
English Language Fluency and the Ethnic Wage Gap for Men in England and Wales

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Abstract

Using data from the Fourth National Survey of Ethnic Minorities, English language fluency is shown to have an important influence over the level of earnings that ethnic minorities are able to command within the employee labour market. There is also evidence to suggest that language fluency has some role to play in describing the difference in average weekly earnings between white and ethnic minority workers, but it does not emerge as a major determinant. Indeed, it would appear that the concentration of ethnic minorities in local enclaves with their high levels of unemployment has a greater influence over the level of ethnic earnings disadvantage.

1. Introduction

There has been a recent expansion in the literature describing the disadvantage faced by ethnic minorities in the UK labour market. Blackaby *et al.* (1994), for example, have shown the existence of significant labour market discrimination towards ethnic minority workers in the 1970s and 1980s, a trend that has been continued into the 1990s (see Blackaby *et al.*, 1998). This strand of the UK-literature, however, still lags behind the voluminous evidence available for the US (Darity and Mason, 1998 provides a particularly useful overview). In particular, language fluency skills have been shown to be an important predictor of labour market success in US studies (eg Chiswick and Miller, 1992), but the unavailability of appropriate data has ham-

pered UK research in this area. Data from the 1991 Census of Population show that over seven per cent of the UK's population were born outside of its shores and the vast majority of these are from ethnic minorities. Given that English is not the first language of many of these immigrants, such skills would appear to be an important consideration in determining their success in the labour market.

Such a point has been emphasised by Blackaby *et al.* (1998) for instance. Whilst highlighting the earnings disadvantage faced by the UK's ethnic minority employees in the 1990s they concede that this finding could be the result of inadequate data controls rather than discriminatory practices *per se*. By way of contrast, some recent US research (see for example O'Neill, 1990, Neal and Johnson, 1996), has found no evidence of a black/white wage differential after controlling for characteristic differences.²

Using data from the Fourth National Survey of Ethnic Minorities, the extent to which ethnic earnings differences are the result of omitted language information is assessed. Additionally, this work also provides a unique insight into the influence language has on the contemporary labour market success of Britain's ethnic population. The focus of the paper, though, is upon a relatively advantaged section of the ethnic minority population, namely male employees in employment.³ Limiting the analysis to this group will enable a degree of consistency to be maintained with previous research in the area.

2. The Fourth National Survey of Ethnic Minorities

Conducted in 1993/4, the Fourth National Survey of Ethnic Minorities (FNSEM) targeted 130,000 addresses in England and Wales with an emphasis on over-sampling ethnic minorities. Those groups who were sampled consisted of Caribbeans, African Asians, Indians, Pakistanis, Bangladeshis and Chinese in addition to a control sample of white respondents (see Modood *et al.*, 1997 for fuller details). For historical reasons, though, Black Africans were not included within the survey and so the sample obtained will not be nationally representative of all ethnic minority groups.

Importantly, unlike many of the other large-scale surveys conducted in the UK, a member of the same ethnic group as the respondent, and who spoke both English and the respondent's other main language, arranged the interview and in most cases also conducted the interview. Whilst maximising response rates and minimising the potential for confusion or misunderstanding during the interview, this also had the effect of capturing those individuals whose poor grasp of the English language might mean that they would otherwise not participate in such surveys. Thus, the sample of ethnic minorities achieved in the FNSEM is likely to contain a much broader spectrum of respondents and provide a better indication of the true nature of the ethnic minority population.

In addition to the standard set of survey instruments detailing individual, demographic and job characteristics, an assessment made by the interviewer of the respondent's English language fluency was also coded into the survey data. At the end of all interviews, interviewers appraised the ability of respondents to speak English. These assessments fell into one of four categories: 'fluently'; 'fairly well'; 'slightly'; 'not at all'. Most other studies in this area base their findings upon self-reported measures of language fluency. As self-reported language information tends to systematical-

ly misclassify language ability (see Dustmann and Van Soest, 1998), it is likely that studies based on such measures will under-estimate the true importance of language ability on earnings. The data used here will therefore be free of such self-reported measurement error.⁴

3. Estimation framework

Following standard practice, differences in earnings are examined within a conventional human capital framework. Specifically, separate earnings functions are specified for white (*W*) and ethnic minority (*E*) workers:

$$\ln Y_W = \hat{\beta}_W X_W + \varepsilon_W \quad (1)$$

$$\ln Y_E = \hat{\beta}_E X_E + \hat{\gamma}_E Z_E + \varepsilon_E \quad (2)$$

where *Y* are gross weekly earnings, *X* is a vector of earnings-related characteristics common to both white and ethnic minority workers, $\hat{\beta}$ is a conformable vector of estimated rewards to these characteristics, *Z* is a vector of immigrant characteristics describing English language fluency applicable to ethnic minority workers only, $\hat{\gamma}$ is a conformable vector of estimated rewards to this second vector of characteristics and the ε are regression disturbance terms assumed to be serially uncorrelated and normally distributed.

The difference between equations (1) and (2) is the ethnic earnings differential and following Blinder (1973) and Oaxaca (1973) this can be used to assess the importance of characteristic and coefficient differences in accounting for expected earnings discrepancies between white and ethnic minority workers. Thus,

$$(\hat{\beta}_W \bar{X}_W - \hat{\beta}_E \bar{X}_E) = w_\beta \cdot (\bar{X}_W - \bar{X}_E) + (\hat{\beta}_W - \hat{\beta}_E) \cdot w_X - \hat{\gamma}_E \bar{Z}_E \quad (3)$$

where $w_\beta = \delta \cdot \hat{\beta}_W + (1 - \delta) \cdot \hat{\beta}_E$

$$w_X = (1 - \delta) \cdot \bar{X}_W + \delta \cdot \bar{X}_E$$

a bar indicates a mean value, and $\delta \in [0,1]$ ⁵ The first term on the right-hand side of equa-

tion (3) is the difference in expected earnings arising out of differences in the average level of characteristics between white and ethnic minority workers and the second term is that part of the earnings differential attributable to differences in the rewards to these characteristics. The third term captures the influence that English language skills have in accounting for mean earnings differences.

The choice of δ in equation (3) gives rise to the familiar index-number problem. When $\delta=1$ we use the returns to characteristics for white workers as base, and when $\delta=0$ we use those of ethnic minorities. Other possible choices of δ have also been suggested by Reimers (1983) and Cotton (1988), conforming with the idea that the competitive wage structure would lie somewhere between those currently observed between white and ethnic minority workers. Whilst providing unique decompositions, the assumptions made in both of these papers are somewhat arbitrary and have no theoretical basis.

Alternatively, the approach of Neumark (1988) and Oaxaca and Ransom (1994) allows the calculation of the competitive wage structure (β^*) that would exist between the two groups. Thus,

$$\beta^* = \Omega \hat{\beta}_w + (1 - \Omega) \hat{\beta}_e$$

where the weighting matrix (Ω) is defined such that

$$\Omega = (X_w' X_w + X_e' X_e)^{-1} (X_w' X_w)$$

The difference in mean weekly earnings may then be decomposed as

$$(\hat{\beta}_w \bar{X}_w - \hat{\beta}_e \bar{X}_e) = \beta^* (\bar{X}_w - \bar{X}_e) + [(\hat{\beta}_w - \beta^*) \bar{X}_w - (\hat{\beta}_e - \beta^*) \bar{X}_e] - \hat{\gamma}_e \bar{Z}_e \quad (4)$$

where the first and last terms on the RHS again capture average workforce asymmetries and the remaining terms measure the contribution of coefficient differences in the regression estimates. The above approach, however, ignores

the possibility of pre-selection in the samples of those in employment. The observed wage structure is likely to be influenced by factors affecting whether individuals are working or not. Given that the earnings of those not working cannot be observed the estimates of the wage determination process may be subject to selectivity bias. Following the likes of Heckman (1979), the conventional solution to this type of problem is to adopt a two-stage estimation procedure, which changes the problem from one of missing data on the dependent variable (i.e. no earnings information on those not working) to specification bias arising from an omitted variable. The inclusion of the inverse of the Mills ratio (λ) in equations (1) and (2), obtained by estimating a probit model which predicts the probability of being in employment, corrects for this bias.

The difference in predicted wage offers (see Reimers, 1983) between white and ethnic minority workers may then be decomposed as follows:

$$(\hat{\beta}_w \bar{X}_w - \hat{\beta}_e \bar{X}_e) - (\hat{\alpha}_w \lambda_w - \hat{\alpha}_e \lambda_e) = \quad (5)$$

$$\beta^* (X_w - \bar{X}_e) + [(\hat{\beta}_w - \beta^*) \bar{X}_w - (\hat{\beta}_e - \beta^*) \bar{X}_e] - \hat{\gamma}_e \bar{Z}_e$$

where λ is the constructed selectivity term capturing selection into labour market employment and $\hat{\alpha}$ is its associated coefficient estimate. This framework is therefore based around the wage offered to an individual with the characteristics of the average wage-earner.⁶

4. Results

Central to the analysis is the adoption of a model specification that adequately captures the intricacies of earnings determination for white and ethnic minority workers alike. The choice of variables entering the model is determined by a combination of theoretical considerations, allied with past precedent, and a degree of pragmatism due to data constraints. The reduced form equations to be estimated assume a background model of labour demand and labour supply, where labour quality and

Table 1: Regression Estimates from Ethnic Minorities and White Earnings Equations: FNSEM

	Ethnic minorities			White		
	Coef	z-stat	Mean	Coef	z-stat	Mean
Age	0.015	1.10	36.882	0.052	3.89	37.262
Age squared	-0.000	-0.91	1472.147	-0.001	-3.05	1515.162
Married	0.043	0.78	0.826	0.075	1.56	0.699
<i>Ethnic Origin</i>						
Caribbean	(E)	(E)	0.248	-	-	-
Indian	-0.179	-3.29	0.221	-	-	-
African Asian	-0.183	-3.13	0.201	-	-	-
Pakistani	-0.138	-2.08	0.154	-	-	-
Bangladeshi	-0.333	-4.49	0.116	-	-	-
Chinese	-0.122	-1.57	0.059	-	-	-
<i>Immigrant Status</i>						
UK-born	(E)	(E)	0.222	-	-	-
Arrived before 1960	-0.094	-0.90	0.035	-	-	-
Arrived 1960-1969	0.026	0.43	0.284	-	-	-
Arrived 1970-1979	-0.044	-0.76	0.286	-	-	-
Arrived 1980-1989	-0.260	-3.94	0.123	-	-	-
Arrived 1990-1994	-0.378	-4.26	0.050	-	-	-
<i>Qualifications</i>						
Degree	0.508	9.23	0.198	0.505	7.22	0.156
A-levels	0.250	3.47	0.064	0.474	6.04	0.071
O-levels	0.097	2.21	0.345	0.183	3.55	0.459
Vocational	0.217	2.65	0.050	0.326	4.17	0.087
Other	-0.011	-0.07	0.009	0.101	0.46	0.006
Apprenticeship	-0.085	-0.57	0.012	0.040	0.37	0.032
No UK qualifications	(E)	(E)	0.322	(E)	(E)	0.188
<i>Region of Residence</i>						
North	(E)	(E)	0.017	(E)	(E)	0.123
Yorks/Humber	0.052	0.38	0.070	-0.016	-0.21	0.095
East Midlands	0.032	0.22	0.057	-0.154	-1.75	0.054
South East (rem)	0.247	1.85	0.159	0.062	1.00	0.214
South West	0.050	0.25	0.012	-0.082	-1.17	0.126
West Midlands	0.064	0.49	0.222	-0.102	-1.47	0.121
North West	0.164	1.17	0.067	0.005	0.06	0.071
Wales	0.285	1.68	0.020	-0.139	-0.99	0.019
East Anglia	0.157	0.94	0.021	-0.030	-0.40	0.091
Inner London	0.142	1.06	0.148	0.118	1.20	0.048
Outer London	0.377	2.84	0.207	-0.056	-0.55	0.037
Employment selectivity	-0.221	-3.44	0.618	-0.377	-3.89	0.370
Constant	4.765	15.07	1.000	4.248	15.10	1.000
Sample Size			666			463

Notes: Additional controls for industry of employment (8) and establishment size (11) were also included but are not presented in the above table; (E) denotes an excluded category.

compensating differentials play a central role in determining the level of weekly earnings. Accordingly, standard controls such as education, marital status and industry of employment are included, amongst others, within the wage equations. It should also be remembered, though, that the ethnic community in Britain is by no means an homogenous entity. To take account of these differences a number of ethnic origin and immigrant cohort controls are also included within the model specification.⁷

Table 1 details wage equation estimates for whites and ethnic minorities using a specification that would be consistent with much of the previous research that has taken place. These estimates reveal a familiar pattern for both groups of workers that conform to *a priori* expectations. Weekly earnings typically increase with age and education; married workers enjoy an earnings premium over other marital states, as do employees who work in large establishments; and substantial variation is found in the regional and industrial distribution of earnings.⁸

The coefficients upon the ethnic origin variables would suggest that even after controlling for the above individual and demographic characteristics there are still marked earnings differences across the ethnic minority population. Thus, relative to Caribbeans, intra-ethnic differences are greatest for Bangladeshi workers, whose weekly earnings are nearly thirty per cent lower *ceteris paribus*, and smallest for Chinese.⁹ For this latter group, the estimated coefficient of -0.122 would suggest that their earnings are lower by some 11.5 per cent (although this estimate is indistinguishable from zero at the usual levels of significance).

These results are in themselves interesting as they would appear to go against the general findings from previous research using alternative data sources. Whilst Bangladeshis are typically held up as the most disadvantaged ethnic minority group and the Chinese as a group who fare particularly well in comparison to their

counterparts from other ethnic backgrounds, Caribbeans have not tended to emerge in such a favourable position. In our analysis, though, they experience an earnings premium over all of the other major ethnic groups. Given the particular sampling framework of the FNSEM this could turn out to be an important finding (more on this below).¹⁰

The coefficients on the immigrant cohort variables also point to substantial heterogeneity across the ethnic minority community. Relative to those born in the country, immigrants who arrived in the UK during the 1990s face the greatest wage penalty (of 31.5 per cent). Meanwhile, immigrants from the 1980s, whilst they still experience a *ceteris paribus* earnings disadvantage (of 22.9 per cent), the magnitude of this disadvantage is reduced. The coefficients on the other immigrant status variables would suggest that earlier arrivals experience no statistically significant earnings penalty. Such findings are likely to be reflecting a number of different factors. Firstly, they may be indicative of compositional differences between cohorts of immigrants or reflect the fact that labour demand conditions have varied substantially over the post-war period. Thus, immigrants entering the UK in the 1950s would have encountered much more favourable labour market conditions than workers entering in the years of the early 1980s and 1990s. The pattern of estimates is also consistent, though, with the idea of migrant workers assimilating to the environment that they face in their host country. Thus, more recent arrivals to the UK may be less familiar with customs and institutions which may disadvantage them in the labour market.¹¹

Table 1 also details the mean values of the wage equation characteristics. Over three quarters of the ethnic minority workers in the sample were born abroad and entered the UK in subsequent years. The decades of the 1960s and 1970s saw the heaviest immigration, whilst just under one in five immigrants

arrived after 1979. As a consequence of labour demand conditions at the time of their arrival, the regional concentration of Britain's ethnic communities largely reflects this post-war settlement of immigrants. Typically they were attracted to the larger conurbations, particularly London, and the manufacturing areas of the West Midlands. Indeed, the figures of Table 1 concur with evidence from the 1991 Census of Population which shows that London had 44.8 per cent of the ethnic minority population whilst having only 10.3 per cent of the white population (see Owen, 1996). Likewise, ethnic minorities are also more concentrated in the West Midlands but under-represented in the peripheral regions of the country which have typically suffered from relatively high levels of unemployment over most of the post-war period.

The idea of ethnic minorities placing a greater emphasis upon education is highlighted when the proportion of workers possessing degree-level qualifications is examined. For whites, just over 15 per cent of employees have such a qualification but this figure is somewhat lower than the comparable figure of almost 20 per cent for ethnic minority workers. A number of factors may explain this finding, such as the motivational drive for betterment that migrants tend to have for themselves and their families, and this would certainly tie in with the increased participation in higher education for all major ethnic groups over whites as

reported by Gillborn and Gipps (1996), Modood *et al.* (1997) and Leslie and Drinkwater (1999).

The breakdown of the sample of ethnic minority workers provides an interesting insight into the problem of non-participation inherent to many of the large-scale government surveys that are commonly used in this type of analysis. The figures from Table 1 show that Caribbeans comprise 24.8 per cent of the ethnic minority sample, Indians 22.1 per cent, African Asians 20.1 per cent, Pakistanis 15.4 per cent, Bangladeshis 11.6 per cent and Chinese 5.9 per cent. Whilst on the whole these figures are not appreciably different from the proportions reported in the Labour Force Survey, they do show, for example, that Bangladeshis are more heavily represented within the FNSEM.¹² Table 2 also indicates that this is a group whose community suffer from poor English language skills. So whilst only 38.9 per cent of the Bangladeshi sample was assessed as having 'fluent' language skills, the comparable proportions for all other ethnic minorities (possibly with the exception of Pakistanis) are much higher. This would again highlight the importance of the interview procedure as outlined in Section 2 that allows for a more balanced cross-section of the ethnic minority population to be included in the sample and not just those with generally superior English language skills. Indeed, this is likely to be a prime factor in accounting for the

Table 2: Ability to Speak English (%) by Ethnic Origin: FNSEM

	<i>Fluent</i>	<i>Fairly well</i>	<i>Slightly</i>	<i>Not at all</i>
Caribbean	90.2	8.9	0.9	0.0
Indian	59.7	22.8	16.2	1.3
African Asian	72.7	17.5	9.1	0.7
Pakistani	46.4	27.3	22.2	4.1
Bangladeshi	38.9	29.5	29.9	1.6
Chinese	67.9	11.1	17.3	3.7

favourable position of Caribbean workers reported earlier, which is at variance with much previous research. For example, the inclusion of workers with lesser language skills would have a greater depressing influence upon the earnings potential of the average Indian employee (where only 59.7 per cent of the sample are judged as 'fluent' in English) than the earnings potential of the average Caribbean (where over ninety per cent of the sample are assessed as 'fluent').¹³

Table 3 presents results from earnings decompositions as set out by equation (5).

afforded to white and ethnic minority employees is attributable to worker asymmetries. The nature of this result is very similar to that reported in Blackaby *et al.* (1998), who also examined the position of ethnic minority employees in the 1990s but used an alternative data source.

The increased incidence of unemployment amongst ethnic minorities (see Blackaby *et al.*, 1999) and their concentration within ethnic enclaves¹⁴ are two features that are likely to have dramatic effects upon the local labour markets in which ethnic minorities find them-

Table 3: Decomposition of White/Ethnic Minorities Wage Offer Differential: FNSEM

	<i>Column 1</i>	<i>Column 2</i>	<i>Column 3</i>
Wage offer differential $(\hat{\beta}_w \bar{X}_w - \hat{\beta}_E \bar{X}_E) - (\hat{\alpha}_w \bar{\lambda}_w - \hat{\alpha}_E \bar{\lambda}_E)$	0.258	0.264	0.282
Characteristic (%) $\beta^* (\bar{X}_w - \bar{X}_E)$	19.08	37.94	32.10
Language (%) $-\hat{\gamma}_E \bar{Z}_E$	-	-	9.37
Coefficient (%) $(\hat{\beta}_w - \beta^*) \bar{X}_w - (\hat{\beta}_E - \beta^*) \bar{X}_E$	80.92	62.06	58.53
% breakdown of characteristic component			
age	-3.13	-3.43	-3.29
qualifications	1.73	1.44	0.94
married	-3.53	-3.42	-3.46
region	-10.52	-15.05	-14.27
industry	11.19	10.47	9.55
plant size	2.30	2.34	2.05
year of arrival	21.04	20.09	16.71
unemployment	-	25.49	23.87

Column 1 details the results when a standard set of controls (consistent with previous studies) are used in the earnings equation. Less than one fifth of the difference in mean wages

selfes. Because of the level of aggregation at which survey data is often coded, nationally representative studies in the UK have typically been unable to adequately account for such

features. Unemployment information defined at the ward level, however, is available to us in the current data.¹⁵ The more stringent labour market conditions facing ethnic minority workers is evidently borne out by the figures reported in the top panel of Table 4. For example, whilst almost three quarters of the white sample live in a ward with an unemployment rate of less than 10 per cent, only just over a quarter of the ethnic minority sample do so. Likewise, a third of the ethnic minority sample live in wards with unemployment rates over 20 per cent whilst for whites the proportion is only 3 per cent.

Given the strongly negative way in which local unemployment affects employee earnings,¹⁶ it is no surprise to see the importance of

tially towards explaining the white/ethnic minority weekly wage differential. Some sixty per cent of the discrepancy in mean wage offers is still unaccounted for by differences in characteristics between white and ethnic minority employees.

The way in which language impacts upon ethnic minority earnings is shown in the bottom panel of Table 4. Relative to those who are classified as speaking English fluently, there is an approximate 10 per cent earnings penalty from having inferior language skills, even if relatively small cell sizes mean that these estimates only border on significance. Meanwhile, very few individuals who are classified as having no language skills actually make it into labour market as employees.

Table 4: Coefficients on Selected Characteristics from Earnings Equations: FNSEM

	Ethnic minorities			Whites		
	<i>Coeff.</i>	<i>z-stat</i>	<i>Mean</i>	<i>Coeff.</i>	<i>z-stat</i>	<i>Mean</i>
<i>Unemployment rate in local ward</i>						
2-4.99%	(E)	(E)	0.053	(E)	(E)	0.197
5-9.99%	-0.199	-2.49	0.215	-0.091	-1.90	0.541
10-14.99%	-0.276	-3.52	0.259	-0.100	-1.60	0.158
15-19.99%	-0.341	-3.76	0.141	-0.164	-1.68	0.074
>20%	-0.340	-3.94	0.333	-0.109	-0.96	0.030
<i>Ability to speak English</i>						
Fluent	(E)	(E)	0.705	-	-	-
Fairly well	-0.096	-1.90	0.168	-	-	-
Slightly	-0.095	-1.53	0.118	-	-	-
Not at all	0.029	0.17	0.009	-	-	-
Sample size		666			463	

these controls in the decomposition analysis (Table 3, column 2).¹⁷ Local unemployment differences alone explain in excess of one fifth of the wage offer differential. With the exception of the 'year of arrival' variables, few of the other standard controls contribute substan-

Given that seventy per cent of the ethnic minority sample have fluent language skills, the crucial distinction would therefore appear to be this latter group relative to those with any degree of impaired English ability.¹⁸

Column 3 of Table 3 sees the inclusion of

these language controls in the decomposition framework. There is no doubt that language fluency has a role to play in describing the difference in weekly wages between whites and ethnic minorities but, with less than a ten per cent total contribution, it by no means emerges as the dominant feature of the analysis. Differences in rewards to labour market characteristics still explain well over half of the estimated wage offer differential. It would be bold to ascribe this solely to labour market discrimination, but the fact cannot be ignored that it may indeed explain a large part of this result. Even when commonly cited language skills are included within the analysis, a large portion of the earnings disadvantage faced by ethnic minorities remains unaccounted for.

5. Conclusions

A feature of UK research into the earnings position of ethnic minorities vis-à-vis white workers has been that little of their observed disadvantage has been attributable to worker asymmetries. This is in marked contrast to some recent US research. Due to data constraints, though, the extent to which this can be described as a robust finding has remained somewhat unclear. Could it not be due to inadequate controls in empirical estimation? The results presented here would go some way towards answering this question. Specifically, the availability of language data in the Fourth National Survey of Ethnic Minorities has shown that whilst a lack of language skills has some role to play in determining the earnings of ethnic minority workers, it is by no means the key to their labour market disadvantage. Indeed, it would appear that the concentration of ethnic minorities in local enclaves with their high levels of unemployment has a greater influence over the level of ethnic earnings disadvantage.

It should be remembered, though, that wage disadvantage is only part of the story. Higher unemployment and lower activity rates are also

features of the labour market experience of ethnic minorities. But whilst Leslie and Lindley (2001) and Shields and Wheatley-Price (1999) have explored this issue and find a larger role for language in explaining unemployment and activity rates, as here, it does not fully account for the apparent ethnic disadvantage.

Endnotes

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2. These studies include the Armed Forces Qualifying Test (AFQT) score as a regressor variable in estimated wage equations using the National Longitudinal Survey of Youths. Interracial differences in AFQT scores appear to be more substantial than the interracial differences in the Scholastic Aptitude Test (SAT), although whites have higher scores than blacks on both tests.

3. Lindley (2000) meanwhile explores the ethnic wage gap for female workers.

4. Conceivably, though, interviewers themselves may have incorrectly assessed the ability of respondents.

5. In the estimation that follows, predicted earnings (as shown on the LHS of equation 3) are used because the earnings information available within the FNSEM is only reported within income categories. During their interviews, respondents were shown sixteen income bands and were asked to indicate which range best represented their usual gross weekly pay from their main job (including overtime, bonuses, tips and commission before deductions for tax, National Insurance, union dues etc.). These income bands ranged from £79 or less up to £789 or

more. As a result of this, a maximum likelihood censored Tobit estimator is therefore used to derive all coefficient estimates in the following analysis (see Stewart, 1983).

6. As a practical issue, the qualitative nature of the results reported later is not contingent upon selectivity adjustment. Consistent with the findings of Blackaby *et al.* (1998), however, the magnitude of 'discrimination' is found to increase when selectivity issues are controlled for.

7. Within the ensuing decomposition framework the ethnic controls are treated as a 'coefficient' component as this would appear to be the intuitively appealing treatment of what are essentially just intercept shifts in the ethnic minorities earnings equation. The cohort controls, similarly used to capture unobserved heterogeneity across immigrant waves, are treated as a 'characteristic' component.

8. Pre-selection into employment has been controlled for by including the inverse Mills ratio as a regressor variable in the earnings equations. This was calculated separately for whites and ethnic minorities from two reduced form employment equations which were identified by including a number of family background and housing tenure variables that did not enter the specification of the earnings equations. The negative nature on these terms as shown in Table 1 would indicate that controlling for labour market employment reduces the conditional means of the earnings distributions. Although appearing counter-intuitive, this is a common result in the empirical literature using sample selection models (see Dolton, Makepeace and Van Der Klaauw, 1989). Indeed, the finding of negative employment selection effects in a wage offer equation has been shown to be entirely consistent with a reservation wage model of labour supply (see Ermisch and Wright, 1989).

9. Due to the semi-logarithmic functional form of the earnings equation, the relative effect (g) on weekly earnings is given by $g=100*[\exp(c)-1]$, where c is the coefficient estimate. Thus, the -0.333 in Table 1 for Bangladeshis indicates that their earnings would be 28.3 per cent lower than a comparable Caribbean worker.

10. Modood *et al.* (1997) show that the non-

reporting of earnings information in the FNSEM is a particular problem for South Asians. As it is not unusual for high-earners to be under-represented in surveys of this nature, this could provide an explanation for the earnings position of Indians in the sample. What it is unable to do, though, is account for the dominant position of Caribbeans relative to the other ethnic minority groups.

11. A natural way in which assimilation may be thought of as taking place is in the acquisition of language skills for those for whom English is not their first language. Even after the addition of language controls, though, the distinctive pattern reported above is still apparent. Whilst this would be indicative of the diverse nature of effects being captured by such controls in standard earnings equations, it would also highlight the need to have specific information upon language skills. Relying upon cohort controls within the immigrant population to capture such language considerations does not appear to be a wholly satisfactory solution.

12. In a comparable sample from the Spring quarter of the 1994 Labour Force Survey, Bangladeshis accounted for just over 5 per cent of the ethnic minority population. A similar proportion also identified themselves as Bangladeshi in the 1991 Census.

13. Assuming that is, a positive relationship between earnings and English language proficiency. As shown in Table 4 below this is indeed the case.

14. Peach (1996) provides a comprehensive analysis on the extent of geographical concentration of ethnic minority groups in Britain, noting that some wards comprise up to 90 per cent ethnic minorities.

15. There were 9,527 wards in England and Wales at the time of the survey, although their boundaries are subject to periodic review.

16. This in itself is an interesting finding as Blanchflower and Oswald (1990) and the subsequent literature on the wage curve typically use unemployment rates for large composite areas. However, it may be more instructive to think of this as a local neighbourhood effect rather than a strict unemployment effect in this particular context as a ward is unlikely to constitute a self-contained labour market.

17. As the decomposition is based around a framework of predicted earnings, changes in model specification impact upon earnings differentials. Hence, wage offer differentials vary slightly across the columns of Table 3.

18. When such a distinction is made in the earnings equation the coefficient estimate on the variable denoting non-fluent English language ability is -0.095 with a z-statistic of -2.04.

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