity, country of origin, time of arrival, age, marital status, educational qualifications, employment status, class, earnings from the labour market, number of children in the family unit, limiting long-term illness and hours of work. For ethnicity, we differentiate nine main groups: White British, White Irish, White Other, Black Caribbean, Black African, Indian, Pakistani/Bangladeshi, Chinese and Other (including "Mixed"). (See *Appendix 1* for details of the construction of this measure.) This kind of differentiation is more detailed than is available in most existing research on ethnic relations using quantitative data and it enables us to conduct a thorough investigation of the economic situation of the main minority ethnic groups in Britain in the period covered. In particular, we can investigate the socio-economic situation of one of the long-standing and largest immigrant groups to Britain, namely, the Irish (from the Republic of Ireland rather than from Northern Ireland) and to compare their experience with that of newer migrant waves from more distant and less developed countries.

With regard to generation status, we differentiate first and second (or later) generations, the former referring to people coming to the UK after the beginning of compulsory schooling (age 5) and the latter to those who were either born in the UK or who arrived at or before the age of five. The second generation will thus have received all of their education in Britain and will also be fluent in the English language. Unfortunately, our data sources do not allow us to make consistent distinctions of the third (or higher) generation from the second generation owing to the lack of relevant information on parental birthplace in the LFS as earlier noted. This is unlikely to be a problem in the case of groups arriving more recently (such as the Black Africans and Pakistanis) but there could in our latest period be some third generation respondents of Black Caribbean ancestry and there will certainly be some of white Irish ancestry. This needs to be born in mind when interpreting our results.

Following previous practice, we construct a seventeen-category ethno-generational variable from the cross-classification of ethnicity and generation (but combining first-generation White British, who are a rather anomalous group, with the other White British). In our statistical analyses we then take the White British as the reference category. We have found that this is preferable to including separate terms for ethnicity and generation. In particular, a term that simply distinguishes first from second generation is completely inappropriate in the case of the White British, the vast majority of whom are third or higher generation. We have also suggested that there will be interactions between ethnicity and generation. Our combined ethno-generational variable in

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in the case of the Irish and Caribbeans. However, we are not able to distinguish these groups in the LFS, although we can in the GHS, and have therefore simply amalgamated them with the second generation.

effect fits all the interaction terms while simultaneously allowing us to compare the minority groups with the reference category of the White British.

As noted above, we focus in this paper on experiences of unemployment. We confine our analysis to those who are economically active, contrasting the unemployed with the employed. Notice that there will be important issues of selection bias, particularly in the case of women where rates of economic inactivity are especially high among some ethnic groups. We therefore use Heckman selection models (Heckman 1979) in order to take account of this (see further below). Because these models make strong but unverifiable assumptions we have also compared our results to a standard probit analysis (results available on request). In the case of men, the results with and without adjustment for selection are very similar. In the case of women, however, the estimated sizes of their ethnic penalties are substantially reduced once we adjust for selection. Our analyses are conducted for men aged 16 to 64 and women aged 16 to 59, and resident in Great Britain at the time of interview. In our modelling work, we further restrict the samples to those with full valid data in the variables used. Even with such restrictions imposed, there are just under two million records.

Our major control variables are educational level, where we distinguish six levels, marital status, and potential years in the labour market (estimated as age at time of survey minus age on completing full-time education). These are taken to be proxies for the key aspects of human capital, skills and experience, that are usually taken to be associated with gaining employment. Unlike much of the econometric literature, we do not include years of British (as opposed to foreign) labour market experience. This will be highly collinear with our measure of potential labour market experience. In our selection equation, we also include whether or not the respondent had a long-term illness that limits their labour-market participation and the number of dependent children under sixteen. (Further details of the coding of these variables are given in *Appendix 1*). *Table 1* summarizes the sample characteristics.

The usual methods for analysing life cycle, generation and period effects from pooled cross-section data have to confront the well-known identification problem: once one knows the value of two of the three variables of age (indexing life-cycle), year of survey (indexing period) and birth cohort (indexing generation), one can logically derive the third. Thus if one knows that a respondent was born in 1960 and interviewed in 1990, it follows that age must be 30. Hence one cannot include all three variables in the same model simultaneously. Other stratagems have to be followed in order to obtain identifiability. (For accounts of the identification problem in age/period/cohort (APC) analyses, see Glenn 1977; Mason/Fienberg 1985.)

However, in our case the theoretical interest is not in generations defined by date of birth but in generations defined by place of birth (and age of arrival in Britain). Hence we do not have this particular identification problem. We can simultaneously include age (in our case years of potential labour market experience), year of survey (indexing period) and generation. Of course, the possibility remains that there are other generational effects based on differences between birth cohorts, of the sort that are the usual focus of APC analyses. For example, more recent generations, brought up in a multicultural Britain, might be less racist and less prone to discriminate against minorities than older generations. However, we do not on theoretical grounds expect

Table 1: Main characteristics of ethnic groups (N = 1 952 896)

Ethnicity	percent of population	percent employed	percent unemployed	percent inactive	percent no-qualifications	percent married/cohabiting	percent long-term illness	Mean years in labour market	Mean number of dependent children
W British	90,3	73,0	6,0	21,0	31,2	66,4	14,1	20,7	0,7
1 <sup>st</sup> g W Irish	0,8	86,4	7,2	24,4	48,2	70,7	18,1	27,5	0,7
1 <sup>st</sup> g W Other	1,9	69,2	5,3	25,5	22,1	69,7	11,1	21,5	0,7
1 <sup>st</sup> g B Caribbean	0,5	69,4	10,2	20,5	48,2	59,7	18,1	27,1	0,9
1 <sup>st</sup> g B African	0,4	53,9	10,9	35,6	17,4	54,8	11,2	16,9	1,1
1 <sup>st</sup> g Indian	1,1	66,2	7,1	26,7	37,7	79,7	16,3	22,6	1,2
1 <sup>st</sup> g Pakistani/Bangladeshi	0,7	38,5	10,2	51,3	60,1	79,8	22,4	21,1	2,1
1 <sup>st</sup> g Chinese	0,2	59,4	4,9	35,7	32,1	66,8	6,8	18,4	0,9
1 <sup>st</sup> g Other	0,7	57,1	7,4	35,6	22,4	67,8	12,6	19,3	0,9
2 <sup>nd</sup> g W Irish	0,2	70,3	7,7	22,1	42,4	70,5	15,5	23,4	0,9
2 <sup>nd</sup> g W Other	1,0	73,4	6,4	20,2	17,2	62,8	10,6	16,5	0,8
2 <sup>nd</sup> g B Caribbean	0,5	61,8	14,6	23,7	20,6	38,8	10,3	11,2	0,9
2 <sup>nd</sup> g B African	0,1	56,2	11,6	32,1	13,8	47,3	8,4	9,8	0,8
2 <sup>nd</sup> g Indian	0,5	58,9	8,4	32,7	16,7	54,4	7,1	8,6	1,0
2 <sup>nd</sup> g Pakistani/Bangladeshi	0,4	40,3	11,2	48,5	26,4	52,4	10,0	7,1	1,5
2 <sup>nd</sup> g Chinese	0,1	55,1	6,1	38,8	14,8	47,2	5,8	8,0	0,6
2 <sup>nd</sup> g Other	0,7	64,4	9,6	26,1	27,2	50,3	11,6	12,2	0,9
All	100,0	72,0	6,2	21,8	31,1	66,2	14,0	20,5	0,8

Notes: 1. For men aged 16-64 and women aged 16-59 (same below).  
 2. 2<sup>nd</sup> generation ethnic minority groups refer to those who were born in or who came to the UK by the age of 5. 0.26 percent of White British were born overseas but are not separately coded, that is, they are coded as the 'White British' (same below).  
 3. Respondents with missing data on the key variables in the table are omitted from analysis in this paper.

Source: The pooled GHS/LFS (1972-2005) (same below).

major generational differences of this sort operating directly on the unemployment experiences of ethnic minorities. In the American literature there have also been debates about whether more recent cohorts of arrivals have been of lower “quality” than earlier cohorts. However, our checks have suggested that this is not an issue of major importance in Britain.

Our modelling strategy therefore is to carry out multivariate analyses of unemployment in which we include as our main predictors ethnicity, generation (combined in our ethno-generational variable), years of potential labour market experience, and period (Model 1). Following standard procedures in the sociology of ethnicity we then add controls for marital status and educational level in order to estimate the ethnic penalties experienced by our different groups (Model 2). From this model we can also determine whether there has been any process of inter-generational “catching up”. The third stage is then to include interactions between ethnicity and experience, education and period respectively in order to test whether ethnic minorities are “catching up” over the life cycle or across historical time (Models 3-5). We further include an interaction effect between ethnicity and labour market context (defined as the annual proportion in unemployment per region) to test the hypothesis of hypercyclical ethnic unemployment (Model 6). The key interest of the study then comes when we include these interactions to test our main theoretical claims.

As we noted earlier, one important issue is that of selection into economic activity. For example, people who believe that they have a low probability of obtaining work may decide not to look for work and may therefore be counted as economically inactive. “Discouraged workers” might be an example. The standard econometric technique for dealing with this kind of selection issue is to fit a selection equation, which models the likelihood of being economically active. If we find that there is a correlation between the residuals from our selection equation and that from our outcome equation (the regression of the log odds of being unemployed), then we assume that some selective process of this sort is present. In our case, we do find that the residuals are correlated, and we therefore use the standard (Heckman) correction. (For an introductory explanation of this technique see Wooldridge 2006.)

It should be recognized, however, that it is possible that the selection processes operate differently for ethnic minorities than for the majority population or between generations and this needs to be explored in further work.

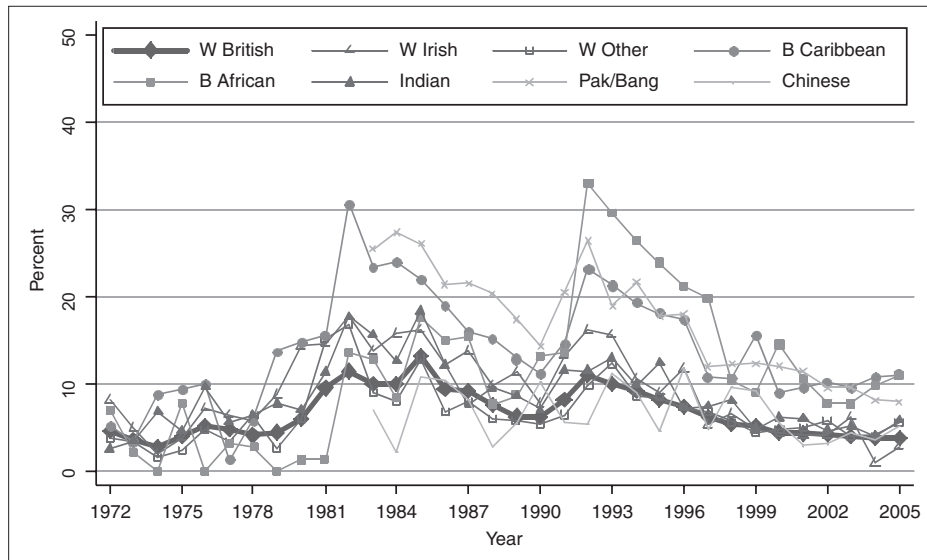
### *III. Results*

We begin with some simple descriptive results showing some of the main trends across time and then turn to the detailed statistical modelling of the effects. All analysis is conducted for men and women separately.



Figure 1: Unemployment rates for men and women

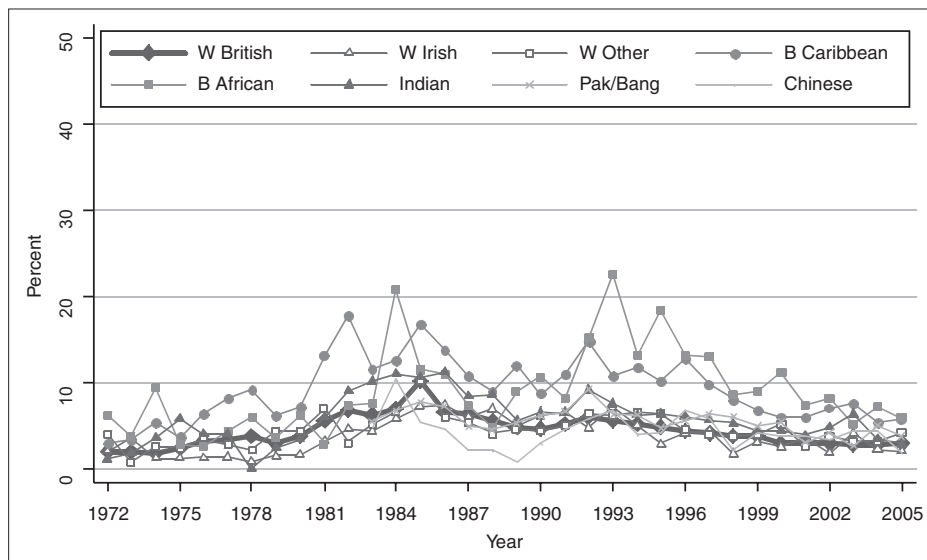
Probability of being unemployed for men



Note: Data for Chinese and Pakistani/Bangladeshi not presented before 1983 due to small samples.

Source: Pooled data of GHS/LFS (1972-2005).

Probability of being unemployed for women



Note: Data for Chinese and Pakistani/Bangladeshi not presented before 1983 due to small samples.

Source: Pooled data of GHS/LFS (1972-2005).

### 1. Patterns and trends in unemployment

The data in *Figure 1* show the percentages unemployed for men and women in Britain from 1972 to 2005 for the eight main groups (data for “Others” are not shown). As is clearly seen in the figure, the White British men and women were generally less likely than other groups to face unemployment. Also evident in the figure is the feature that the period covered witnessed two peaks of unemployment, especially for men. In much of the mid 1980s and in the early 1990s the overall unemployment rates were over 10 percent. In the 1970s and from the late 1990s onwards, the unemployment rates were much lower.

*Figure 1* also suggests that ethnic minority unemployment has a “hyper-cyclical” character, that is, “when unemployment rates increase generally, those for ethnic minorities increase even more rapidly” (Heath 2007: 17). Thus the rates for Black Caribbean and Pakistani-Bangladeshi men in the two peaks were almost three times those of the White British, whereas they fell to twice the White British rate in the periods of low unemployment.

While the data in *Figure 1* show the patterns and trends of unemployment for the different ethnic groups across time, they do not control for differences between generations, for changes across the life cycle or according to level of human capital. Over time, an increasing proportion of the ethnic minority population will be second generation, with higher levels of domestic human capital, while some of the first generation will have had substantially longer periods in the British labour market than will the “early arrivals” observed in the 1970s. We therefore turn to our multivariate analysis.

### 2. Statistical modelling of unemployment: men

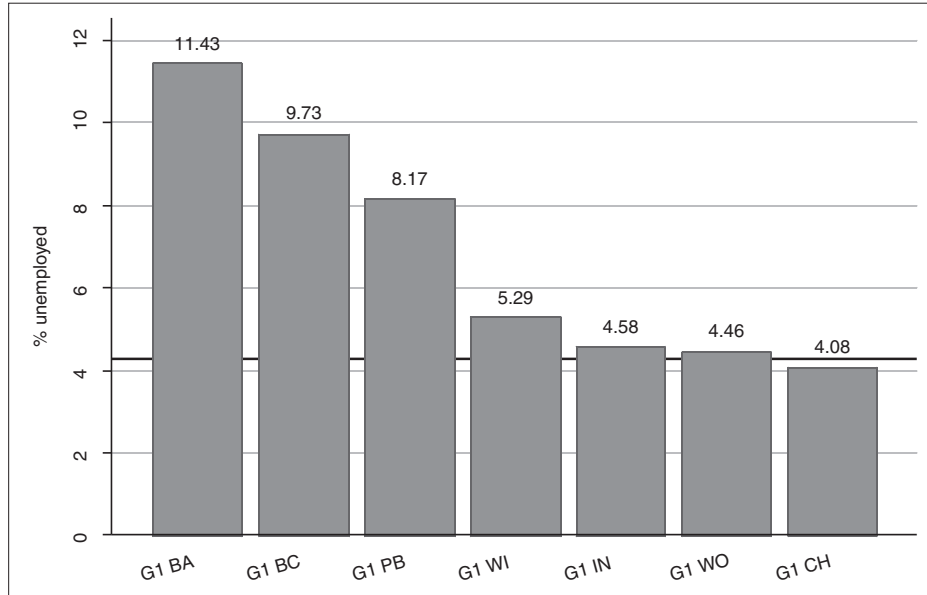
Having looked at the raw patterns and trends associated with ethnicity in unemployment over time, we now move to the multivariate analysis, initially controlling for age and generational status as well as period (where we distinguish three periods corresponding to the low unemployment period up till 1980, the high unemployment period from 1981 to 1996, and the second low unemployment period from 1997 onwards).

We conduct six models, running each analysis separately for men and women. In Model 1, we include indicators for generational differences (assessed by the seventeen category ethno-generational variable described above), life cycle effects (assessed by potential years in the labour market and years squared), and period effects (assessed by dummies for period). In Model 2, we include human capital indicators (assessed by educational qualifications and marital status, see Chun/Lee 2001; Heath/Cheung 2007; Li/Heath 2007), and in Models 3 to 6, we further include interactions between ethnicity/generation and the other variables of theoretical interest. The results are presented in the Appendix (*Figures 2* and *3* for men and women respectively). As explained earlier, these results are adjusted for selection using the Heckman procedure.

a) *Gross disadvantages and ethnic penalties*: Model 1 in *Figure 2* shows the expected patterns with risks of unemployment being much higher in the middle period and with

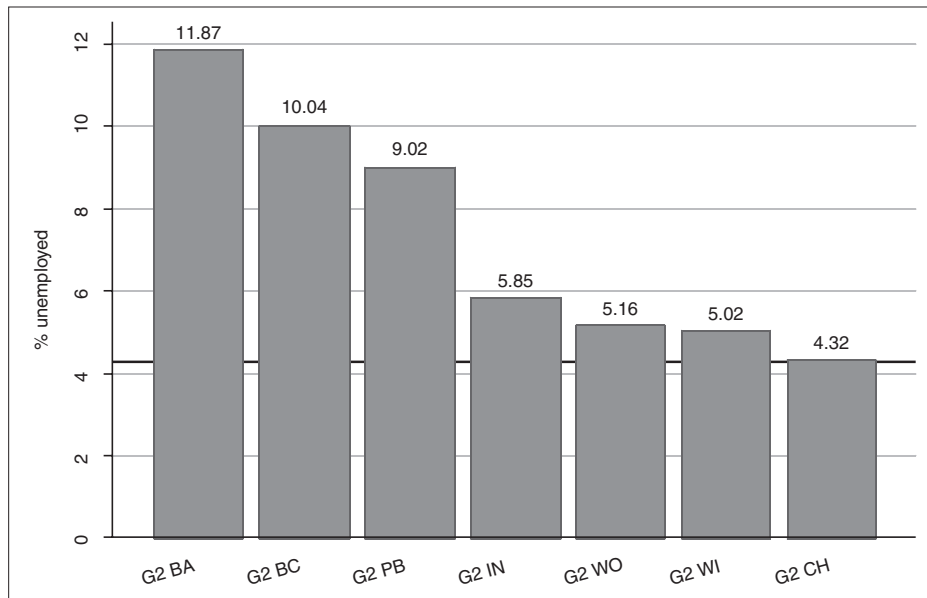
Figure 2: Predicted probabilities of unemployment for men: generational effects

Predicted probability of being unemployed for 1<sup>st</sup> generation men



For married men with secondary education and 10-15 years' LM experience (1997-2005): WB = 4,3%.

Predicted probability of being unemployed for 2<sup>nd</sup> generation men



For married men with secondary education and 10-15 years' LM experience (1997-2005): WB = 4,3%.

the usual curvilinear relationship with life-cycle stage: new entrants to the labour market tend to have higher risks of unemployment which gradually decrease with age before increasing in the years leading up to retirement later in one's career. Most importantly, Model 1 shows major ethnic differences in risks of unemployment but little variation across generations. Thus White Irish, Black Caribbean, Black African, Indian, Pakistani/Bangladeshi and the "Other" category all have significantly higher rates of unemployment than the White British at the same stage in the life cycle and in the same period. Only the White Other and the Chinese groups (again in both generations) show unemployment rates similar to or lower than those of the White British. Generational differences are rather small with the same pattern in both generations of the Black African, Black Caribbean and Pakistani/Bangladeshi groups exhibiting the greatest disadvantages.

In Model 2 we then include measures of highest qualification and marital status. Both variables operate in the expected way, with higher qualifications protecting against unemployment and the never married having the highest risks of unemployment. As other research has shown, controlling for educational qualifications accounts for a small amount of the Black Caribbean and Pakistani/Bangladeshi disadvantage (since these groups tend to be somewhat less well-educated than the reference group) but in the case of the more highly educated groups, especially Black Africans, the estimates of ethnic disadvantage actually increase in model 2 (Cheung/Heath 2007). Model 2 then gives the standard picture of "ethnic penalties" but with Black Africans now showing the largest ethnic penalty in the second generation, and with very little difference in the magnitude of the ethnic penalties across generations. There is certainly no general tendency for these penalties to be lower in the second generation: the only statistically significant difference between generations is for the Pakistani/Bangladeshi group where the ethnic penalty is significantly higher in the second generation than in the first.

*Figure 2* provides a graphical display of the magnitude of the ethnic penalties in the two generations. We calculated the predicted probabilities of unemployment in the 1997-2005 period for married men with secondary educational qualifications and with ten to fifteen years of potential labour market experience.<sup>2</sup> So on the y-axis we show the predicted probability of unemployment, and on the x-axis we array our seven minority ethnic groups (excluding the residual "Other" group), ranked in order of their unemployment. For each ethnic group we show two predictions, one for the first generation (in the upper panel) and one for the second generation (in the lower panel). The horizontal line shows the predicted unemployment rate for White British men of 4.3 percent. The predictions can be thought of as representing the ethnic penalties experienced by a "typical" man in mid-career in the most recent period.

Two points stand out. First, the ethnic groups divide into two, with people of Black African, Black Caribbean and Pakistani/Bangladeshi ancestry on the one hand showing very much higher ethnic penalties than the other groups and the groups of Indian and Chinese ancestry lying much closer to the White British, White Irish and

<sup>2</sup> These predicted probabilities are calculated from Model 6 rather than from Model 2 since Model 6 provides the most detailed set of controls. We have followed this practice of deriving probabilities from Model 6 in all the subsequent figures too.

White Other groups. This is not a simple split between “visible” and “non-visible” minorities, nor is it a simple split between those from developed and from developing countries. There is also a considerable range of ethnic penalties, with the Black Africans having unemployment rates almost three times that of the White British, and the Black Caribbean and Pakistani/Bangladeshi groups having rates that are around twice as high as the White British one.

Second, *Figure 2* brings out clearly that the unemployment rates for a “typical” man were very similar in the two generations. For example, second-generation Black Caribbeans with secondary education and 10-15 years of labour market experience were predicted to have an unemployment rate of 10,0 percent compared with 9,7 percent for the first generation and only 4,3 percent for a White British man of the same experience and education. There is thus no sign of a generational process of “catching up”.

b) *Trends over the life-cycle.* In Model 3 we then fit interactions with labour market experience in order to test whether life cycle effects vary across the different ethno-generational groups. Specifically, we are interested in testing whether the first generation groups catch up with the White British majority group (having started, we assume, well behind). We are also interested to see whether the second generation experience the same life cycle processes as the majority population. On theoretical grounds, since they are either native-born or have British qualifications, we expect them to show similar progress across the life cycle as the White British. We therefore add sixteen interaction terms, one for each ethno-generational group, with the linear term for labour market experience.

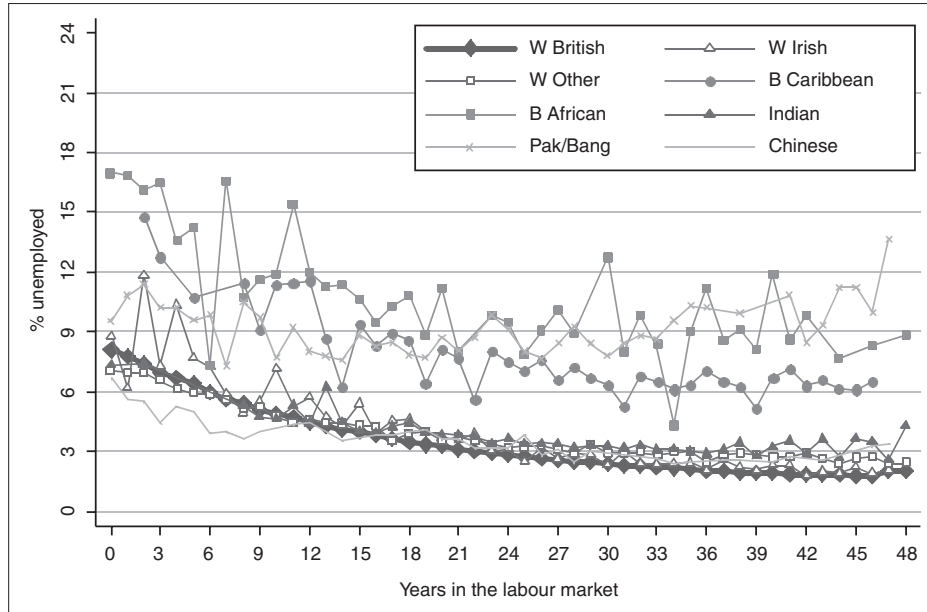
Here we see a rather striking pattern with positive interaction terms for every first generation group (statistically significant in four cases). In effect what this means is that, contrary to the conventional wisdom (which is based on research on earnings, not unemployment), the first generation were not especially disadvantaged at the beginning of their careers in the labour market, but then actually showed less progress across the life cycle, than did comparable members of the majority population. So far from “catching up”, what we actually see here is a pattern of “falling behind”. This pattern is particularly striking in the case of the Pakistani/Bangladeshi group.

*Figure 3* shows this pattern graphically. We show years in the labour market on the x axis and separate lines for our main ethno-generational groups. Again we focus on predictions for married men with secondary qualifications in the third period. As before we show separate lines for the first and second generations in the upper and lower panels respectively.

In the case of the first-generation men we see rather clearly that, at early stages of the labour market career, the Pakistani/Bangladeshi group has unemployment rates of 8 or 9 percent, only a little above those of the White British. However, over the course of the life cycle the White British unemployment rate falls to around 3 percent while the first generation Pakistani/Bangladeshi rates remain around 8 percent or even higher, thus gradually diverging from the White British over the life cycle. In contrast, the White Irish, White Other, Indian and Chinese ancestry groups all follow life-cycle trajectories close to those of the White British.

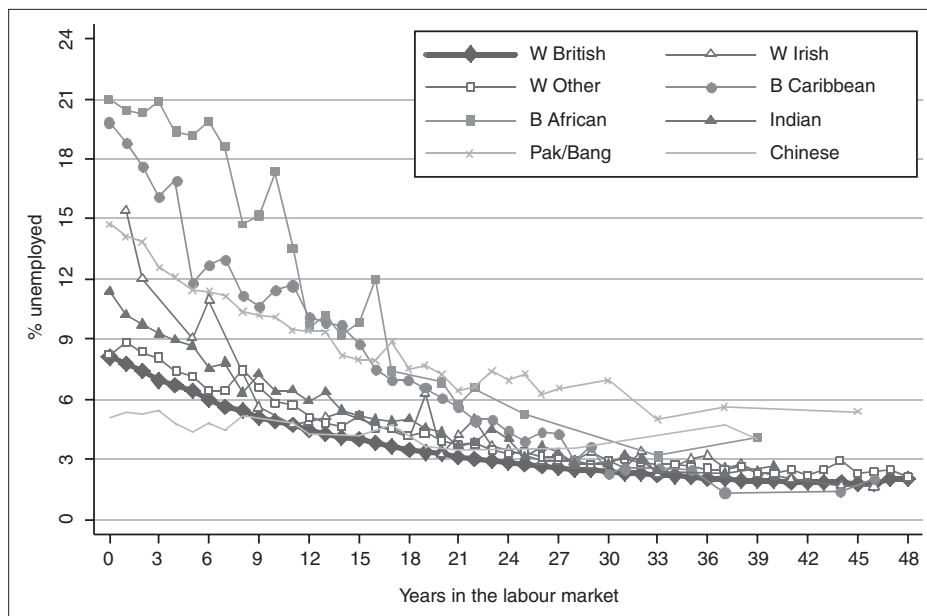
Figure 3: Predicted probabilities of unemployment for men: life cycle effects

Predicted probability of being unemployed for 1<sup>st</sup> generation men



For married men with secondary education (1997-2005).

Predicted probability of being unemployed for 2<sup>nd</sup> generation men



For married men with secondary education (1997-2005).

This result is not perhaps quite so counter-intuitive as it at first appears. The first-generation Pakistani/Bangladeshi group were classic labour migrants who came in search of work and were often under familial obligations to send remittances home. As has often been noted, these labour migrants were willing to do the jobs that members of the majority population were unwilling to do at the low wages on offer. Hence the relatively high rates of employment for these labour migrants, and their low wages, are quite understandable. Also understandable is their inability to make the same progress over the life cycle that the majority population make since many of them will have been limited by language difficulties and the like. This pattern of a relatively high initial employment rate but limited progress thereafter is not so evident for some of the other groups such as the Black Africans who were not composed to the same extent of labour migrants. Black Africans have for example been typified as “students who stayed on” (Daley 1996), and with their high initial qualifications they certainly do not fit the standard picture of labour migrants.

In contrast, in the second generation we see that most groups now follow the same kind of trajectory over the life cycle as the White British, with their risks of unemployment decreasing over the life cycle albeit from very different starting levels. However, while the unemployment rates for the White Irish, White Other and Indian groups rather quickly converge with the White British rates, the second-generation Black Caribbean, Black African and Pakistani/Bangladeshi groups continue to have significantly higher rates than the White British even after twenty years in the labour market.

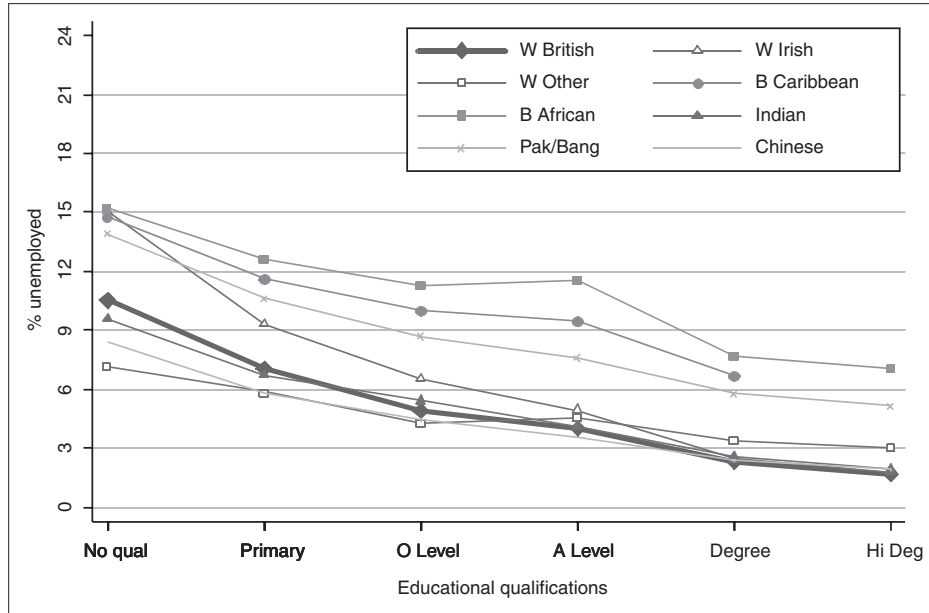
The “labour migrant” pattern of high initial employment but limited progress thereafter does not therefore seem to operate for any of the second-generation groups. For most second-generation groups life cycle processes seem to operate in much the same way as for the majority population. What marks some groups out is their higher risk of unemployment at all stages of their labour market career.

c) *Returns to education.* In Model 4 we explore a further process of generational catching up. We test whether there is a significant interaction between generation and the returns to education. It has often been suggested that, because of their foreign qualifications, the first generation will have lower returns to education while the second generation, with their domestic qualifications, will experience the same kinds of return on their educational investments as do the majority population (Heath/Cheung 2007). Again we fit sixteen interaction terms, one for each ethno-generational group (with education treated as a continuous variable for the sake of parsimony). Our expectation is broadly confirmed for the first-generation groups, five of whom show significantly lower returns to education. Most second-generation groups on the other hand have similar returns to education as the White British men. The patterns are shown graphically in *Figure 4*.

Once again, we see the familiar pattern of first-generation Black Africans, Black Caribbeans and Pakistanis/Bangladeshis having higher unemployment rates at all educational levels. But the striking feature here is that, in the case of first-generation men, the percentage point gaps are very similar at all levels of education. Thus there is a gap of around six percentage points between the Black African and White British rates for men with primary qualifications and a similar gap for those with degree qualifications. Whereas among the White British higher qualifications protect against the risks of un-

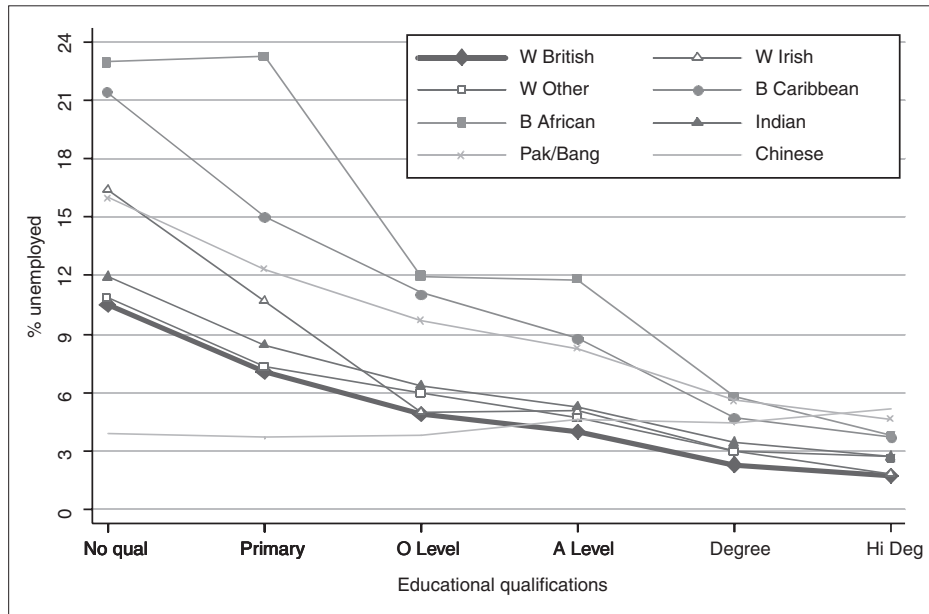
Figure 4: Predicted probabilities of unemployment for men: educational effects

Predicted probability of being unemployed for 1<sup>st</sup> generation men



For married men with 10-15 years' experience in the labour market (1997-2005).

Predicted probability of being unemployed for 2<sup>nd</sup> generation men



For married men with 10-15 years' experience in the labour market (1997-2005).



employment, this is much less true for first-generation Black Africans, Black Caribbeans and Pakistanis/Bangladeshis.

In the case of second generation men, however, there is a clear narrowing of the gap as we move from lower to higher qualification levels. This gradual narrowing is what we would expect given the likelihood of “floor” and “ceiling” effects and represents the normal profile. One surprising finding is that second generation Chinese men with low qualifications have considerably lower risks of unemployment than the White British but then “cross over” and have higher risks of unemployment than the White British at tertiary levels of education. Possibly, this might reflect polarization within the Chinese community: “poorly qualified Chinese might well be willing to take low-skilled work within the enclave economy whereas the highly qualified might be unwilling to follow in their parents’ footsteps and might insist on professional-level employment (Cheng 1994).

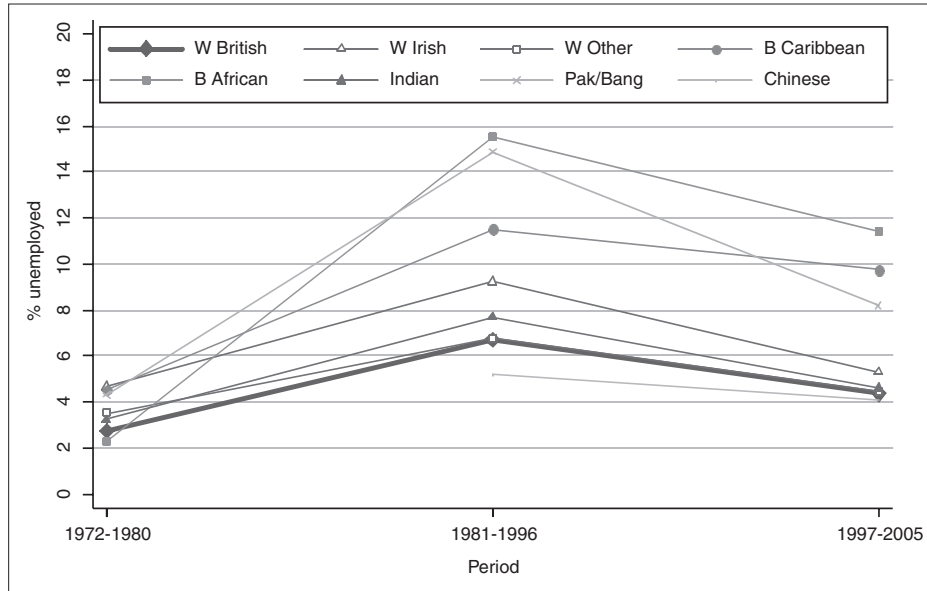
d) *Trends over historical time.* In Model 5 we then move on to the process of catching up over historical time. Note that for the interaction term we treat period as a continuous variable although we continue to treat period as a categorical term for the main effect. In effect, then, the interaction term tells us whether there is a gradual catching up process over time operating alongside the general increase in unemployment rates that occurred for all groups alike in the middle period. We follow exactly the same strategy as before, fitting sixteen interaction terms, one for each ethno-generational group. Here our expectation is that, for both first and second generation, general processes of reducing discrimination and racial prejudice will tend to equalize the “ethnic minorities” chances in the labour market with those of the majority population. What we are looking for, therefore are negative interaction terms, at least for those groups that had higher unemployment risks in the earliest period.

However, we find only three significant interactions with period, all three being positive indicating increasing risks of unemployment over time. Two of these interactions involve Black Africans, while the third involves the heterogeneous “Other” category. Here we have to be a little careful as there may well be unmeasured compositional changes in the nature of these groups across time. This is likely to be true for the Black African group, which is itself a highly heterogeneous category comprising many different ethnicities. For example, early arrivals from Africa might have come more from West Africa while more recently might have been refugees from East African countries such as Somalia. The impression of a deteriorating situation for Black Africans may instead, then, reflect a tendency for refugees in general, and perhaps Somalis in particular, to be especially disadvantaged. On balance, then, we incline to the conclusion that there has been little change overall in the position of ethnic minorities in the British labour market right across our thirty-four year period.

An alternative hypothesis about period effects is that the effects of labour market conditions on ethnic minority unemployment are hypercyclical. That is to say, rather than any continuing linear trend towards equalization of unemployment risks, ethnic minorities might have greater risks of unemployment when the labour market is very slack (as in our middle period) and relatively lower risks when the labour market is tight and there is greater demand for labour. As we saw earlier, there was some evidence for this pattern in *Figure 1*. To test this formally we include, in addition to our

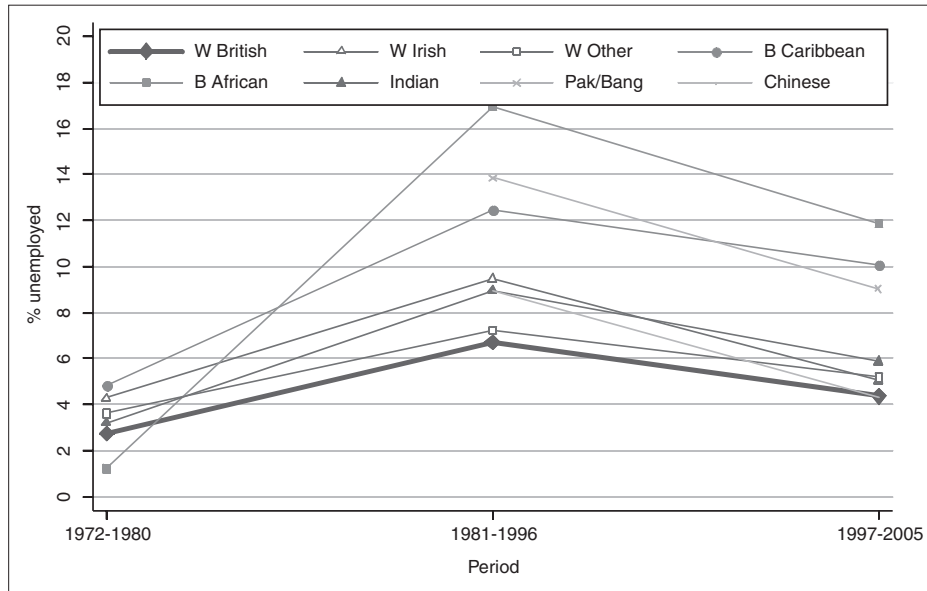
Figure 5: Predicted probabilities of unemployment for men: period effects

Predicted probability of being unemployed for 1<sup>st</sup> generation men



For married men with secondary education and 10-15 years in the labour market.

Predicted probability of being unemployed for 2<sup>nd</sup> generation men



For married men with secondary education and 10-15 years in the labour market.

main period effects, a measure of the regional unemployment rate in the relevant year and an interaction between this measure and ethnicity. The results are shown in model 6 and are graphically displayed in *Figure 5*.

If the period effect on ethnic minority unemployment is hypercyclical, then we expect to find positive interaction terms, and this is exactly what we do find. Only four of the interaction terms are significant, and in all four cases they are positive. It is particularly striking that two of these significant effects are for the Black Africans. *Figure 5* shows clearly the net unemployment rates rising for all groups alike in the middle period, and rising particularly rapidly for the Black Africans, before declining in the third period. Moreover even in the third period the ethnic penalties are in absolute terms larger than in the first period: whereas the percentage point gaps in the first period were only around a couple of points, the gaps reach six points or more in the third period for the three most disadvantaged groups.

e) *Conclusions (for men)*. Our main conclusions for men, therefore, are that

- the generational changes have been small or nonexistent with the same pattern of large ethnic penalties for the Black African, Black Caribbean and Pakistani/Bangladeshi groups in both generations;
- there is no general tendency for the first generation to catch up over the life cycle – indeed the reverse holds for the classic labour migrant group of Pakistanis and Bangladeshis;
- the first generation groups (apart from the Indian, Chinese and White Irish) all tend to have lower returns to education;
- there has been no general narrowing of the gap over historical time, although at least for some groups unemployment does seem to be hypercyclical.

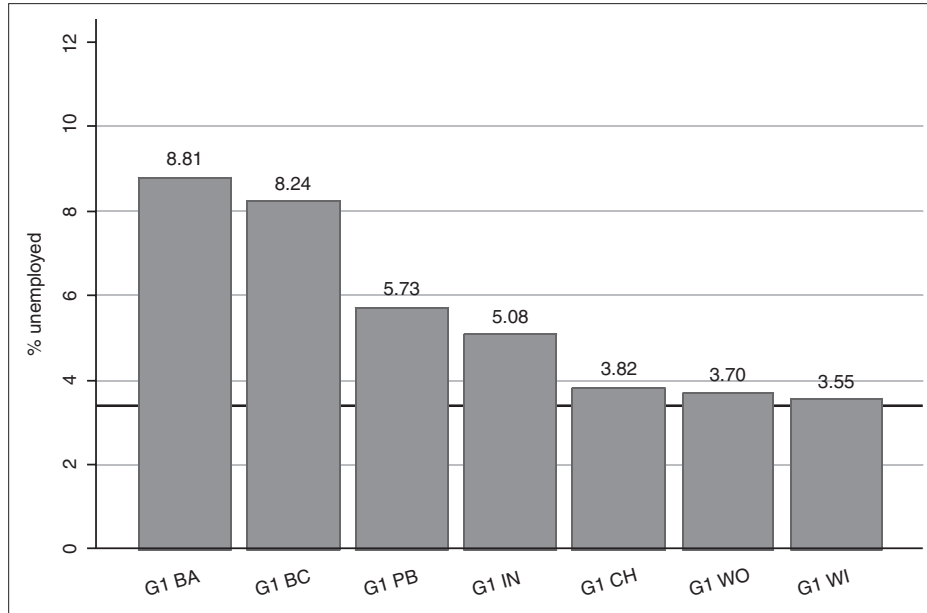
### 3. Statistical modelling of unemployment: women

Do the same patterns also hold for women? To answer this question *Figure 3* (in the appendix) shows the same sets of analyses for women. The results of Models 1 and 2 are similar to what we would have expected from previous research, with most minority groups, both in the first and second generations having significantly higher risks of unemployment than the majority population. As with men, we also find little change across generations. In the second generation, we find that four of our groups, Black Caribbean, Black African, Indian, Pakistani/Bangladeshi and Other, all have significantly higher risks of unemployment than the majority population.

*Figure 6* shows the predicted probabilities in the most recent period for married women with secondary education and 10-15 years potential labour market experience. Overall the magnitudes of the ethnic penalties are very similar in the first and second generations with the Black African and Black Caribbean having unemployment rates over 8 percent in both generations (compared with the White British rate of 3,4 percent). As with men, there is no significant decline in the ethnic penalties across generations.

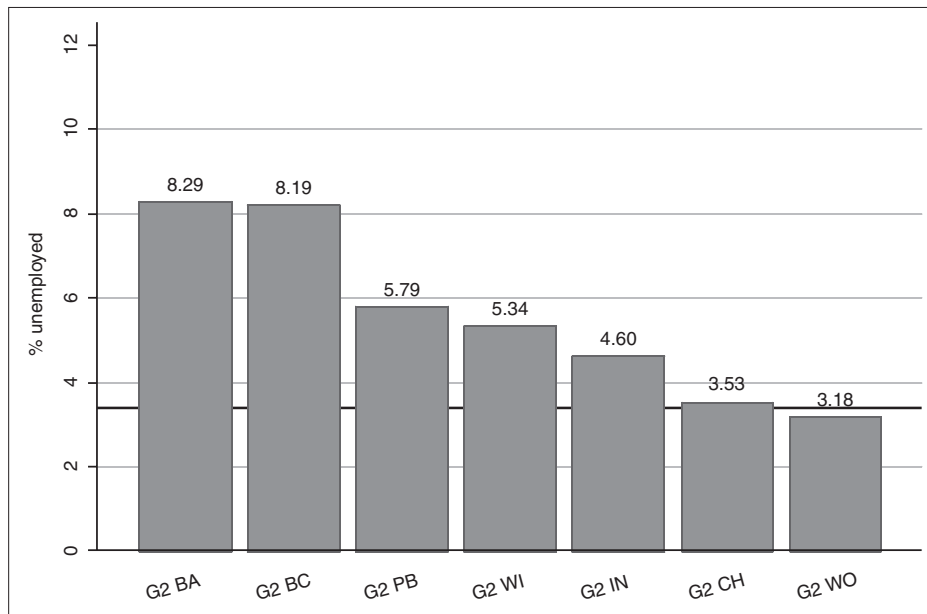
Figure 6: Predicted probabilities of unemployment for women: generational effects

Predicted probability of being unemployed for 1<sup>st</sup> generation women



For married women with secondary education and 10-15 years' LM experience (1997-2005): WB = 3,4%.

Predicted probability of being unemployed for 2<sup>nd</sup> generation women



For married women with secondary education and 10-15 years' LM experience (1997-2005): WB = 3,4%.

Turning to life cycle processes, we find only one significant interaction and therefore cannot reject the null hypothesis that life-cycle processes operate in the same way for minority women in both generations as they do for White British women. This can be seen clearly in *Figure 7* which shows unemployment risks gradually declining over the life cycle for all groups of women.

It is not entirely clear why the patterns should be so different for first-generation women from those of first-generation men. One must remember, however that our measure is of potential years in the labour market rather than actual years in the labour market, and for many women (from all ethnic groups including the White British) there will be substantial periods outside the labour market because of childcare.

In the case of the interactions with education, however, the pattern is quite similar to that for men, with many positive signs for the interaction terms, indicating lower returns to education. As with men this is a phenomenon primarily affecting the first generation.

*Figure 8* also shows that, among the first-generation women, some of the less qualified ones actually have lower risks of unemployment than the White British although the gap reverses at higher levels of education. We observe this pattern in the Chinese, Pakistani/Bangladeshi and Indian groups, all of whom have significant ethnic enclaves and opportunities for employment by co-ethnics, albeit in low-skilled low-pay jobs. This is also consistent with much of the ethnographic literature. It is also striking that this pattern does not hold for the Black Caribbeans or the Black Africans, two groups that in Britain are generally held not to have ethnic employment enclaves (and indeed have rather low rates of self-employment generally, see Li 2007). While of course we cannot directly confirm the ethnic enclave interpretation from these data, it does seem to make good sense of our pattern of results.

We also find very similar results for women as for men when we move on to the over-time trends. As with men, there are very few significant interactions with historical time and the two that are significant are positive, indicating increasing risks of unemployment, relative to the majority population in the later two periods. Once again these positive interactions involve the heterogeneous groups of Black Africans and Others, and so the changing ethnic composition of these groups may well be the root cause of the trend.

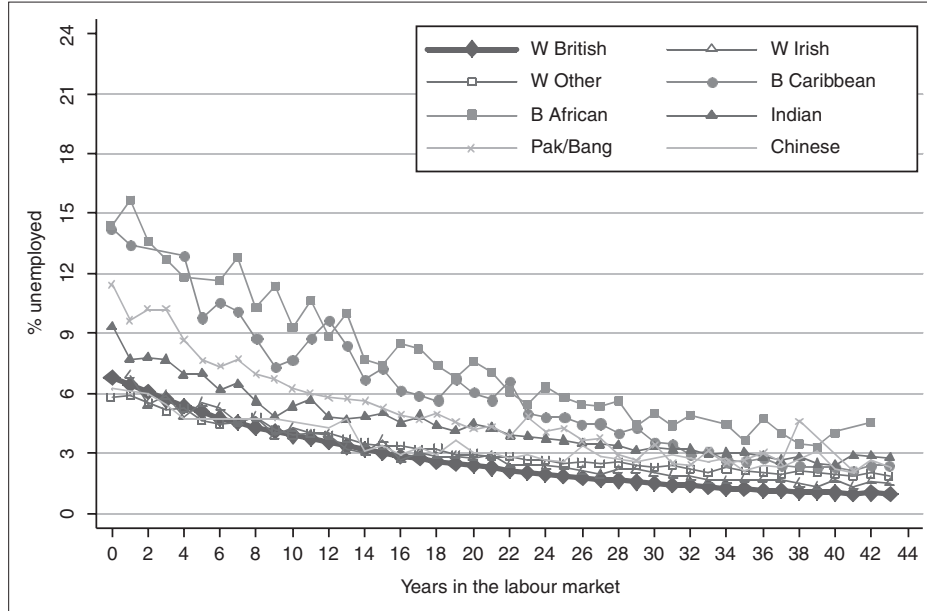
Finally, there is little evidence that the hypercyclical pattern found for men also applies to ethnic minority women. Only one of the interaction terms with unemployment rate is significant (although as with men it involves Black African women). *Figure 9* shows the predicted probabilities for our three time periods, the main story being that, in both generations, Black African, Black Caribbean, Indian and Pakistani/Bangladeshi women were all at greater risk of unemployment than were their White British peers.

Our main conclusions for women, therefore, are that

- just as in the case of men, the generational changes for women have been rather small or non-existent with the same pattern of large ethnic penalties for the Black African, Black Caribbean and Pakistani/Bangladeshi groups in both generations;

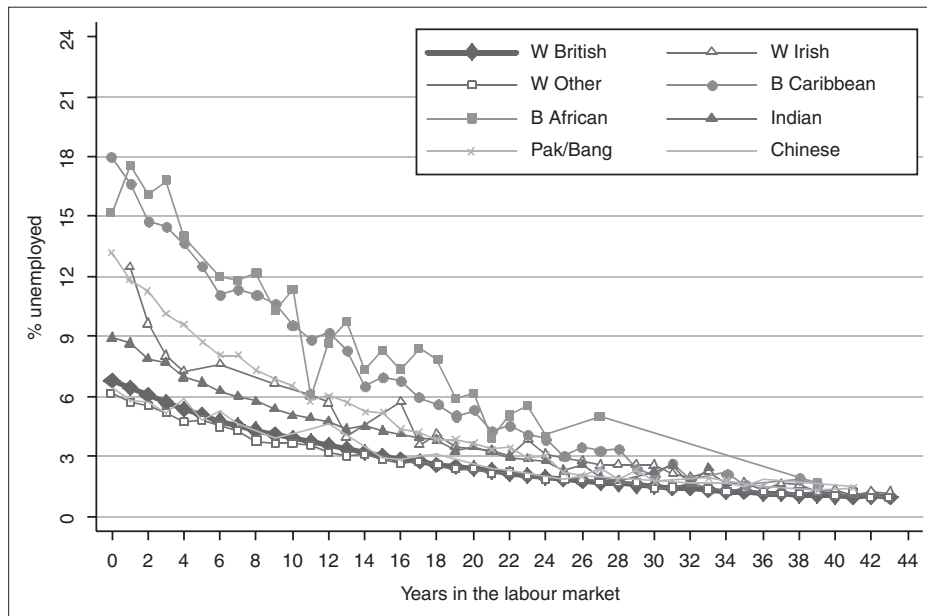
Figure 7: Predicted probabilities of unemployment for women: life cycle effects

Predicted probability of being unemployed for 1<sup>st</sup> generation women



For married women with secondary education (1997-2005).

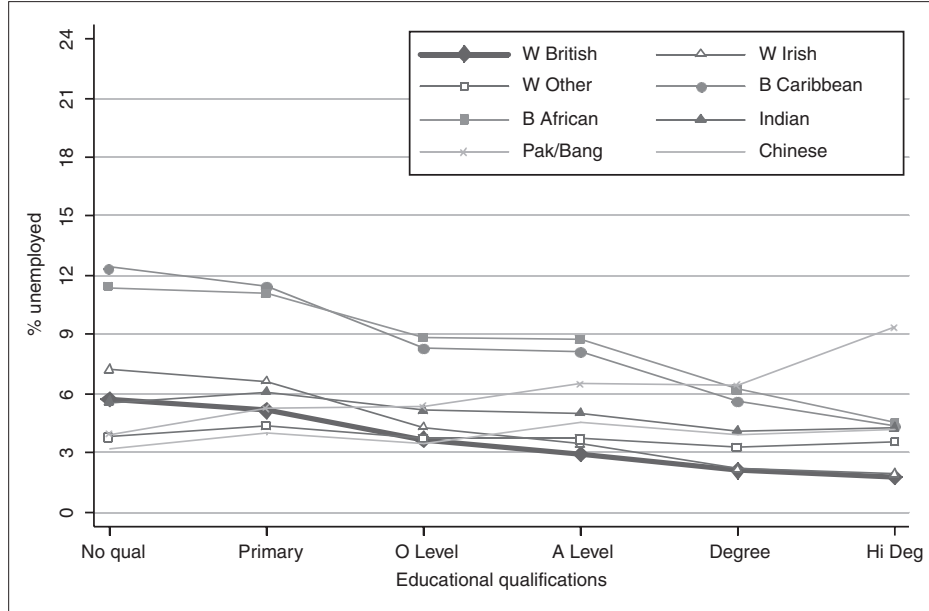
Predicted probability of being unemployed for 2<sup>nd</sup> generation women



For married women with secondary education (1997-2005).

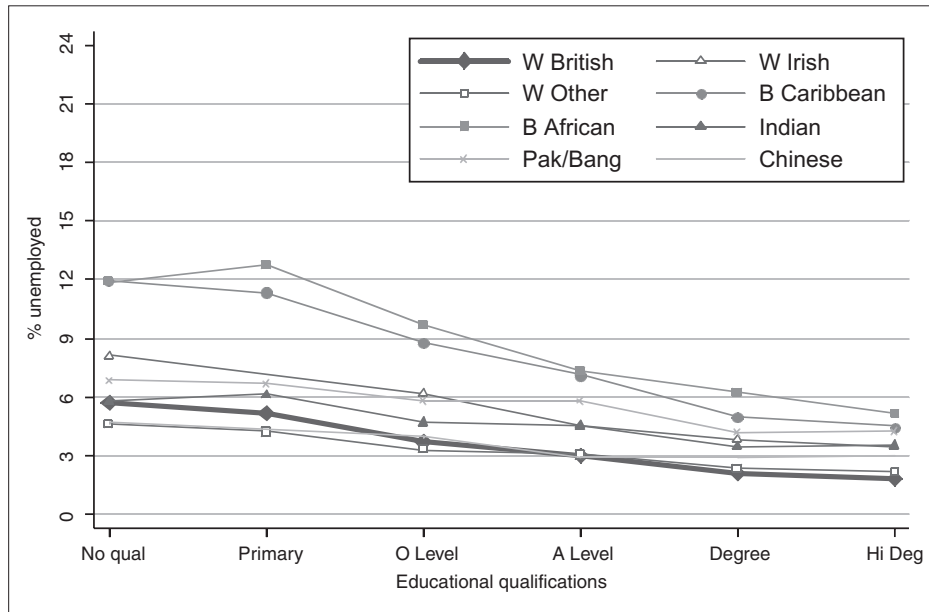
Figure 8: Predicted probabilities of unemployment for women: educational effects

Predicted probability of being unemployed for 1<sup>st</sup> generation women



For married women with 10-15 years' experience in the labour market (1997-2005).

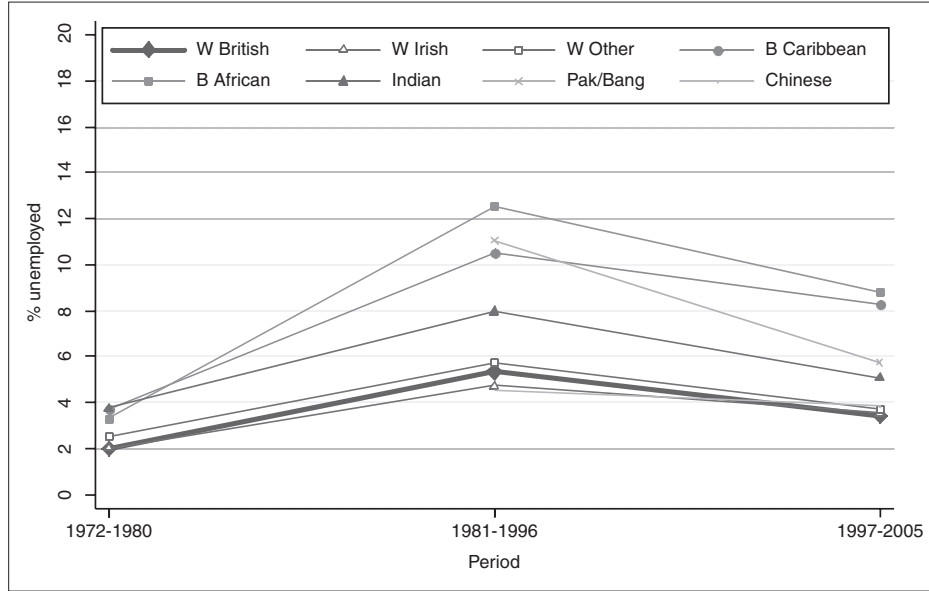
Predicted probability of being unemployed for 2<sup>nd</sup> generation women



For married women with 10-15 years' experience in the labour market (1997-2005).

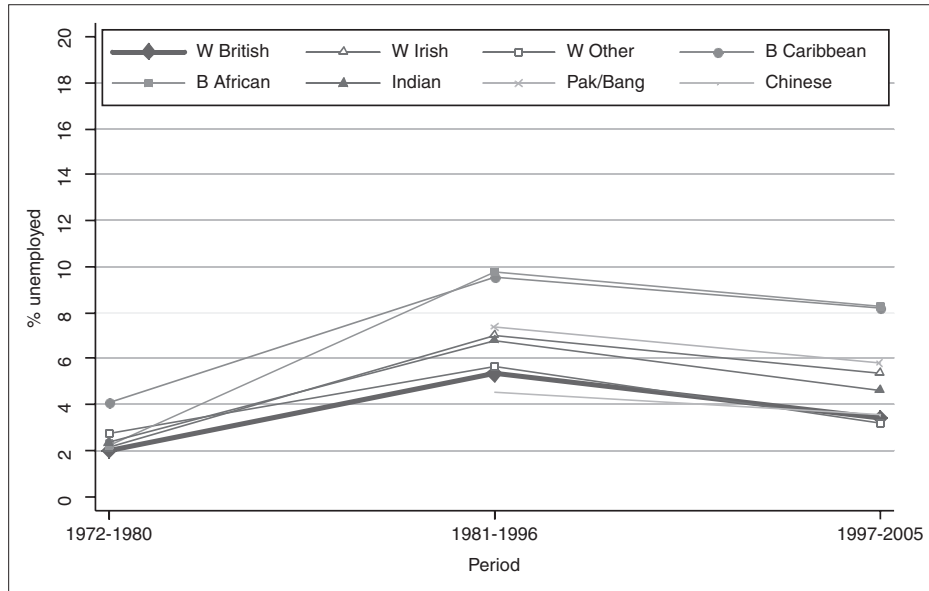
Figure 9: Predicted probabilities of unemployment for women: period effects

Predicted probability of being unemployed for 1<sup>st</sup> generation women



For married women with secondary education and 10-15 years in the labour market.

Predicted probability of being unemployed for 2<sup>nd</sup> generation women



For married women with secondary education and 10-15 years in the labour market.



- as with men, the first-generation women tend to have lower returns to education than do their White British peers, but in some cases this is associated with low risks of unemployment (perhaps associated with the enclave economy) for poorly-qualified minority women;
- as with men, there has been no general narrowing of the gap over historical time;
- but unlike the case of minority men, first-generation minority women seem to have the same life-cycle pattern of unemployment risks as do the White British.

#### *IV. Discussion*

We have, in this paper, used the most authoritative data source from the GHS/LFS with all key variables standardised and the data spanning a long period of thirty-four years. We have focused on the unemployment risks experienced by first and second generation minority ethnic groups in the British labour market. Our analysis has been conducted in the framework of disclosing life cycle, generation and period effects, and the ways in which these vary for the different minority groups, while also taking into account indicators of human capital.

Perhaps the most striking conclusion is the persistence of substantial ethnic penalties for migrants and their descendants, both men and women, of Black African, Black Caribbean, Pakistani and Bangladeshi ancestry. In contrast the White Irish, White Other and Chinese groups experienced little in the way of ethnic penalties (and little change over time). The Indians fell in between, although generally with rather modest disadvantages compared to their White British peers.

It is particularly noticeable that, for the three main disadvantaged groups, there was no sign whatsoever of inter-generational improvement nor of any progress across historical time. In the case of life-cycle processes we even found rather surprising but compelling evidence of “falling behind” rather than catching up for the first generation men. However, we did see evidence of what might be termed convergence across generations in two respects: the second generation tended to have similar returns on their education, and similar life-cycle profiles, as did the White British. To be sure, this also meant that the disadvantaged Black Africans, Black Caribbeans and Pakistanis/Bangladeshis were more or less equally disadvantaged, relative to the White British, at all stages of the life cycle and at all levels of education.

The absence of any generational improvement is particularly surprising, given the advantages that the second generation have over the first in terms of language fluency and British qualifications. One possibility here is that lack of language fluency or British qualifications were partly compensated for, at least with respect to employment, by the willingness of the migrant generation to take low paid jobs or to work in the enclave economy. A possible explanation for the failure to catch up across generations might be that the first generation had what economists term lower “reservation wages” than the native-born British. These low reservation wages would have masked their other disadvantages in the labour market such as lack of fluency in English, lack of British qualifications, and so on. However, the second generation will likely have similar expectations to their White British peers and similar conceptions of reservation

wages. In other words, the first generation, particularly members of the migrant labour groups, may not have expected to be treated in the same ways as the White British or to have the same opportunities, and their comparative reference group might be their families, co-ethnics and peers in their country of origin. But this will not hold for the second generation, who will expect to be treated like their White British peers. Changing frames of reference between the first and second generations may therefore help to explain the absence of inter-generational progress.

The absence of any “catching up” over the life cycle of the first-generation men is one of our most striking and unexpected findings, and is in contrast to the usual finding of catching up in terms of income over the life cycle. Again, however, we can perhaps make sense of it in terms of the distinctive frames of reference of the labour migrants. Changing frames of reference might also explain some of the life cycle processes. Just as the second generation might come to have different frames of reference from the first generation, so might the first generation develop different frames of reference the longer they remain in Britain. Expectations about the kind of wage that was acceptable might gradually assimilate to that of the White British the longer they remained in Britain. It should also be noted that there might be some selection effects, since we do not have an actual panel study, with some new migrants later returning to their countries of origin and those who remained longer in Britain being perhaps less oriented to their home countries and with higher reservation wages. Length of residence might also increase familiarity with, and eligibility for, the British social security system and the ability to secure benefits when out of work.

Turning to trends over historical time, we suggested in the introduction that we might expect some narrowing of gaps over time because of the passing of anti-discrimination legislation and the gradual development, especially among younger people, of tolerance and an ethos of multiculturalism. But the anticipated narrowing of the gaps over historical time has not occurred. This suggests that legislation, official ethos and indeed public attitudes may be very weak drivers of change.

In addition, it may well be that any improvement in the treatment experienced by minorities has been matched by rising expectations on their part about the standards of fair treatment to which they are entitled. Legislation outlawing racial discrimination may not only affect the behaviour of white employers but may also affect the expectations of minority workers. Increased contact between minorities and majorities may increase tolerance but may also lead to a convergence in expectations. In other words, there may be a revolution of rising expectations over time.

In the introduction we suggested that, partly on the basis of American experience, we might expect to find differences in the rates at which various minorities caught up across the life cycle, across generations and across historical time. In particular we expected that culturally more distant groups (for example those where many members lacked fluency in the English language) would experience less progress across the life cycle, that groups with lower levels of human capital (for example migrant workers from less developed countries) might make lower progress across generations and that Muslims in particular might make less progress across historical time because of the rise of anti-Muslim sentiment among the white majority.

In practice, however, we found very few significant interactions between ethnicity and these life-cycle, generational or historical processes. While Pakistani/Bangladeshi men did in fact fare worse in the second generation than in the first (unlike all the other groups where there was no significant difference between first and second generations), the difference was as *Figure 2* shows substantively very small. While the difference is in the predicted direction, the much more important part of the story is the continued presence of major ethnic penalties for Black Caribbeans and Black Africans as well as for Pakistanis and Bangladeshis in both generations.

Even more strikingly, we found no evidence at all that the main Muslim group of Pakistanis and Bangladeshis has fallen behind over historical time. To be sure there was some evidence that the situation had worsened for Black Africans, some of whom will be Muslims, but a more plausible interpretation is that there had been compositional changes within this heterogeneous group.

Only in the case of life-cycle processes and returns to education, and then only really for first-generation men, do we find clear evidence of ethnic-specific processes at work. The key finding is one of persistent disadvantage for Black Africans, Black Caribbeans and for Pakistanis and Bangladeshis at all stages of the life cycle, at all levels of education and in all three time periods.

How are we to account for these patterns? One possibility is that there is more discrimination against the Black Africans, Black Caribbeans and Pakistanis/Bangladeshis than there is against Indians and Chinese. It is likely that racial discrimination is wide-spread in Britain, but it is not at all clear that Indians suffer less discrimination than Pakistanis. While there have been no recent field experiments that would permit a rigorous test of this, self-report evidence indicates that Indians, Black Caribbeans and Pakistanis experience rather similar levels of discrimination (Heath/Cheung 2006). We think it is more likely, then, that the Indians and Chinese have other features, perhaps community structures and enclave economies, that allow them to offset discrimination.

As we have noted throughout this paper, processes may operate rather differently for the classic migrant worker groups and for other groups who were “human capital rich”. While all groups alike probably include some less-skilled migrant workers, it is probably fair to say that both the Chinese and Indian groups included proportions of highly-qualified migrants and of entrepreneurs who could take the lead in developing ethnic enclave economies. This would have been particularly true for the East African Indians many of whom held dominant positions in the African economy prior to independence and were expelled from these countries following independence and Africanization. Both Indians and Chinese may thus have benefited from ethnic enclave economies which might have provided the employment opportunities denied to members in the wider economy.<sup>3</sup>

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<sup>3</sup> Further analysis confirms this hypothesis. Constructing a variable for annual proportion of non-White self-employed by region as a contextual variable for ethnic enclave and including this in an interaction with ethno-generation, we find, controlling for all other variables in Model 6, that where there is a high concentration of ethnic entrepreneurship, second-generation Indian men were less likely to be unemployed whereas the two Black groups and the Pakistani/Bangladeshi men of both generations were, if anything, more likely to be unemployed. Data are not presented but are available on request.

In addition, the fact that Indian and Chinese communities are socially and occupationally more diverse, with highly qualified members as well as low skilled ones, may have other benefits for their members in addition to the provision of employment opportunities in ethnic businesses. Wilson has powerfully suggested the importance of community leaders and community structures in the context of African American disadvantage and recent discussions of social capital suggest further possible mechanisms. Our focus here would not be so much on the social capital that bridges the minority/majority divide as on that which, within the ethnic community, bridges high-skilled and low skilled members and hence can provide assistance to the more disadvantaged members of the community.

#### *Appendix 1: Variable construction in the GHS/LFS*

As noted in the text, we pooled together all the GHS and the LFS datasets available in the UK Data-Archive (up to Jan. 2007). Thus all the GHS datasets from 1972 to 2005 and all the LFS datasets from 1983 to 2005 were used (there were insufficient ethnic data in the earlier years of the LFS). The LFS became quarterly with a panel structure from the spring season of 1992 onwards. As Wave 1 data are obtained from face-to-face interviews (Waves 2-5 were telephone interviews with about 30 percent proxy answers), the data are presumably more reliable. We pooled all wave 1 data in each season of each year from 1992 to 2005 and sorted out the files by year. Altogether, 110 datasets were used in the GHS/LFS series. The pooled data set has around 4.7 million records with nearly 420 thousand minority ethnic members. This, to our knowledge, is the largest, most systematic, and most carefully-constructed data source ever assembled covering a long period of thirty-four consecutive years, with all the key variables coded to be consistent over time.

The construction of COT (consistent over time) variables for the GHS/LFS surveys was an exceedingly difficult and time-consuming task, demanding meticulous care to detail. This is because 110 datasets were involved and most of them used different coding schemes in the original data sets. Sometimes, the variable names lack any indication of the content (such as var28 for sex in GHS 1983). Frequently, many seemingly similar variables were available for a theme of interest and one had to inspect the questionnaire, coding and patterns in the adjacent years to find out exactly which of these were to be used. Every key variable in every dataset thus had to be thoroughly checked and the results recorded. Tens of hundreds or even thousands of hours were spent on finding out each of the key variables and their categories in the original data sets, and to be coded in a harmonised way.

The variables selected for standardisation were those that we deemed to be essential for our analysis, such as ethnicity, generation status, age, marital status, educational qualifications, employment status, class, earnings from the labour market, number of children in family unit, limiting long-term illness, and hours of work. For ethnicity, we differentiated nine main groups: White British, White Irish, White Other, Black Caribbean, Black African, Indian, Pakistani/Bangladeshi, Chinese and Other (including "Mixed"). This kind of differentiation is more detailed than is available in most existing research on ethnic relations using quantitative data and it has enabled us to conduct a thorough investigation of the economic situation of the various minority ethnic groups in Britain in the period covered. The ethnicity variable, combined with the generation variable discussed in the text, produced the 17-category variable on ethno-generation used in this paper. With regard to years in the labour market, we used the formula  $[\text{yearlm} = \text{age} - \text{tea}]$  where tea (terminating education age) is set at 16 for people with less than or equal to O Level or equivalent, 18 for people with A Level or equivalent, 22 for people with first degree and 25 for people with higher degrees (Masters and/or PhDs).

We would like to take this opportunity to thank Jane Roberts, Nuffield College, Oxford University, for coding some of the data in the earlier GHS series.

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