Persisting disadvantages: a study of labour market dynamics of ethnic unemployment and earnings in the UK (2009–2015)

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ABSTRACT

This paper investigates the ethnic dynamics of unemployment and earnings in the UK. Drawing on data from the first six waves of Understanding Society, the UK Household Longitudinal Study (2009–2014), the analysis shows that ethnic minority members, particularly black African, black Caribbean, Pakistani and Bangladeshi minorities, face much higher risks of unemployment and have much lower levels of earnings than do their white British counterparts over the life course. Ethnic minorities are not only more likely to face unemployment, previous experiences of unemployment also carry more enduring scars for them than for the majority group in terms of reemployment and pay. Even with similar levels of prior unemployment, ethnic minorities are more susceptible to delayed re-entry and wage penalties than are their white British peers. The life-course trajectories in unemployment and lower pay, coupled with unemployment scarring, suggest cumulative ethnic disadvantages in the UK.

KEYWORDS

Unemployment; earnings; scarring effects; growth-curve modelling; UK

Introduction

A great deal of research has been conducted in the UK, showing marked disadvantages faced by ethnic minorities, in education, housing, poverty, health and labour market positions (Cabinet Office 2017). The most salient disadvantages are found in terms of economic inactivity, unemployment/underemployment, and lower pay, with particularly high rates of unemployment experienced by young people from some ethnic minority groups during the economic downturns of the mid-1980s, early 1990s and the most recent one that started in 2008, and lower levels of earnings when in paid employment (Berthoud 2000; Dustmann et al. 2003; Platt 2006; NEP 2007; Heath and Li 2008; Li and Heath 2008, 2010, 2016; Nandi and Platt 2010; Zucotti and Platt 2016).

Such disadvantages are an enduring concern for social science researchers, government decision makers and wider society. As several commentators (Heath and Brinbaum 2014; Green 2017; Li 2018) point out, the persisting inequalities experienced by ethnic minorities run counter to the principle of equality of opportunity as enshrined in the law,
and to the ideal of meritocracy adhered to in liberal democracies where ascriptive factors such as family background, sex or ethnic origins should have no role to play and where only talent and hard work should account for personal success. Ethnic (racial) injustices such as entailed in the disproportionate risks of unemployment are also a waste of human creativity, a hindrance to national prosperity, and an obstacle to social inclusion. Indeed, both Labour and Conservative parties have, when in power, implemented policies aimed at tackling ethnic disadvantage (Cabinet Office 2001, 2003, 2017), but the inequalities have proved quite intractable. In her speech launching the website *Ethnicity Facts and Figures*, Prime Minister Theresa May said on 12 Oct. 2017 that we as a society must ‘explain or change’ persistent ethnic inequalities. (That is, if inequalities could not be explained by legitimate job-relevant factors such as skills and training, then they need to be addressed and eliminated.) This paper seeks to make a contribution by investigating ethnic disadvantages in unemployment and pay over the life course and the scarring effects of unemployment on subsequent chances of employment and on wages. We use the most authoritative data source currently available, namely, Understanding Society: the UK Household Longitudinal Study (UKLHS).

Most existing research on ethnic disadvantage is based on cross-sectional data, whether from the censuses or social surveys. Such research is of great value in demonstrating the disadvantages faced by members of ethnic minority backgrounds. For instance, using the pooled data from the General Household Surveys from 1972 and the Labour Force Surveys from 1983 onwards, Li and Heath were able to show that people of ethnic minority heritages, especially black men aged around 16–24, tend to face disproportionately high levels of unemployment during economic downturns, sometimes reaching over forty per cent, three to four times as high as for whites (Li and Heath 2008; Heath and Li 2008; Li 2010). Ethnic minorities are also less likely to find themselves in professional-managerial positions (Li and Heath 2010; Li 2018), and tend to receive significantly lower pay than their white peers (Li 2012; Breach and Li 2017). Similar findings are reported in Platt (2006), Nandi and Platt (2010), Brynin and Güveli (2012) and Hills et al. (2015). Employer bias and discrimination against members of ethnic minority origins may underlie part of the ethnic inequality (Wood et al. 2009). Many of the first generation ethnic minorities (especially those who migrated to Britain as adults) may have poor English, disrupted social networks and poor knowledge of the local labour market, and live in deprived local environment. All of these may have negative impacts on employment chances and opportunities for well-paid jobs (Zucotti and Platt 2016). However, even in the second generation, when English language fluency is achieved, many minorities are still found to face disadvantage in employment, occupation and earnings (Heath and Li 2008). Disadvantages net of socio-demographic characteristics are called ‘ethnic penalties’ (Heath and McMahon 1997, 91). Many studies have shown continuing ethnic penalties in British society in spite of the government Race Relations and Equality Acts and policy initiatives that have been enacted in the last few decades.

While ethnic studies have shed light on many important domains of socio-economic life from education to social mobility, most existing analyses are based on cross-sectional data, which have shortcomings, most notably their inability to track changes in people’s lives. It is well recognised that people’s behaviours are path-dependent (Arulampalam, Gregg, and Gregory 2001). Such dependency may be multi-, inter- or intra-generational.
With specific regard to labour market position, one may expect that previous experiences of unemployment may exacerbate one’s current disadvantages, making it more difficult for people who were unemployed in the previous year to find a job now. Equally, one may expect that successive unemployment spells also matter, as those with long-term or frequent unemployment may find their firm-/job- specific skills depreciated, which may send a negative signal to potential employers about their commitment to the labour market, making it more difficult to convince employers of their employability. Repeated unemployment thus has a cumulative effect: the longer one remains workless, either unemployed or inactive, the weaker one’s employment potential (Arulampalam 2001; Gregg 2001; Gangl 2006; Bell and Blanchflower 2010). This contrasts with a ‘Markovian’ situation (Singer and Spilerman 1976) where incidences of unemployment have little ‘memory’. Using a large and representative panel survey (NESP/ND-JUVOS) of British men, 1984–1994, Gregory and Jukes (2001) show that for young men and the low-paid, incidence (but not duration) of unemployment has only a temporary effect, with a wage penalty of 10% on reemployment, but for prime-age and highly paid men, the wage penalties are more permanent and much higher. The reason for this may be that in a slack labour market when so many young people could not find a job, incidence of unemployment may suggest, in the eye of employers, less about employability of young people than for those in the prime of life.

Overall, while social scientists have conducted much research on ethnic disadvantages in the UK labour market, most studies are based on cross-sectional data. These studies contain abundant information on ethnic differences but little information on life-course dynamics. To be sure, there are a small number of studies based on panel data. However, although these studies have rich detail of unemployment scarring, they contain negligible information on ethnic differences. This is due to earlier panel surveys having limited numbers of ethnic minorities, forcing researchers either to ignore ethnicity (Gregory and Jukes 2001) or to use an aggregate form of ethnic minorities in contrast with whites, obscuring inter-minority differences (Arulampalam 2001; Gregg 2001; Gangl 2006). Given this, an important research gap exists on ethnic dynamics in the UK labour market, particularly with regard to life-course trajectories in unemployment and earnings, and to unemployment scars on subsequent unemployment and earnings. The present analysis aims to fill this research gap. More specifically, we wish to identify whether employment trajectories differ between minorities and majority, and whether unemployment scarring has more impact on ethnic minority members than on the majority population.

To address this research question requires panel data with large sample sizes for each of the main ethnic minority groupings. The UKLHS serves this purpose very well. It has a panel structure, a large sample size, and an ethnic minority boost, which enables us to analyse the labour market experiences of each of the main ethnic minority groups and, furthermore, to assess the cumulative effects of earlier experiences on subsequent successes or setbacks in the labour market. It is noted here that, with only six waves of data available at the time of analysis, we cannot address long-term scarring effects extending from youth unemployment to mid- or later working lives as afforded by the longer-running cohort studies (Gregg 2001). Yet six consecutive waves provide a sufficient period to enable dynamic analysis and, by pooling results from people of different age spans, we can get a picture of dynamics at different stages of the life course.
The present analysis uses multilevel (growth-curve) models to explore the dynamics of ethnic minority vulnerability to unemployment and pay penalties. In particular, we seek to address the following questions:

- What is the magnitude of ethnic penalties in unemployment and earnings over the life course, and which groups suffer the most?
- For those with prior histories of unemployment, does the incidence of unemployment involve greater vulnerability to future unemployment for ethnic minorities than for the majority group? If so, what is the extent of the ethnic differential? And does an increasing number of unemployment spells entail more adverse consequences for ethnic minorities than for the majority?
- Similarly, what is the extent of ethnic penalties in subsequent wages as a result of scarring from unemployment?

**Data and methods**

This paper uses data from waves 1–6 of Understanding Society: the UK Longitudinal Household Study (University of Essex 2018; see Platt and Nandi 2020 for more detail on the data source). To focus on ethnic differences in unemployment risks and labour-market earnings, we confine the analysis to the working-age population in each wave, namely, men aged 16 to 65 and women aged 16 to 63, excluding full-time students and those with no valid information on ethnicity. For both outcomes of interest, we conduct descriptive analysis and then estimate growth-curve models, exploiting the fact that our respondents are followed over six years.

We specify two-level linear growth models to estimate the life-course effects on unemployment and labour-market earnings over the six-wave period (from 2009/2010 to 2014/2015), and to address issues of heterogeneity in these trajectories by time-constant and time-varying covariates. The models are specified as follows.

**Level-1 model:**

\[
y_{ti} = \beta_{0i} + \beta_{1i}(\text{Age}_{ti} - \bar{\text{Age}}_{i}) + \beta_{2i}(\text{Age}_{ti} - \bar{\text{Age}}_{i})^2 + \sum_{j=1}^{n} \delta_j X_{ij} + \sum_{k=1}^{m} \varphi_k Z_{ti} + \epsilon_{ti} \tag{1}
\]

**Level-2 model:**

Model for the intercept:

\[
\beta_{0i} = \gamma_{00} + \gamma_{01}\text{Ethnicity}_{i} + \mu_{0i} \tag{2}
\]

Model for the linear rate of change (age):

\[
\beta_{1i} = \gamma_{10} + \gamma_{11}\text{Ethnicity} + \mu_{1i} \tag{3}
\]

where the outcome variable \((y_{ti})\) pertains to people’s labour-market situations over the life course or subsequent changes in terms of (1) unemployment risks, defined as unemployment among the economically active \((u\_rate_{ti})\), or (2) wage levels, defined as the natural log of hourly pay for employees \((\ln\_earning_{ti})\). We exclude from the analysis the earnings of the self-employed, which are quite unstable and are sometimes negative. Hourly pay is
measured as gross earnings (monthly wages/salaries) in the month prior to interview divided by the usual hours worked per month deflated to 2009/2010 prices. We use the log form of earnings in modelling but the antilog of the estimates in the graphic presentation for interpretation.

Both outcomes of interest are modelled as a function of age (median centred for men and women respectively) and age-squared for individual i at time t, controlling for time-invariant and time-varying covariates. In this study, time-invariant variables include ethnicity, generational status and region, and time-varying covariates include marital status, health (whether or not the respondent has limiting long-standing illness), number of dependent children under the age of 16 in the household, full or part-time work, education, and the scarring effects of prior unemployment (number of unemployment spells starting from wave 1 up to the previous wave as reported at each interview). As the main focus is on ethnic dynamics in unemployment risks and earnings, and on the scarring effects of prior unemployment upon subsequent unemployment and wages, ethnic dummies Ethnicity, are included as the key variables predicting both the random intercept (β0i) and the linear rate of change with age (β1i), whose effects are then fully incorporated in the predicted values graphed on the figures. The first model characterises the individual growth trajectories with age, with the terms β0i, β1i and β2i representing the intercept, the linear rate of change and the quadratic rate of change with age respectively. Model 2 assesses inter-individual differences associated with ethnicity, with the coefficients denoted by γ0i. Similarly, γ1i are the coefficients for ethnic effects associated with the linear rate of change with age. The random within-individual error term, εti, is assumed to be normally distributed, and the level 2 residual random errors, µ0i and µ1i, are assumed to have a multivariate normal distribution. As the UKLHS has only six waves at the time of analysis, we do not attempt to assess period or cohort effects in this paper although we do explore scarring effects as they unfold across the waves or over the unemployment spells. We analyse the data for the working-age groups, namely, for men aged 16–65 and women aged 16–63 in each wave excluding full-time student (observations being 92,724 for men and 110,154 for women).

With the restrictions as earlier noted, all non-student respondents with valid ethnic identities in the six waves, including those ‘rolled-in’ from the British Household Panel Survey (BHPS) from wave two onwards, are included in the analysis, resulting in an unbalanced data structure which can be effectively analysed in a person-year manner (Raudenbush and Bryk 2002).

In this study, ethnicity is coded as a ten-way variable: white British, white Irish, white Other, black Caribbean, black African, Indian, Pakistani, Bangladeshi, Chinese, and Other. The ‘Other’ group includes a very small number of Gypsies and Irish Travellers, 59 person-years, or 0.03% of the analytical sample. As the ‘Other’ group is heterogeneous, it is not our analytical focus. Generational status is coded as a three-way variable, with first- and second- generations referring to whether the respondent was born abroad or in the UK, plus a third, residual, category with ‘missing/do not know’ responses (1.3% in the analytical sample). The variable for region has 12 categories, as per government office regions.

As people’s socio-economic circumstances may change over the years, we include time-varying covariates. Marital status is coded as a three-way variable: single, married/partnered and other (separated, divorced and widowed); health status is measured by
whether the respondent has limiting long-term illness; education is a six-category variable of highest educational qualifications: (1) first-degree or above, (2) sub-degree including professional qualifications such as teaching and nursing below degree, (3) higher secondary (A-Level or equivalent), (4) lower secondary (GCSE or equivalent), (5) primary and (6) no formal educational qualifications; and cumulative disadvantage in the labour market is, as discussed above, measured by creating a variable that summarises all incidences of unemployment in the preceding waves up to the previous one (Arulampalam 2001). By interacting ethnicity and cumulative disadvantage, we address the question of whether the cumulative unemployment spells may carry a heavier and stickier penalty for ethnic minorities than for the white British. It is noted here that it is incidence or number of spells of unemployment during the first six waves of the UKHLS rather than the complete history (or duration, as measured in days) of unemployment experienced during the respondent’s entire work life that is being measured here. For analysis using the duration approach, see Longhi (2020).

Results

We first present our findings on unemployment, and then on earnings. We start with the shape of unemployment over time (across the six years and in the life course) by ethnicity and sex.

**Ethnic differences in unemployment over the life course**

The data in Table 1 show the unemployment rates for men and women by wave. The last column shows the overall rate for each ethnic group. Our data capture the unemployment risks in the immediate aftermath of the economic recession which started around 2008. For men, the rates were at 12% in wave 1 (2009) and then gradually declined to 8% in the last wave in our data. Similar patterns were shown for women although at lower rates, starting at 9% in wave 1 and ending at 7% in wave 6. The patterns are fairly close to official figures based on the Annual Population Surveys (Cabinet Office 2017, Figure 5.1), although different ethnic categories and different measures of unemployment are used in that report, and data on the two sexes were combined.

The data on gross ethnic differences in Table 1 show two main features. Firstly, most ethnic minority groups were more, and some much more, likely than white British to be unemployed. Thus while the overall unemployment rates for men and women across the six waves were 10% and 8% respectively, nearly a quarter (24%) of black Caribbean men and over a quarter of Pakistani women (26%) were unemployed. Black African, Bangladeshi and Pakistani men were around twice or one and half times as likely to experience unemployment as white British men, and black and Pakistani and Bangladeshi women were two or three times as likely to face unemployment as white British women. It is also noted here that white Irish men are much more likely than white British to be unemployed in terms of gross differences. Our more refined analysis in the following sections enables us to identify whether people of white Irish heritage face ethnic penalties to any significant extent. People from other white backgrounds do not seem to differ from the white British to any notable degree. If anything, men from this group seem less susceptible to unemployment than white British men.
The other feature that emerges from Table 1 is the apparent ‘stickiness’ of ethnic minority unemployment. In the immediate aftermath of the recession, 26% of black Caribbean men, and 21% of black African men, were unemployed, which is around 2.5 and 2 times as high as that for white British men. Pakistani and Bangladeshi women’s unemployment rates (29 and 25% respectively) were over three times as high as for white British women (8%), and the two black female groups’ unemployment rates were over twice as high. Yet, when the economic situation began to improve and when white British men and women’s unemployment rates began to fall, some ethnic minority groups found their unemployment rates unchanged or even rising. For instance, while 13% of Bangladeshi men were unemployed in wave 2, the rates climbed to 18% in wave 3 and 20% in wave 4. Similarly, while 22% of Pakistani women were unemployed in wave 2, the rates rose to 26% in wave 3 and 30% in wave 4. Black Caribbean men and women’s unemployment rates also increased from wave 1 to wave 3 while the rates were falling for white British men and women. These features are similar to the very high rates of unemployment experienced by ethnic minorities in the mid-1980s and early 1990s. As Li and Heath (2008) showed, during those recessions, people of ethnic minority backgrounds, particularly black and Pakistani / Bangladeshi minorities, bore the brunt of recession, being the first to face job cuts and the last to find re-employment (see also Leslie and Lindley 2001; Lindley 2005).

The patterns shown in Table 1 are striking but there are a number of possible socio-geographic-demographic factors that could underlie the observed differences. For instance, people of ethnic minority heritages might be younger, less educated, living in more deprived areas or having worse health conditions than white British, which could

| Wave | 1 | 2 | 3 | 4 | 5 | 6 | (All) |
|------|---|---|---|---|---|---|-------|
| **Men** |   |   |   |   |   |   |       |
| White British | 11.1 | 10.7 | 10.0 | 9.6 | 8.6 | 7.5 | 9.7 |
| White Irish | 12.2 | 12.0 | 10.7 | 13.0 | 18.8 | 14.7 | 13.3 |
| White Other | 9.6 | 9.9 | 6.2 | 4.8 | 5.2 | 6.7 | 7.4 |
| Black Caribbean | 26.1 | 25.8 | 28.3 | 23.5 | 22.8 | 15.4 | 24.1 |
| Black African | 20.8 | 21.9 | 17.4 | 16.3 | 13.2 | 13.1 | 17.5 |
| Indian | 11.0 | 9.9 | 8.5 | 7.5 | 6.9 | 8.2 | 8.9 |
| Pakistani | 16.2 | 12.9 | 15.7 | 10.4 | 10.8 | 14.2 | 13.6 |
| Bangladeshi | 14.6 | 12.6 | 18.3 | 20.2 | 15.4 | 10.3 | 15.2 |
| Chinese | 3.9 | 1.0 | 0.0 | 0.9 | 3.3 | 6.2 | 2.6 |
| Other | 16.8 | 12.5 | 14.3 | 14.0 | 12.3 | 9.7 | 13.4 |
| **Women** |   |   |   |   |   |   |       |
| White British | 8.1 | 7.3 | 7.3 | 6.7 | 6.6 | 6.3 | 7.1 |
| White Irish | 9.4 | 10.2 | 6.7 | 5.8 | 6.0 | 4.6 | 7.4 |
| White Other | 8.4 | 8.0 | 7.3 | 6.8 | 4.7 | 8.5 | 7.4 |
| Black Caribbean | 17.4 | 16.0 | 18.8 | 14.6 | 11.8 | 13.9 | 15.6 |
| Black African | 17.9 | 17.4 | 18.6 | 14.5 | 13.8 | 13.7 | 16.1 |
| Indian | 11.9 | 7.4 | 7.6 | 10.5 | 7.4 | 8.3 | 8.9 |
| Pakistani | 28.5 | 22.0 | 26.0 | 29.8 | 25.8 | 24.2 | 26.0 |
| Bangladeshi | 25.2 | 24.9 | 16.3 | 18.5 | 18.0 | 19.3 | 20.5 |
| Chinese | 12.1 | 4.8 | 8.2 | 8.6 | 2.9 | 4.7 | 7.1 |
| Other | 15.0 | 14.7 | 14.1 | 11.9 | 9.3 | 11.4 | 12.8 |
| **(All)** | 8.8 | 7.9 | 8.0 | 7.4 | 6.9 | 7.0 | 7.7 |

Notes: Weighted analysis.
Source: The United Kingdom Household Longitudinal Study.
reduce their employment opportunities. We need to compare like with like. Therefore, we conduct multilevel (growth-curve) models controlling for the time-varying and time-invariant covariates as discussed above. Given the number of covariates, we do not present the full tables, but summarise the main effects as follows. Net of all other factors controlled for in the models, black African, black Caribbean, Bangladeshi and Pakistani men’s unemployment rates are 12.1, 11.8, 11.0, 4.0 percentage points higher than those for white British men, and the figures are 16.6, 16.4, 6.5 and 6.2 percentage points higher for Pakistani, Bangladeshi, black African and black Caribbean women than for white British women. All these differences are significant at the 0.001 level. On the other hand, white Irish and white Others are very close to white British in their unemployment rates, and Indians are only slightly more vulnerable than, whilst Chinese are no different from, white British in the risks.

To further reveal the ethnic dynamics in unemployment, we show the life-course trajectories in Figure 1, with data derived from the full models. Figure 1 shows that young people are highly vulnerable to unemployment. For men between ages 16 to 21, a large proportion from all ethnic groups are unemployed, and there are clear ethnic differences, with around half of the black groups and 60% of Bangladeshis being jobless as compared with around 30% of white British young men. The rates fall quickly with age for white British men so that, after age 30, their rates remain below 10%. The rates for black Caribbean men remain around twice as high as for white British men for most of their careers and, in the last ten years of their working lives (ages 56–65), over three times as high. The line for Bangladeshi men rises even more abruptly than for black Caribbean men after age 40.

We noticed in Table 1 that white Irish men have greater risks of unemployment than white British men. The data in Figure 1 show clearly that the differences are fairly small from the years of ‘occupational maturity’ (around age 35) onwards but quite marked at the beginning of their careers. At around ages 16–24, white Irish men’s unemployment rates are around 15–20 percentage points higher than for white British men. Other things being equal, white Other men are somewhat less likely to face unemployment than white British men, a situation shared by Chinese men.

The shape for women’s unemployment is similar to that of men, with the exception that from around age 45 onwards, Pakistani and Bangladeshi women’s unemployment rates start to be on a steady rise while the rates for most other groups keep falling. Pakistani/Bangladeshi women’s unemployment profile is of a U shape and is clearly different from that of the other groups which evinces a clear trend of convergence towards reduced differences over the life course (the numbers are fairly small for the two groups: under 20 for Pakistani women at each age after age 48 and for Bangladeshi women after age 40). From around ages 25 to 55, there is little difference between Chinese, Indian and white women. Overall, the life-course effects show a three-tiered structure: Pakistani and Bangladeshi as the most disadvantaged, followed by the two black groups and the ‘Other’ group, with the three white groupings and Indian and Chinese being relatively advantaged, a pattern roughly similar to that of men.

**Ethnic differences in effects of unemployment scarring**

It is generally held that unemployment, especially that of a repeated or long-term kind, is detrimental to people’s socio-economic life: it not only reduces one’s income, but also
damages career development as people may gradually lose job-specific skills, lower their aspirations and weaken work commitment. While the thesis of unemployment scarring is not controversial, little research is available on the differential effects on different ethnic groups. We have six waves of data and can explore the impacts. We created a lag variable on previous wave’s economic status, and another variable summarising all incidences of unemployment (as reported at time of interview) up to the previous wave. In the modelling process, we used the lagged employment status and the unemployment spells up to the previous wave in addition to all other socio-demographic variables that

Figure 1. Unemployment rates over the life course by ethnicity and sex.
were taken into account for Figure 1. This is the closest to testing the Markovian chain thesis which posits that controlling for the previous state, prior experience would have little influence on the current state. Our research questions in this regard are: holding constant all other factors, including previous wave’s employment status, does prior (or cumulative) unemployment history have a scarring effect and, if so, is the effect of a similar magnitude for all ethnic groups?

Figure 2 shows the scarring effects of prior unemployment on subsequent unemployment. Before we go into detail, there are two general points to note here. First, even people without prior unemployment experience may find themselves unemployed, which is especially true during the recession that our data cover. Second, since this study is not focused on unemployment histories, we do not assess the effects of prior unemployment histories on employment status in wave 1. Our main interest here is in ethnic differences in the consequences of prior unemployment from wave 2 onwards, net of the confounding factors. While this is less detailed than using complete unemployment histories, the employment situation as reported at time of interview would be more accurate and less error-prone than found in recall data. As our previous discussion has shown that the two black groups and Pakistanis and Bangladeshis are the most vulnerable, we focus on these four groups in comparison to white British in Figure 2. The lower cluster refers to the ethnic groups without prior unemployment and the upper cluster to those with at least one unemployment spell in the previous waves.

Figure 2 shows that men without (observed) unemployment experience generally fared well although we can also see that around 10% of the two black groups and Bangladeshis men were unemployed at wave 2, twice as high as for white British men. What is most striking is that, other things being equal, prior unemployment has a substantial impact on current unemployment. For instance, from Table 1 we know that 11% of white British men were unemployed at wave 1 and here we find that nearly 60% of them were still unemployed at wave 2. Overall, compared to those without prior unemployment experience, people with one or more prior unemployment spells are around five or six times more likely to face unemployment in the current wave.

What is of even greater interest in the present context is the ethnic differences in the scarring effect of prior unemployment. For each of the subsequent waves, black Caribbean and Bangladeshi men with prior unemployment experience are around 15 and 7 percentage points (respectively) more likely to be unemployed than white British men with the same unemployment histories. In other words, unemployed black Caribbean and Bangladeshi men would be around 10–15 percentage points behind white British men in finding re-employment.

The overall shape of scarring effects for women is similar to that of men, although the level of effects is lower. For those without prior unemployment experience, Pakistani and Bangladeshi women are more likely than their male counterparts to be unemployed at any given wave. The scarring effects are equally pronounced but the ethnic order is different from the male scenario. Here we find that it is Pakistani, and to a lesser extent, black African, women who are most likely to bear the brunt of unemployment scarring, with their unemployment rates around 20 percentage points higher than those for their white British peers.

The analysis provides little support for the thesis of Markovian chain effects in ethnic unemployment scarring. Rather, it shows both great salience of, and significant ethnic
differentials in, scarring. To pursue matters further, we now examine the ethnic differences in the number of unemployment spells. We have six waves, which yields a maximum of five prior spells of unemployment up to and including the previous wave. Very few (0.28%) of the person-years were spent in four or five spells. Hence we code a four-way variable, 0, 1, 2, and 3, with 3 indicating 3–5 spells. We then conducted the growth-curve models including the same main and control variables as for Figure 1. The fitted values, including the incorporated effects of random intercepts and slopes, are shown in Figure 3.

**Figure 2.** Scarring effects of unemployment on subsequent unemployment.
The data in Figure 3 show the cumulative disadvantage of prior unemployment spells. The more unemployment spells one has, the less likely one is to find re-employment. Thus around 10% of men with no unemployment experience in the six waves were found unemployed at a given wave on average, yet for those with three or more unemployment spells, around 50–80% were unemployed. Also notable are the ethnic differences in the cumulative disadvantages. Thus, black Caribbean men were around ten percentage points more likely to face unemployment than their white British peers at each level of prior

Figure 3. Scarring effects by unemployment spells on subsequent unemployment.
Notes: For unemployment spells, 3 refers to 3–5 (only 0.28% of the person-years were spent in four or five waves of unemployment).
unemployment, as were black African women relative to white British women (by around 5 percentage points). It is also worth noting here that Pakistani women were around 15 percentage points more likely to be unemployed than white British women at 1 unemployment spell, equally likely to be unemployed at 2 spells but more likely to exit from the labour market at 3 or more spells: perhaps they have by now become ‘discouraged’ workers.

**Ethnic penalties in earnings**

We start the earnings’ analysis by looking at the descriptive data. Table 2 shows hourly pay by ethnicity and sex. Looking at the last column, we can see that men earned on average £14.6 and women earned £11.9 per hour during the period. As the data are deflated, there very little sign of earnings increase over the waves, confirming previous research on post-recession earnings stagnation (Gregg, Machin, and Fernandez-Salgado 2014). The ethnic differences in earnings are less salient than in the unemployment risks as shown in Table 1, but a close look still reveals that the order of ethnic wage differentials is much the same as in the vulnerabilities to unemployment. Hence, we find that Pakistani men are paid the least, earning £10.6, or £4.1 less than white British men, on average. They are followed by Bangladeshi men, black Caribbeans and black African men at £11.8, £12.8 and £13.1 per hour, respectively. Women on the whole earned less than men, and the inter-ethnic differences among them are also smaller than among men. Thus the lowest earning group is Pakistani women, with £9.8 per hour, which is £2.1 less than white British women. Bangladeshi and black African women also earned less than average. White

| Wave | 1     | 2     | 3     | 4     | 5     | 6     |
|------|-------|-------|-------|-------|-------|-------|
| Men  |       |       |       |       |       |       |
| White British | 14.5  | 14.3  | 16.7  | 14.5  | 14.3  | 14.2  | 14.7  |
| White Irish   | 14.1  | 14.3  | 14.7  | 14.8  | 15.3  | 14.7  | 14.8  |
| White Other   | 14.8  | 14.9  | 14.5  | 14.8  | 15.3  | 14.7  | 14.8  |
| Black Caribbean| 13.8  | 15.6  | 12.6  | 10.8  | 11.1  | 12.5  | 12.8  |
| Black African | 12.8  | 13.5  | 12.4  | 13.9  | 13.2  | 12.5  | 13.1  |
| Indian        | 13.3  | 13.9  | 13.5  | 13.4  | 13.2  | 14.8  | 13.6  |
| Pakistani     | 10.0  | 10.0  | 10.7  | 12.3  | 10.3  | 11.0  | 10.6  |
| Bangladeshi   | 11.7  | 13.7  | 10.8  | 9.4   | 10.1  | 15.0  | 11.8  |
| Chinese       | 13.7  | 14.8  | 16.0  | 17.1  | 18.2  | 17.3  | 15.9  |
| Other         | 13.5  | 14.0  | 13.1  | 12.9  | 13.6  | 13.1  | 13.4  |
| (All)         | 14.3  | 14.3  | 16.2  | 14.4  | 14.2  | 14.1  | 14.6  |

| Wave | 1     | 2     | 3     | 4     | 5     | 6     |
|------|-------|-------|-------|-------|-------|-------|
| Women|       |       |       |       |       |       |
| White British | 11.3  | 11.6  | 13.4  | 11.5  | 11.9  | 11.7  | 11.9  |
| White Irish   | 12.9  | 12.0  | 12.1  | 12.6  | 12.2  | 11.0  | 12.1  |
| White Other   | 12.4  | 12.4  | 13.7  | 13.9  | 13.3  | 12.6  | 13.0  |
| Black Caribbean| 13.0  | 12.9  | 13.5  | 12.2  | 12.3  | 12.5  | 12.7  |
| Black African | 12.9  | 10.5  | 11.0  | 11.1  | 10.7  | 11.2  | 11.3  |
| Indian        | 10.8  | 10.8  | 10.9  | 11.9  | 13.6  | 11.6  | 11.5  |
| Pakistani     | 10.5  | 9.7   | 11.5  | 9.0   | 8.6   | 9.1   | 9.8   |
| Bangladeshi   | 8.8   | 11.9  | 11.8  | 10.7  | 10.2  | 10.4  | 10.6  |
| Chinese       | 11.8  | 12.9  | 13.5  | 13.2  | 13.9  | 13.2  | 13.0  |
| Other         | 11.4  | 11.9  | 12.0  | 10.9  | 11.5  | 11.8  | 11.6  |
| (All)         | 11.4  | 11.6  | 13.3  | 11.6  | 11.9  | 11.7  | 11.9  |
British women are not the highest earners. Several groups, including white Irish, white Other, black Caribbean and Chinese, earn more than they do.

People’s earnings are affected by many factors. In addition to those controlled for in the unemployment models, work-time and occupational position are crucial determinants. Full-time workers are on average paid more than part-time workers per hour and people in higher class positions tend to have higher earnings. Thus, in order to assess the earnings dynamics between ethnic groups, we included full- versus part- time work status and National Statistics Socio-economic Classification (NSSeC) class as additional controls. For modelling stability, we used the log of hourly pay as the dependent variable in estimating the ethnic differences in earnings, but we still show the exponentiated earnings levels in the graphs for ease of interpretation.

Figure 4 shows striking ethnic differences in earnings over the life course, more so for men than for women. We would expect people in the prime of life to earn more than younger or older people and this is indeed the case. But with the few exceptions of Chinese over age 22, white Other men over age 36, and white Irish over age 60, we find that, at each age, white British men have the highest earnings. On average, they earn twice as much as do ethnic minority men, and the earnings differentials increase sharply from around age 30 to age 55, namely, throughout the golden ages of ‘occupational maturity’. White British men’s earning power continues to increase steadily until around age 40 when it reaches the peak, and then stays at similar levels for the next fifteen years before it declines. At the height of their earnings capacities, white British men make around £2,600 a month. By contrast, the rate of increase for ethnic minority men is much slower and they reach the earnings’ plateau at a much earlier age. For Pakistani and Bangladeshi men, the highest average earnings they achieve is around £1,400 to £1,500 per month at around age 30, ten years earlier than for white British men. Remarkably, Bangladeshi men’s monthly wages stay at around £1,100 to £1,200 for the remainder of their working lives while white British men earn around twice as much from around age 40 to age 60. Whether these represent ethnic-specific cohort or life-course effects cannot fully assessed using available data but awaits future analysis. Overall, apart from the exceptions as earlier noted, there is not much difference among the white groupings, and white men tend to earn more at each of the career stages and their earnings also decline more slowly and at a later age than is the case among minority men. At around age 55, a three-tiered structure is clearly shown, with white (and Chinese) men at the top, those from Indian, ‘Other’ and the two black origins in the middle, and Pakistani and Bangladeshi men at the bottom.

The overall shape of a curvilinear effect of women’s age on their earnings is similar to that for men but the inter-ethnic relations are rather different (see Figure 4). While women’s earnings are related to their career stages as in the case of men, the age effect is not as marked. Take white British women as example. Between age 30 to around age 55, monthly earnings remain at around £1,500. From around age 30 onwards, white British women’s earnings are somewhere in the middle, lower than those of Chinese and black Caribbean women but higher than those of Pakistani and black African women. From mid-30s onwards, Indian women’s earnings start to decline and at around age 50, they join Pakistani women in becoming lowest paid workers. Overall, the data suggest that ethnic penalties are less severe for women than for men, and that white British women’s advantages are not as marked as their male peers.'
We now turn to the scarring effects of unemployment on earnings. Other scholars have shown that unemployment experiences can have a serious effect on subsequent earnings. For instance, using the first seven waves of the British Household Panel Survey (BHPS), Arulampalam (2001) shows that a spell of unemployment carries a wage penalty of around 6% on re-employment and, after three years, people are earning 14% less than those who have experienced no unemployment. Gangl (2006), using the 1996 Panel of the Survey of Income and Program Participation (SIPP) and

**Figure 4.** Hourly pay over the life course by ethnicity and sex.

Notes: Data for Chinese men and women under the age of 20 and for Bangladeshi women over age 46 are omitted due to small Ns. Data for the ‘Other’ ethnic group are also omitted.
the 1994–2001 waves of the European Community Household Panel (ECHP), conducts an international comparative study between the USA and 12 European countries. He finds, for the UK, that the penalty on subsequent earnings is around 14% for the first year, 12% for the second year and 11% for the third year in terms of reduced earnings. These studies do not focus on ethnic differences and the models do not control for socio-demographic-geographic confounders as we do in the present analysis. In our data and with all other factors taken into account, the penalties are 10, 13 and 16% for one, two, and three and more spells of prior unemployment; other things being equal, the previous wave’s unemployment carries a further penalty of 4%. Our data cover a period of more protracted recession than used in Arulampalam’s and Gangl’s studies. In a stagnant rather than a buoyant economy, we would expect unemployment scarring to have a greater penalty as people would be happy to accept a lower-paid job if they could find one.

With this in mind, we turn to ethnic differences in unemployment scarring on earnings, differentiating one, two, and three and more spells of unemployment in previous waves. Figure 5 shows the net effects for the ethnic groups whose penalties are significantly worse than those for the white British (white Irish, white Other and Chinese are not significantly different from white British and their data are not presented, nor are data for the ‘Other’ ethnic group which is very heterogeneous), controlling for all the socio-demographic variables. For both men and women, we can see that unemployment penalties increase with the number of spells: people with more spells of unemployment tend to get less pay. Within the overall pattern, it is also notable that for men, ethnic minorities tend to have lower wages regardless of the incidence or number of spells of prior unemployment. Bangladeshi, Pakistani, black African, Indian and black Caribbean men make 33, 28, 21, 14 and 11% less than do their white British counterparts among those who reported no incidence of unemployment during any of the previous waves, and the figures are statistically significant at the 0.01 levels or higher. Among those with one spell of unemployment, Pakistani, Bangladeshi and black Caribbean men earn notably less than do their white British counterparts, and the differences are again significant at the 0.05 or higher levels. For men with 2 or more spells, ethnic variations still exist but they are not statistically significant.

The overall shape of unemployment scarring on women’s earnings is similar to that of men but the inter-ethnic relations are somewhat different. White British women’s earnings, at £1,598 per month, are in the middle, higher than those of black African, Indian, Pakistani and Bangladeshi women (at £1,526, £1,570, £1,199 and £1,445 respectively), but lower than those of white Irish, white Other, black Caribbean and Chinese women (at £1,732, £1,839, £1,858 and £1,917 respectively). Ethnic differences are shown only among those who experienced no unemployment spells, with Pakistani, Bangladeshi, black African, and Indian women earning around 15, 11, 9 and 8% less than white British women, and the other groups being not significantly different from their white British peers. For those with one or two unemployment spells, ethnic minority women tend to have lower pay than do white British but the differences are largely non-significant. In sum, unemployment scarring on earnings is more pronounced for men than for women, with Pakistani men and women facing the most salient penalty.
Discussion and conclusion

We have, in this paper, examined the unemployment and earnings situation of different ethnic groups in the UK using the first six waves of Understanding Society: the UK Longitudinal Household Longitudinal Study (UKHLS). The data cover the period immediately after the onset of the most recent recession that started in 2008, thus enabling us to explore in detail whether previous unemployment has a particularly pernicious impact on ethnic minorities’ subsequent employment and earnings trajectories. The structure of the UKHLS allows us to track the dynamics across the waves, over the life course, and by

Figure 5. Net effects of prior unemployment spells on hourly pay.

Discussion and conclusion

We have, in this paper, examined the unemployment and earnings situation of different ethnic groups in the UK using the first six waves of Understanding Society: the UK Longitudinal Household Longitudinal Study (UKHLS). The data cover the period immediately after the onset of the most recent recession that started in 2008, thus enabling us to explore in detail whether previous unemployment has a particularly pernicious impact on ethnic minorities’ subsequent employment and earnings trajectories. The structure of the UKHLS allows us to track the dynamics across the waves, over the life course, and by
unemployment spells. The large sample sizes for the main ethnic minority groups allow us to investigate the ethnic differences for both men and women in unemployment and earnings, and particularly the different scarring effects of prior unemployment on subsequent unemployment and earnings in contemporary British society more comprehensively than has been possible before. The data also contain unprecedented detail on socio-economic-demographic and geographical attributes, serving as time-constant or time-varying control variables in growth curve modelling.

Our research shows that people of black Caribbean, black African, Pakistani and Bangladeshi origins face considerable disadvantages with respect to unemployment and earnings. White Others and white Irish women are very close to white British in both gross and net rates of unemployment and in earnings whilst white Irish men have higher unemployment rates which however disappear when other demographic factors are taken into account. People of Chinese origins appear to be least vulnerable to unemployment and low pay but this is mainly due to their exceptionally high levels of educational qualifications (64% of them have degrees, as compared with 25% of the white British, see also Lessard-Phillips and Li 2017). Once education and other factors are taken into account, they do not appear to have advantages relative to the white British in any of the domains under investigation in this study.

White British advantage is mainly shown in their low risks of unemployment and their high stability in earnings from the mid-30s onwards. Black Africans are well behind the white British in much of their career lives and Indians begin to fall behind the white British from around age 40 onwards.

Unemployment has a scarring effect upon subsequent unemployment, and this was not ethnic blind. Having experienced unemployment, black Caribbean and Bangladeshi men, and Pakistani and black African women are much behind their white British peers in finding re-employment; furthermore, among those with one or two spells of unemployment, black Caribbean men are around 10–15 percentage points more likely to be unemployed in the current wave than their white British peers. Similarly, for women with one unemployment spell, those of Pakistani origin are around 10–15 percentage points more likely to experience unemployment than their white British peers.

The scarring effects of prior unemployment are also evident on earnings and with clear signs of ethnic penalties. The gap is clear for men, with the effects being almost as marked for those experiencing one spell as among those who have had no unemployment experiences.

Overall, the evidence on life-course trajectories in unemployment and earnings on the one hand, and on the scarring effects of unemployment on subsequent employment and earnings on the other, all suggests persistent and cumulative ethnic disadvantages.

How might one attempt to explain these patterns of cumulative disadvantage, and why do they apply to some minorities but not others? One possibility is that they are the result of cumulative discrimination. Field experiments using correspondence tests have demonstrated that all the major ethnic minorities in Britain experience discrimination at the initial stage of the job search process, needing to make almost twice as many applications in order to obtain a positive callback (such as a job interview) as white British peers with identical CVs (Wood et al. 2009; Heath 2018). By its nature, correspondence testing can only examine the very first stage of the application process, and is not able to explore career progression. It would be surprising if the processes which generate discrimination
when screening applicants for interview did not re-emerge when considering employees for promotion or wage increases.

Field experiments however have typically shown that, in Britain, discrimination is approximately at the same level for all the different minorities which we have been able to distinguish, and are experienced by Indian and Chinese minorities just as for black African or Pakistani/Bangladeshi groups. How can one square this with the patterns of ethnic penalties which our research (and that of others) has suggested are much smaller for the Indian and Chinese communities? One argument which must remain speculative is that there are differences in the positive selection of the first generation across these groups. Our interpretation is that the drive and ambition which characterises positively selected groups enables them to compensate for the barriers which they face in the British labour market. In contrast, those from Pakistan, Bangladesh and the Caribbean may not have the resources to overcome discrimination in the same way. It may also be the case that there is an additional ‘Muslim penalty’ for those from Bangladeshi and Pakistani origins (Heath, Li, and Woerner-Powell 2018).

Alongside discrimination and selection, it is possible that additional processes are at work too. For example self-employment or employment in the ethnic enclave may enable minorities, notably those of Bangladeshi, Pakistani and Chinese origins, to avoid unemployment but may offer very little in the way of income or career progression in the mainstream labour market (Clark and Drinkwater 2000; Kalra 2000).

Continuing ethnic disadvantages as evidenced in our study are pronounced. While progress has been made in the battle against racial inequalities (Li and Heath 2016), the enduring ethnic misfortunes in the UK remind us of how Lieberson and Fuguitt (1967), and Duncan (1968) scrutinised the US conscience half a century ago. While Lieberson and Fuguitt showed that the disadvantages encountered by African Americans would take around 80 years for them to catch up with whites even in the absence of racial discrimination, Duncan (further) suggested that the main problem was not due to poverty but to race. In the UK, the various Race Relations Acts from the 1960s onwards have certainly ameliorated the life chances for ethnic minorities, yet disadvantages, particularly those faced by black groups and by Pakistanis and Bangladeshis, have endured. Prime Minister May in 2017 challenged society to ‘explain or change’ racial inequalities ‘in the battle to defeat ethnic injustice’. The starting point is to document these inequalities to help understand how they arise. In this paper, we have carefully documented and attempted to explain labour market inequalities as a first step to addressing them.

Notes

1. Similar approaches are taken by Arulampalam (2001) who used data from the first seven waves of the British Household Panel Survey, and by Gregory and Jukes (2001) who used data on unemployment and earnings trajectories from the New Earnings Survey Panel Dataset (NESP7D) linked with the Joint Unemployment and Vacancies Operating System (JUVOS).
2. This is done in accordance with the guidance available at https://www.gov.uk/government/statistics/gdp-deflators-at-market-prices-and-money-gdp-november-2017-autumn-budget-2017.
3. We are grateful to the anonymous reviewer and the Editors for this suggestion.
4. The sample sizes for the ten ethnic groups are: 41,656 (white British), 1,149 (white Irish), 2,382 (white Other), 1,328 (black Caribbean), 1,947 (black African), 2,551 (Indian), 2,220 (Pakistani), 1,433 (Bangladeshi), 329 (Chinese) and 2,810 (Other) respectively. In terms of person-year observations, the numbers are 155,399, 4,149, 6,568, 3,886, 5,041, 7,705, 6,343, 4,337, 999, and 8,451 respectively.

5. We noted that Pakistani and Bangladeshi women have long been observed to have high rates of economic inactivity, which is also evidenced in our data, where even restricting our sample to the working-age population excluding full-time students, 60% are out of the labour market, with 29% employed and 11% unemployed, resulting in a high unemployment rate. The findings here are very similar to those reported on the basis of the Labour Force Surveys by Clark et al. (2018).

6. We re-scaled the dependent variable (unemployed = 100 and employed = 0) and used the ‘mixed’ command in Stata 14 in conducting the analysis. The results are very similar in substantive terms to those predicted from ‘melogit’ or ‘meprobit’ (unemployed = 1 and employed = 0) models, or from margins for average marginal effects (AME). We also prepared full tables corresponding to Figures 1–5 as supplementary materials, Supplementary Tables 1–5 which are available online.

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No potential conflict of interest was reported by the authors.

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